Our Cities, Our Future:

Policies and Action Plans for Health and Sustainable Development

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*Edited by Charles Price
and Agis Tsouros*

Ayuntamiento de Madrid

OECD
OCDE

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This publication contains contributions from cities, international organizations and institutions on the themes of health and sustainable development. Perspectives on the issues are provided from the Chair of the Commission on Sustainable Development, the World Health Organization (WHO), the Organisation for Economic Co-operation and Development (OECD) and the European Foundation for the Improvement of Living and Working Conditions (EFILWC). Examples of innovative policy making and action are mainly drawn from cities belonging to the WHO Healthy Cities project and the Ecological Cities Programme of OECD. Important issues and action at the international level are discussed. The annex includes the report of the International Healthy and Ecological Cities Congress held in Madrid 1995, from which most of the material in the book was selected.

Foreword

Investing in the health and the environment of cities means investing in the future, the survival and prosperity of our growing urban societies. Developing integrative policies and programmes for health and ecological development requires strong political will and a commitment to sustainability, equity, intersectoral cooperation, community involvement and close collaboration between national and local governments. This book is about translating the theory into practice. The examples are mainly drawn from the experiences and innovative initiatives of cities that participate in the WHO Healthy Cities movement and the OECD Ecological Cities project. At the 'International Healthy and Ecological Cities Congress – Our City, Our Future' which was held in Madrid 22–25 March 1995 participants presented and discussed a wide range of innovative case studies from all over the world. The purpose of the publication at hand is to capture the state of the art of international action and provide insights into the process of change from a selection of case studies and keynote speeches presented at the Madrid Congress. The book provides concrete examples of good practices and supportive mechanisms for change at local, national and international levels.

Josef Konvitz	*Agis D. Tsouros*
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*"We must strive for **urban utopia** in our planet's cities."*
Her Majesty the Queen of Spain

*"We, with our mandate to govern and administer, have a responsibility
to make our cities healthier and more habitable."*
**José Maria Alvarez del Manzano y Lopez del Hierro
Lord Mayor of Madrid**

*"There is another side to the coin. That is HEALTH OPPORTUNITIES
that are generated through urban development."*
**Dr Hiroshi Nakajima, Director-General of the
World Health Organization (WHO)**

*"A new ethic must be put into practice. But this will remain impossible unless
we stop thinking of our participation in the common good as a tax."*
**Mr Ariel Alexandre, Head of Urban Affairs Division
Organisation for Economic Co-operation and Development (OECD)**

*"We have to care not only about future generations, but also for present
generations and especially for those who live at the margins of our society."*
**Mr Eric Berborgh, Deputy Director, European Foundation for the
Improvement of Living and Working Conditions**

*"The developed countries have to recognize that their urban lifestyles,
their patterns of production and consumption
are an important part of the global environment problem."*
**Professor Dr Klaus Töpfer, Chairman
United Nations Commission on Sustainable Development**

*Opening of the International Healthy and Ecological Cities Congress,
22–25 March 1995, Madrid*

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The global urban challenge

The role of urban communities in global sustainable development and in the improvement of local health conditions has already been recognized by the Rio Conference on Environment and Development in 1992. The conference underlined the key roles of human health and of human settlements for our common future. One of the main documents of this conference, Agenda 21, calls in Chapters 6 and 7 for international, national and local action in these fields. As many worldwide health problems arise from unhealthy living conditions in cities, this congress focuses on two interlinking cornerstones for sustainable development.

The challenges are indeed both urgent and impressive. Urban growth of large cities, metropolises and even "mega-cities" is about to continue. At the turn of the century, half of the world's population will live in cities. In the year 2025, the earth is expected to be home to almost 100 mega-cities with a population of more than 5 million. 80 of these agglomerations will be located in what we call today the developing countries.

Big cities often witness excessive and wasteful consumption of water, energy and other resources. With lack of appropriate infrastructure and technology, these cities suffer from wide-spread pollution of air and water, even contamination of soil and food. Health conditions in cities of developing countries are often far below decent standards. Even in prosperous countries, many health disorders are related to specific influences from an urban environment.

The Social Summit in Copenhagen once again highlighted the importance of social issues for sustainable development. In many cities of the world, the absence of well coordinated urban and regional planning contributes to economic and social deprivation, loss of community, social segregation and other negative urban trends, which in turn contribute to social diseases like crime, alcohol abuse and drug problems as well as to psychological disorders.

After many years of analysis and discussion, it is now time for action. For progress toward healthy and ecological cities, three areas of action are of prime importance:

- First, we need a modern infrastructure for environmental and health protection. Drinking water supply, wastewater treatment, waste disposal and remediation technologies are essential for adequate urban living conditions. Millions of people in developing countries do not even have access to the most basic life support systems.
- Secondly, urban production and consumption patterns, often linked with highly mobile and energy-intensive urban life-styles, need to be adjusted to the needs of resource protection. Let me quote a very impressive example. A European city with 1 million inhabitants requires on average more than 10 000 (metric) tons of fossil fuels, more than 300 000 tons of water and 2000 tons of food *per day* and at the same time it produces 1500 tons of harmful emissions, 300 000 tons of wastewater and 1600 tons of solid waste. It is quite obvious that we cannot count on modern technology alone if we want to solve these problems. More attention has to be given to strategies for product recycling and product responsibility of manufacturers; last, but not least, changes in behaviour patterns related to mobility, energy use and leisure activities need to be encouraged. For the necessary adjustments, environmental and health protection need to be integrated into mainstream economic, development and planning policies and to be supported by economic instruments using the market mechanism.
- Thirdly, the internal structures of the cities and in particular those of the large agglomerations, need to be examined. When growing cities lack a focus on existing or new centres, when they "dissolve" into the county-side, creating vast suburbs where people have to use a car when they want to buy a loaf of bread, the result will be a very unsustainable physical structure. It has become evident in the context of climate protection policies that much of the energy consumption in transport is the result of the settlement structure and of ill-advised planning policies. Data from research on urban travel patterns show that very clearly: to satisfy the same set of daily needs, residents of a typical, purely residential suburb of a large German city travel three times as much by car as people living in a city sub-centre. In the search for a sustainable land use pattern, we may come to rediscover the wisdom of traditional urban design which has, to this day, contributed so much to urban vitality and the community spirit. At the same time, a concentration of settlements around well-equipped centres can help preserve the open space which is necessary for an environmentally sound and healthy region. In looking for what makes urban neighbourhoods vital, attractive and socially stable, a healthy mix of urban functions is seen to be a key element.

The agenda for sustainable urban development

Future generations may look back on the Rio Conference and on Agenda 21 as a turning point in the history of urban planning philosophy. For the first time in history, urban policies are not defined solely from the perspective of individual needs, but also from the requirements for the survival of this planet. "Think globally, act locally" – this slogan stands for a new comprehensive and integrative approach which is the essence of sustainable development.

The broad scope for local action is demonstrated by the Agenda 21 chapter dealing with sustainable human settlements development, which includes

programmes for shelter development, sustainable land use planning and management, provision of environmental infrastructure as well as sustainable energy and transport systems and construction industry activities. With regard to the estimated financial needs, the section relating to human settlements stands out as the most capital-intensive section of Agenda 21.

The UN Commission on Sustainable Development, which was subsequently installed to monitor the implementation of the Rio decisions and to provide global leadership on the road towards sustainability, has from the beginning attached high priority to issues both of human health and of human settlements development. In the 1994 session of the Commission, which I had the privilege to chair, the Commission undertook an in-depth review of the state of global and national actions in these fields. The interlinkages between poverty, lack of basic urban infrastructure and environmental services and poor health conditions were foremost among the concerns of the Commission.

The message has come through that – on a global scale – the future of mankind will be shaped largely by urban conditions. Whether or not governments find ways of coping with accelerating urban growth, whether or not local authorities succeed in combating pollution, limiting automobile traffic, securing basic health and social needs – this will determine the quality of life for the generations to come and with it the chance to solve conflict within nations and between them.

Let us be clear that it is not the city as such which can be blamed for the conditions which we find wanting and often appalling. There will be no road back to a pre-industrial world with a majority living in the countryside in harmony with nature. The Commission has recognized the potential of cities for housing a growing population with minimal impact on landscape and other natural resources. The challenge is to organize large urban areas in such a way that allows for efficient provision and management of housing, job opportunities, commerce and trade, mobility and leisure.

Let me say a few words about the mandate of the Commission. The Commission's role is to draw together the various activities on all levels – global, national, regional, local – and to provide leadership on the road towards sustainability in development. It is not going to substitute for any existing international institutions, but it is also more than a coordinating body. It is the Commission's mandate to bring together governments and international institutions, in particular those of the UN system and to provide leadership, analysis and coordination on the path towards sustainability. It is in this spirit that the Commission on Sustainable Development invites governments and international organizations, such as the World Health Organization and the OECD, as well as non-governmental organizations and individuals, to share the task of designing and implementing global strategies for sustainability.

The role of OECD countries

What is the challenge for the OECD countries in a global strategy for sustainable human settlements?

First of all, the developed countries have to recognize that their urban lifestyles, their patterns of production and consumption are an important part of the global environmental problem. It is one of the important messages of UNCED and its follow-up that the developed countries, even though their health

standards are generally better, are in no way the environmental models of the world. They are, however, better at externalizing negative environmental effects to other regions, to the atmosphere, to the oceans.

Second, the developed countries are in a position to provide the blue-prints, the know-how and the technology for managing large conurbations in ways which provide minimal standards for health, safety and basic services. The vision of "ecological and sustainable cities" is gaining more and more ground with local government institutions, with planners, architects, with contractors and engineers and most importantly, with the citizens who in their daily lives will make the adjustments for a sustainable life-style. We need the power of this vision, the imagination and the talent of all these people for our own cities, but we also need to offer this innovative power to the local authorities in the developing countries which are often overwhelmed by the sheer size of their tasks. It would be a great symbol of global urban solidarity if more and more cities from OECD countries would form partnerships with cities from developing countries, or countries in transition, for the transfer of know-how and technology and for the exchange of experience. Let me say it again: developed countries cannot claim possession of higher wisdom in urban planning. Learning for sustainable urban development is not a one-way street. Many traditional local practices have proved their superiority over imported expertise. And yet, the institutional and technological capacities of developed countries can be an important boost to the struggling urban authorities in the southern hemisphere.

Looking towards the upcoming United Nations Conference on Human Settlements, HABITAT II, it is appropriate and urgent that the nations united in the Organisation for Economic Co-operation and Development define their specific contribution to a global picture of human settlement policies. In my view, the work going on in the urban programme of the OECD and in particular in this "Ecological City Project", stands for the most innovative and the most enlightened elements which OECD countries have to offer to the urban communities of the world. Linking this work to the work of the Commission on Sustainable Development and to the preparatory process for HABITAT II would greatly help in creating the powerful partnerships needed for mastering the global urban challenge.

Keynote:

Networking for Action on Sustainability and Health

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Keeping up with the recent international conventions and plans in the environmental, social and health field can be an overwhelming and sometimes confusing experience for those who work at the local level. On the eve of the 21st century an abruptly awakened international community is rushing to lay the foundations for a world with new aspirations. These represent the legitimizing umbrellas for action in areas that have been neglected for too long and areas that have crucial significance for human development, wellbeing and the survival of the planet. The implications for change are breathtaking, including above all changing and reviewing the values and the principles (explicit and implicit) on which we build our institutions and against which we measure our achievements and progress.

No matter how distant (and far away) all these developments may seem from a community or town perspective (which is often the case) it is important to remember that they are grounded in a response to the accumulation of a set of concerns, pressures and expectations which have a high relevance to the urban context. They are city agendas as much as they are the national governments' agendas and the agendas of the international community.

During the social summit week in Copenhagen in March this year, moods and assessments constantly changed from disappointment and disillusionment to approval and optimism. The natural impatience and expectations for firm (legally binding) commitments to social development by developed and developing countries at times overshadowed the political significance of the summit and its implications for the future. Again the point that was repeatedly made is that these issues should be everybody's business. As the chairman of the summit said: ask what you can do, not what they can do for you. The issues addressed at the summit draw a lot on the experiences of urban communities and have enormous implications for local governments, as was the case at the Rio Summit on Environment and Development in 1992.

Values do not change from one day to the other, nor do decision-makers turn their institutions and policies upside down every time an international declaration calls for change. It took many governments more than 15 years to recognize officially the link between poverty and health and begin to develop policies to reduce health and environmental inequalities. Many countries,

regions and cities could today boast examples of innovative programmes and initiatives that are based on or reflect the principles of the strategies for health for all, Agenda 21 and social development. Often these are isolated islands of good practice that have limited impact on the pursuit of large scale integrative actions.

The emphasis on integrative strategies and long term social, economic and environmental sustainability provide the link between the Healthy Cities project and the OECD's project on the Ecological City. The concept of the Healthy City, like that of the Ecological City, does not describe a city that has reached a particular environmental state or condition, but rather a city that is committed to putting the environment (and health) high on its political agenda and creating a structure and process to achieve it.

Health is not a party political issue. Sustaining our environment is not a party political issue either. The challenge for cities is not one of scientific or technical know-how but it is one of the social and political application of answers already known to us. City administrations are faced with major decisions in a highly complex and changing internal and external environment: ecological, public health and social demands, decentralization trends, economic development challenges and opportunities, metropolisation, consumerist and community pressures, technological developments, new democratic processes and reforms (in several countries), as well as the challenge to being open and living up to new ideals.

In the context of these challenges to our environmental, social and economic sustainability and the search for new integrative and cross-sectoral strategies, three points have great importance in the Healthy Cities work. The first point is that cities that wish to be in the forefront of development today and to have the ability to adapt continuously must possess the space, the time, the skills and expertise and the energy to explore and take advantage of new opportunities and ideas. In other words they need to *pre-invest in enabling and empowering structures and processes that will help create the capacity for and a climate conducive to innovation, experimentation and alliance building.* All modern social movements call for intersectoral action, community participation and empowerment. Governments should also adopt an enabling framework of policies and strategies targeted at supporting community initiatives and actions.

Researchers today are now paying much more attention to the process by which new ideas are adopted and successfully implemented in organizations. As Colin Hastings (*6*) said:

"There is a fund of ideas and actions available if only we're prepared to find the means to unlock them. The resourcefulness of people in their ideas and actions is directly related to the environment in which they operate. Creating the right climate is the biggest step needed to achieve innovation. Harvesting, analyzing and disseminating information about innovative actions from different countries and settings is an essential tool for catalyzing change".

The Healthy Cities network is a group of cities and towns around the world that have been investing in innovation for some years now. They represent a body of knowledge and experience that is of real value not just for themselves but for cities around the world.

This leads to the second point. *The need to invest in creating cooperative networks that cut across traditional territorial boundaries.* Networks are organizational forms that provide for collective learning processes and can thus reduce uncertainty in the implementation of innovation. By sharing the experience of innovators, networks can help cities avoid repeating mistakes or having to reinvent the wheel. Thus networks can increase the efficiency of cities and can also provide the basis for competence building, creating complementarity, socializing risks and influencing (and controlling) the evolution/innovation process. Collaboration permits networks to mobilize, coordinate and reconfigure the developmental processes, thus creating permanent innovation capabilities. There is a growing body of research in the field of innovation networks and notably the work of Roberto Camagni and the GREMI group. (*5, 7*)

Networks can mobilize the unique innovative capabilities of different partners within cities, while simultaneously connecting these diverse contributions into an interdependent global network of cities. Times of rapid social, economic and technological change highlight the need to use innovation networks as strategic instruments. These networks represent strategic alliances (within a closed set of selected and explicit linkages with preferential partners) which in essence allow control and influence over the development process.

The WHO project cities networks bring together partner cities that are committed to a comprehensive approach to the Healthy Cities idea. The network is guided and given purpose and direction by a strong set of organizational principles. It is characterized by diversity, cooperative strategies and a strong branding of the product. The project structures and processes help change the way cities understand and deal with health and the environment and produce both the strategic glue for inter-sectoral health plans as well as alliances for environmental and health development. A very wide range of mechanisms for communication and sharing of information have been put into place that serve to exchange learning, provide support and to hold the overall project together while simultaneously enabling a wide range of diverse activities (*2, 3, 4, 1*).

The project gives cities methodologies and structures that can be transferred from the health field into other fields where the 'integrated' approach is called for. In other words Healthy Cities project processes are now placed ideally in cities to play a key role in the development of strategies for sustainability, social integration and social development. Such processes can give cities a valuable competitive advantage, for example when bidding for European Commission programmes in the fields of the environment and telematics.

Undoubtedly the major strength of the WHO network is the political legitimacy it has provided to a wide range of innovative policy changes and practices. Large and smaller cities today through the internationalization process become the gateways of international relationships. The internationalization of linkages makes it also necessary to overcome the antagonism between local and national institutions and to elaborate integrated programmes with the collaboration of the public and private sectors. The WHO Healthy Cities project has established collaboration with the EU sustainable cities campaign and all project cities have endorsed the plan to develop Agenda 21 plans.

The final point follows from this second point. The Healthy Cities network – and other networks such as sustainable cities – represent a global resource. Already there are many examples of East-West and North-South exchanges in the WHO Europe network. The East-West linkages have received most attention, but there is also the example of Glasgow's work with Chittagong in Bangladesh, the work of the Francophone group (joined by the Quebec network) in West Africa, the links between the Spanish network and the Latin American cities and Toronto's work with Sao Paulo in Brazil.

The power of the Healthy Cities approach and its global importance is now being recognized by WHO at a global level. More than 900 cities and towns world wide are involved in the Healthy Cities Healthy Communities movement. Not only is there the symbolic importance of designating Healthy Cities as the theme for World Health Day in 1996 – the tenth anniversary of the establishment of the European project – but WHO Headquarters is now embarking on making Healthy Cities a major interregional programme. This means that there will soon be formal Healthy City networks in all of WHO's regions.

But while networks within regions are very important, there is also a need to expand linkages and exchange of experience and information between North and South and recognize that this is very much a two-way exchange – as noted in a recent pamphlet from the Local Government Management Board in the United Kingdom, discussing "North-South linking for sustainable development":

"North-South links provide a vehicle, both for extending mutual understanding of global problems and for joint action on sustainable development initiatives. Direct contact with other cultures and communities can vividly highlight issues of overconsumption, excessive use of resources and other problems in our own communities".

If the health, wellbeing, quality of life and human development of people in cities throughout the world is to be improved, not only must the cities of the North assist the cities of the South, they must learn from them how to reduce their adverse global impacts on health and sustainability. And within this global approach it is clear that the problems of distressed urban areas should get priority – both within the cities of the North and the cities of the South. Indeed, recent developments in the USA serve to underscore this perspective and the relevance of South-North exchange. In the inner cities, the experience gained in the Third World by the US Agency for International Development is now being applied to address the health, social, environmental and economic needs of inner city residents.

As we approach the dawn of the urban millennium, when for the first time the majority of the human species will live in towns and cities, we have a desperate global need for the innovation and the networking that is characteristic of the Healthy Cities network. It is clear that environmental, social and economic development go hand in hand; that there can be no health without socially and environmentally sustainable economic development and that human development is intimately linked to improved human health and wellbeing. Strategies that integrate health in development must be at the core of action to promote social cohesion and sustainable development. And while global thinking and global summits are valuable for the ethical framework they establish and while national governments are valuable for the statutory framework they

establish, it is at the local level – in the cities, towns and villages – that the fate of the world will be decided.

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Keynote:

Policies to Improve the Urban Environment

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Introduction

The reasons why the urban environment must be improved are threefold:

1. The quality of life in cities is declining and urban pollution keeps increasing in terms of N0x and C02, waste, noise, ugliness, dirt, lack of greenery;
2. The demand for a good local environment is becoming increasingly loud and is therefore having a growing political impact;
3. Many modern activities seek to establish themselves in pleasant, non-degraded, non-polluted areas.

In addition, doing nothing about the urban environment would mean doing nothing about the environment in general; cities will therefore have a major role to play not only in improving their own environment, but especially in improving the environment at the international, global level.

So far most authorities – at every level – have tried to solve sectoral problems, such as air pollution and waste collection and treatment, or have tried to improve the built environment in certain districts by creating pedestrian zones, renovating housing, etc. Reducing urban pollution and improving the quality of life are still too seldom combined in a single policy. In addition, local coordination of the various sectoral policies for pollution control is still quite inadequate. As for environmental requirements, they are very seldom incorporated in local non-environmental policies.

The objectives and resources for policies to improve the urban environment are still very limited. But despite these limitations, the efforts made by some cities are worth mentioning.

Lessons to be learnt from the experience of certain cities

Some cities have excelled in rehabilitating/revitalising old or run-down districts; others in the transport field and yet others in energy savings and the conversion of waste into heat and electricity.

Rehabilitation of run-down areas

Rehabilitation operations mainly concern the old town centres, but are increasingly being carried out in the neglected districts of recently-built suburbs or of former industrial zones which have become practically wastelands.

The experience acquired so far shows that the improvement of the built environment must be combined with a reduction in the most serious types of pollution (waste, water pollution, smoke) if the cities are to see a real economic revival. London, Manchester, Vancouver and Istanbul illustrate this point. In these cities new uses have been found for run-down buildings or sites, the areas near water have been improved and the pollution of this water reduced (the presence of water, whether a river or the sea, seems to facilitate environmental improvement, as if the water were in itself an environmental asset as well as an aesthetic asset and a recreational facility).

The success of urban rehabilitation policies depends upon preparing a long-term plan and making sure that it is actually implemented, obtaining diversified financial resources, creating a partnership with the private and not-for-profit sectors, inducing strong local and public initiative and setting aside sufficient land. In addition, the use of taxes and tax exemptions to encourage good local environmental practice needs to be encouraged, especially for the rehabilitation of former industrial sites.

In the future, growing and tourist cities will also have to be rehabilitated by simultaneously improving the built environment and reducing pollution. For the time being, rehabilitation policies concerning these cities tend to focus on improvements of the built environment and disregard the pollution and disamenity problem.

Urban transport

"Nomads have now invaded cities through the conversion of town dwellers to nomadic ways, partly as a result of the extent of urban areas and partly owing to the desire to be mobile. This invasion is similar to those by nomads in former times: streets are rendered unsafe by the passing hordes and the barbarians' horses occupy the Forum. The devastation caused by nomads is an ancient theme and has become a modern phenomenon. Movement overrides all values which hinder it."

(Bertrand de Jouvenel, French Economist, extract from an address to OECD in 1971)

Road transport – both private cars and commercial vehicles – causes urban environmental problems in the form of air pollution, congestion, noise and danger. Many cities seem quite helpless in the face of the scale of the problems caused by road transport; either they do nothing, or their solutions come always too late, too slowly.

However, some cities have decided to adopt more drastic policies aimed at banning traffic, promoting public transport and reducing disturbance. In the study "Cities and Transport" the OECD has analysed those policies in Athens, Singapore, London, Los Angeles, Osaka, Munich and Paris.

More recently, some cities like Stockholm and Cambridge have even envisaged introducing road pricing. The principle proposed for Stockholm – making the vehicle driver pay for entering the city – is the same as the one which has already been used for 18 years in Singapore. The aim is to reduce private car traffic and therefore pollution and congestion, but also to improve public transport by using the funds generated in this way. Those who pollute most and use the most public space – i.e. private vehicle drivers – will pay for the pollution they cause, but they will also pay to make life easier for those who pollute least and use the least public space (i.e. public transport users). Levying higher taxes on the use of motor vehicles, particularly in congested urban areas, would be the most effective and fairest method of reducing urban transport pollution, noise and congestion. A growing number of cities (and perhaps even countries) will probably opt for it in the future by increasing taxes on petrol, levying taxes on carbon dioxide emissions, charging much more for parking, charging for the use of highways etc.

The second measure which would help to solve the urban transport problem would be to set up, in every major city or metropolitan area, a single authority responsible for both private and public transport. Only such an authority could find the necessary balance between private vehicles and public transport. Only this body could promote better internalization of the environmental costs due to private motor vehicles and the use of the revenue generated (by having car drivers pay for these costs) to improve the environment and urban public transport.

Generally speaking, it is now being realized that transport demand will have to be contained, i.e. limited or even reduced. This is a radically new idea in today's social and policy context where it is taken for granted that supply must always respond to demand. But this cannot remain true of urban transport, since the lack of space for infrastructure, congestion and pollution will themselves impose limits on traffic growth. Supply management will therefore have to give way to demand management.

Energy savings

Cities are not involved in the supply of energy except in a few countries (Germany and the United States in particular). Most cities, however, could, if they wished, play a greater role in energy savings and in using the resources available to them in the most environmentally advantageous way. They could encourage the creation of industrial plants and premises requiring little energy; they could promote programmes for energy conservation in housing; they could also plan land use with the aim of keeping energy consumption to a minimum. So far the most positive action taken by municipal authorities in this area has been to build combined heat and power plants and waste incineration plants that also provide heat (and sometimes even electricity).

Many examples can be quoted. For instance, Helsinki with its combined heat and power plants and Luxembourg and Brussels with their waste incineration plants which also produce heat and electricity.

To sum up in a few words the success of the policies conducted by the cities which are the most active in improving the environment, it may be said at the end of this brief review that cities must:

- take the initiative, rather than rely on other authorities to do so;
- adopt radical measures which may at first prove unpopular (pollution charges, vehicle taxes, etc.); combine the improvement in the quality of life with a reduction in pollution and disamenities and generally speaking, take a comprehensive approach stressing coordination of programmes and effective implementation.

Policy instruments

On the basis of the experience acquired by some cities, the most useful policy instruments and mechanisms seem to be:

- economic instruments;
- the systematic inclusion of environmental concerns in urban policies;
- partnerships with the private sector and the public.

First and foremost, every possible means must be used to achieve better "internalization of the environmental costs" caused by urban activities, i.e. to make those responsible for urban pollution pay for it or encourage them to stop causing it. In this area pollution and user charges should be used as extensively as possible. These charges are still too few in number or, when they exist, are set too low to be a real incentive.

If the aim really is to reduce urban congestion and pollution, it will be necessary to charge much more than at present for the use of vehicles and electricity, for the proximity of services, etc. In the private transport field, for example, taxes on the use of vehicles would have to be much higher than on their ownership if town dwellers are to be persuaded to switch to public transport, walking and cycling.

Integration of environmental concerns in urban policy

The next step should be to include environmental concerns in urban planning and management. To the same end, those in charge of policies and programmes which are not directly concerned with the urban and environmental field, but which have an impact on the urban environment should be persuaded to allow systematically in the planning phase for the possible environmental repercussions of their activities.

All kinds of mechanisms exist for this purpose – such as interdepartmental committees, systematically providing environmental specialists for the various national and local agencies which lack the necessary expertise and the creation of public urban bodies to coordinate all the local activities intended to improve the urban environment.

Partnerships

No policy for improving the urban environment can succeed without the active participation of the citizens concerned, nor without strong cooperation between

the public, the not for profit and the private sectors: partnerships are a major policy instrument for the revival of cities and degraded suburbs and a key to the success of policies to improve the urban environment. In every case the cities of London, Manchester, Istanbul, Vancouver, Yokohama, Berlin etc., have adopted a policy of working in partnership with the private sector and voluntary organizations for their environmental improvement programmes.

Future prospects

Close examination of the efforts now being made at national and local levels to improve the urban environment shows that, despite their number and range, they are seldom an answer to all the problems of a city and even less to future problems.

Policies to improve the urban environment are still limited, piecemeal and never comprehensive. Moreover, implementation of "the polluter-pays-principle" has not yet had all the desired effects and there is still a long way to go before better internalization of environmental costs on the production and consumption sides is achieved.

In conclusion, two proposals :

Cities – meaning the local authorities backed up by the inhabitants and firms – should make sure they adopt much more ambitious and dynamic policies to improve their environment than has been the case so far. This means that cities should take the initiative and adopt a policy of innovation. This also means that national authorities should encourage such initiatives by passing on to cities the most relevant kinds of data, including information on experiments and by providing incentives and aid of all kinds.

Since it is realized that environmental problems are increasingly worldwide in scope – particularly the risk of global warming – it is becoming obvious that cities themselves will have to make an important contribution to solving global environmental problems, for the simple reason that they contribute in no small measure to these global problems.

The present degradation of the urban environment could become our poisoned legacy to the young and to the future. It springs from a single cause, illustrated by the names given to two French perfumes, one for men, called "Egoïste" and one for women, called "Narcisse". I am not inventing them. They sum up our civilization: utter selfishness and instant gratification.

A new ethic – combining individual and community values, self-realization and generosity – a new ethic must therefore be put into practice. But this will remain impossible unless we stop thinking of our participation in the common good as a tax, as an obligation. Rather we should willingly agree to pay for clean air in our cities, open spaces for the children living in crowded areas and public health in developing countries as if they were our own property – because they are our own present and future property.

If we refuse, we shall one day find ourselves shut out in the same way that we presently shut out the poor and the young, the developing countries and future generations.

Keynote

The Wellbeing of Cities and Citizens in Europe

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The European urban environment agenda: highlights

Europe is first and foremost urban. Aristoteles called the city "built politics"[1]. He wanted it to be bright and safe[2], while Vitruvius wanted the city to be solid, beautiful and useful[3]. City planning objectives in Europe seem to stay much the same, since these principles still appear to be guiding urban values, though there is no single model or single reference. Each city is individual and unique and its future is impacted by the myriad of decisions taken by people and enterprises within it. They are all endowed by a unique culture. According to the Commission's Green Paper on the Urban Environment and the First Report on Sustainable Cities, as we move towards the 21st century cities will continue to be the main centres of economic activity, innovation and culture (CEC 1990, 1994). Cities emerge on the European scene stronger, they compete more, but they also collaborate more (Barrozzi & Tagliaventi 1992a; Eurocities 1989). They all want to win the battle of sustainable development and to become more attractive to people and capital (Burtenshaw et al. 1991). The optimists speak about a quiet revolution in cities while the pessimists speak about urban jungles; neither deny their important role in the future.

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[1] In "Poetics".

[2] Ibidem.

[3] In "De Arquitettura".

According to J. Attali (Attali 1994), the city is the only living organism which has the capacity of renewal. Former President Delors characterized the deterioration of the urban environment as the second most serious European problem, second only to drug addiction (Delors 1994). Dogan and Kasarda have described the development of urban pathology or "ataxia" where an urban place outgrows the boundaries of its niche (Dogan 1988). Urban stress has been identified by the recent report: "Europe's environment: The Dobrîs assessment" (EC 1994) as one of the twelve long-term pan-European problems which threaten health and the quality of life. Expressions like the "Martyr City",[4] summing up urban distress, are significant.

Themes that constantly emerge in the European urban environment agenda and around which most European and international conferences in the 1990's are structured, include: the improvement of the overall urban environment (coming from an increasing environmental awareness); the strengthening of the entrepreneurial tissue of the cities; the creation of employment through healthy and environmentally sound economic activities; the role of telematics in shaping the future of the cities; the efforts in improving public transport and the emphasis put progressively on accessibility rather than mobility; the need to create liveable home environments and neighbourhoods especially for the anonymous peripheries of cities and last but not least the need to integrate all urban policies for these goals and to involve the most concerned citizens in this process. All these objectives are linked to the urgency to recreate a dynamic harmony between the hardware and the software of the cities, to reconcile the body (forms, colours, odours, sounds) and the soul (culture, history, energy, magnetism).

City care seems one of the axes to overcome European crises. The European Commission's White Paper on Growth and Employment recognized Europe's failure to match its wealth creation from 1970 to 1992 (73%) with employment creation (7%) for the same period and it highlighted the need to re-examine our social costs, to transfer tax burdens from human to natural resources through ECO-taxes and the inadequacy of the GNP as a measure of socioeconomic progress. According to the President of the Commission, it is time to adopt a new measure of progress, taking into account the idea of natural capital, also to balance the two factors of production, work and natural capital and to reorient R&D, in order that future productivity gains be achieved in the utilization of natural resources. A new form of solidarity between North and South, East and West has to be established in Europe. Reorganizing cities, prisoners of old models of city-planning, is being suggested as an extremely important challenge to meet.

The concept of sustainable development has achieved remarkable popularity from 1987 onwards. Environmental planning has been defined as the new type of planning, aiming at the achievement of sustainable development. It must be conceived as an integrated process operating within a strategic framework and resulting in a socially sustainable outcome. Sustainable environmental processes are trans-media. trans-sectoral and trans-boundary.

The question of the sustainable and resourceful city has been a challenging one after the universal debate on sustainable development. The concept of the

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[4] Expression used by Professor MAax Van Den Berg, general rapporteur of the XXX ISOCARP International Congress (Prague 1994).

sustainable city might be a contradiction in terms, as many scientists suggest that the only sustainable pattern for Earth is the equal distribution of its population on its surface (OECD 1993, UNECE 1992). Beyond these remarks there is a wide recognition that the sustainable city is the city with an improved, non-negotiable environment, social cohesion and economic efficiency (Mega 1992a, 1992b). The EU Commissioner for the Environment highlighted recently that sustainability is a challenge for social change (CEC 1993b). Enterprise plays an extremely important role for strengthening all dimensions of urban sustainability. The functioning of the city itself is often compared to the functioning of an enterprise, which has to be more environment friendly, participatory, efficient. It could not possibly be too arbitrary to compare the city with a semi-public enterprise, aiming at public usefulness, economic efficiency and optimal environmental performance.

When we speak about cities we speak first of all about humanity and public spaces. Public spaces, the sanctuaries of the classic Agora, are at the heart of many urban concerns. What Rem Koolhas describes as fortresses of freedom and what Oriol Bohigas defines as spaces for action in his theory of metastatic planning (La Ville 1994), have been defined as islands of humanity in the archipelago of the city. Metastatic planning is defined as the planning able to create a positive contribution through interventions to the public spaces, able to provoke an overall reconversion of the urban.

Public health and quality of the urban environment are closely interlinked and there is no single fact or policy concerning the urban environment that does not have a direct or indirect impact on public health. Often it is alarming findings about public health that generate policies for the improvement of the urban environment. The "Europe's Environment" report emphasises the fact that in 60 European cities short-term peak levels of ozone during summer photochemical smog episodes are exceeding WHO guidelines, while 65% of Europe's population is supplied from ground water the quality of which is seriously threatened. One could expect urban projects to come out of these findings, or others about the concentration of 25% of the world's CO_2 and 16% of the world's methane man-made emissions in Europe.

Many words borrowed from medicine – such as metastatic or homeopathic planning – have been applied to cities and the idea of prevention applies in city matters as much as in health. Preventing urban diseases is a hard job. The urban space is a unity of time, in relation to a territory. Is this unity really threatened by eclipses and negative externalities? There are differing viewpoints on the degree the form of a city defines the life of the collective whole and on the degree of the overall changes brought from many of the innovative projects included in our overview.

Time management within cities also seems to be entering a new era. The achievement of a more diversified working time is a must and teleworking offers an important means towards an "ecology of time" in cities. Despite all the theories of the 1970s about the "vanishing city" due to the development of new technologies, it is those very technologies which now seem to be a source of richness and potentialities for the cities. Teleworking can lead to a dissociation between concentration in time and concentration in space.[5] Satellite offices

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[5] Report of the colloquium "Le télétravail: un atour pour l'île de France (organized by CATRAL in Paris on 4 March 1993).

for teleworkers seem a happy medium between working at home and working for an enterprise. But of course, teleactivities are just instruments, conducive either to integration or exclusion, depending on the overall policy articulation. Scenarios are always to be formulated about their impact on urban life and the flexicity (EC 1993 b,c).

Given the highlights of the European agenda this paper places in perspective some innovative projects we identified in Europe, conducive to (and necessary for) urban sustainability and improving the wellbeing of cities. Most of them come from a European overview of urban innovations undertaken recently by the European Foundation for the Improvement of Living and Working Conditions (European Foundation (EF) 1993a). The overview focused on projects carrying a collective sense, a significance for a city, projects resisting time and favouring local democracy and participation at the conception, decision and executive phase, projects introducing new ecological materials, techniques, methods and conditions and last but not least, projects that produce culture and are cultural products (EF 1994a).

Many urban policies have failed, but failure is the birth of a new world. The projects are witnesses of the strategic visions that cities try to develop, in order to meet the increasing social, economic and environmental challenges and of the synergy with enterprises and citizens. The projects included in the overview may differ in many respects, but they tend collectively to attempt to tackle the range of urban problems evident throughout Europe: environmental degradation, congestion, social exclusion and marginalization. There are hardly any innovative projects that are neither the products of partnerships across agencies and organizations nor of strategic holistic approaches. The vast majority of projects we introduced call for decentralization, empowerment and devolution. Many projects show the need to embrace a wide range of partners in the effective implementation of projects and the crucial role of local, empowered, communities. The longer term view and the investment in the emerging creative conflicts is a lesson emerging from many of those projects. Innovations may be the first step towards a new urban era.

The European urban Euroscape: state, trends and pressures

Even if each city is unique, they all crystallize a certain number of present-day worries and share a great number of common expectations. Recent documents and works of the European Communities (CEC 1991a, 1991b, 1992a, 1992b, 1993a) identify the following trends for European cities:

- There is a more balanced European urban system, in terms of growth; also an increasing potential for medium-sized and smaller cities (Vernon 1993, EF 1994b).
- There is increased competition and an alternative to this is the strengthening of complementarities (Guigou E. 1994) and the establishment of cooperation networks.
- Cities will be affected by the development of new physical linkages, mainly the high-speed rail network.
- A worrying urban trend is an increasing social exclusion and segregation of

certain segments of the population and migration pressures might exacerbate these problems (EF 1992b).

- Cities have to meet important challenges concerning their environment in order to become sustainable (CEC 1993b).
- Many cities try to develop a strategic vision to meet the increasing social, economic and environmental challenges and the synergy amongst public and private sectors has been central in this process (OECD, 1994).

Behind these general trends, growth and decline seem to coexist more and more in European cities and there is a large literature on this (Alberti and others 1994, Burtenshaw 1991, Delft Institute of Technology 1992, Elkin and McLaren 1991, EF 1992c). Urbanization has facilitated economic growth through productivity gains in the use of labour and capital. The usual historical process of national growth is a range of positive growth rates for major metropolitan areas. There are now some declining metropolitan regions in older industrial and peripheral regions of the EU. Within metropolitan areas it is commonplace for social and economic change to be associated with quite different trajectories for different neighbourhoods. Clearly localized growth accentuates the congestion, stress, noise and traffic externalities, while placing new demands on nature as areas expand. Decline, on the other hand, is associated with a drop in land values and emergence of derelict space. More negative attributes such as vandalism and crime in the declining neighbourhoods arise because the poorest households live in the worst urban conditions. Over the last decade the international economic situation has meant that whilst average national income grew, real wages or benefit levels of the poorest quarter have stagnated. Disrupted job careers have been paralleled by breakdowns in family cycles, poor education and access to information and training. The spatial effects of social polarization are in some cities so marked that they have given birth to the description of divided or dual cities. Social justice becomes of major importance for cities willing to preserve their integrity, to absorb social shockwaves and to assure their future attraction for people and capital (EF 1992b).

In a general way, there is an agreement that the decentralization of population and employment from cores to suburbs since 1950 and the de-industrialization since the 1970s, reinforced patterns of suburban growth and core decline with inner city decay. However, this view is too simplistic as reality provides much more diversified patterns and many inner city neighbourhoods attract residents because of their symbolic and cultural value, while expansion of service industries helped retain vitality in central areas. Another important consideration is that since the 1980s, unemployment has particularly impacted on social sector residents and declining residential areas may now lie in the central city, at the periphery of core cities or in past 1960s settlements well into the suburban fringe. The core decline-suburban growth mode is of questionable relevance in much of southern Europe, as core areas and suburbs continued to increase into the 1980s. In the suburban areas of towns in Greece, Portugal, southern Italy and in analogous fashion to run-down social housing in northern Europe, there are large areas of illegal settlements which house the poor and disadvantaged, with inadequate supportive infrastructure. Legal, illegal; market, non-market; core and suburban, the mosaic of European urban neighbourhoods

presents a variety of growth/decline scenarios with different environmental consequences and land use possibilities (EF 1992c, 1994b).

An increasing globalization together with increasing localism and regionalism may be two (perhaps paradoxically) interlinked trends in the European future. Nowadays society is based on networks (networks of everything) and local actors constitute the diversified poles of the global networks. Technology, information, markets are global but people are local. Information technology provides the infrastructure for the integration of the global system. The space of flows (global) is in interaction with the space of places (local) and the cities gain an increasingly dual (global–local) function. Social movements can always be a source of social change, critical actors in collective consumption and in building up awareness and consciousness but they may disappear or be transformed into urban tribes if unable to connect with the political system. There may be an increasingly institutional diversity and parallel political institutional networks, not necessarily in an hierarchical system.[6]

European cities commit and invest in sustainability

The conference on European Sustainable Cities and Towns (Aalborg, 24–27 May 1994) has marked an important step towards the achievement of urban sustainability. The Urban Environment Expert Group of the European Commission presented there the first Policy Report for the application of the concept of sustainability in urban areas (EC 1994a) together with a Good Practice Guide. The main objective of the conference was the discussion and final issue of the "Charter of European Cities and Towns: Towards Sustainability". Eighty municipal signatories and two hundred individual signatories were counted at the end of the conference and before the issue of the final text. The end of the conference was the starting point for the European campaign for sustainable cities and towns.

The Charter states the responsibility of European cities and towns for many environmental problems mankind is facing. Patterns of division of labour and functions, land-use, transport, industry, consumption, leisure and hence values and lifestyles are responsible for reduction of sustainability. Sustainable human life cannot be achieved without sustainable local communities and local governments and citizens rising to the great challenge of sustainability. Sustainability is described as a creative, local, balance-seeking process extending into all areas of local decision-making. Each city is unique and has to find its individual way towards sustainability. Integrating the principles of the Charter in their policies reinforces their strength and forms a common basis for progress.

According to the Charter, natural capital has become a limiting factor for economic development in cities and urban economies should give priority to investments in conserving the remaining capital and encouraging its growth by reducing the levels of current exploitation, relieving pressure on natural capital stocks and increasing the end-efficiency of the consumption goals. Social equity is finally agreed as being a precondition for the achievement of sustainability, as inequitable distribution of wealth both causes unsustainable behaviour and makes it harder to change.

[6]These described by Manuel Castells in the International Conference "European CITIES: Growth and Decline" (The Hague, April 1992).

Cities and towns that are signatories of the treaty recognize that they cannot export problems into the larger environment or the future and seek equitable regional interdependencies. Priority is also given to ecologically sound means of transport and decrease of enforced mobility. Emphasis is placed on the stabilization and decrease of greenhouse gases into the atmosphere and the prevention of ecosystem toxification. The local authorities that are signatories of the Charter feel strong and ready to reorganize cities and towns for sustainability and ask for sufficient powers and a solid financial base. When developing local Agenda 21 plans, cities commit themselves to work together with citizens.

The Charter embraces an ecosystem approach to urban management and advocates, for the development of urban systems, sustainability indicators on which to base policy-making and controlling efforts, in particular environmental monitoring, auditing, impact assessment, accounting, balancing and reporting systems. However, the Charter is based on the implicit perception that the value of the environment is infinite and no critical levels of sustainability are identified. In various chapters we have, however, the impression that some limits exist, i.e. the reduction of the unnecessary use of the private car implies the definition of accepted levels of necessity (EC 1992, Municipality of Amsterdam 1994).

The Charter, as any declaration of principles, doesn't include time scales for the achievements of the goals or simply for the design of new tools and instruments. Even if policy directions are given for the achievement of every goal, in general terms (i.e. reduction), there are no mentions of critical thresholds and concrete benchmark mentions against which to judge policy achievements. The uniqueness of each city contributes in giving the Charter a very general character, expressing a minimum and first agreement of principles.

The general character of the Charter extends to the lack of hierarchy between policy goals. One can easily assume that all policy fields are of equal importance and that an urban project contributes to urban sustainability when following one of the policy directions of the Charter and not having negative effects on the other policy themes. But the principles are of little help for a decision maker who has to choose between two urban projects in different policy fields of the Charter. One can assume that as cities committed themselves to prepare local Agenda 21 plans by 1996, they will deal with these issues and they will define targets and priorities in consultation with their citizens.

Urban sustainability connotes a stream of at least non-declining outputs and seems inextricably linked to a non-declining urban capital (natural, physical and human). Urban metabolism can be conceived as the economic or production process which leads from flows of inputs (materials, products, energy, labour) to flows of outputs (products, services). A steady flow of outputs requires steady flows of inputs and maintenance of the urban metabolism. The outputs constitute primarily the consumption basket for citizens, while a part of them are used for the maintenance of the production process (Hartwick 1994). Declining levels of per capital consumption seem quixotic; the Charter highlights the importance of maintenance of consumption levels through changes in lifestyles and consumption patterns.

The European Commission's First Report on Sustainable Cities (EC 1994a) recognizes the need for sustainability indicators as tools for quantifying

sustainability performance. If sustainability is a coherent policy goal, it must be possible to measure whether we are moving towards it. But indicators unavoidably simplify and select from complex realities and a deficient or unbalanced set of sustainability indicators may impoverish our understanding of what urban sustainable development is. The tensions between ease of measurement and policy significance is a second related problem. The indicators which are easiest to measure will not necessarily capture whatever is most important and of course, there is always the problem of defining what is the most important.

The World Bank defines indicators as performance measures that aggregate information into a useable form, highlighting, however, the unresolved issues of fluctuation, intertemporal variations and uncertainty. All organizations involved in indicators construction seem to agree that indicators provide a useful tool for policy making (prospective) and for assessing policy implementation (retrospective indictors), but they stress their limitations (Tunstall 1992).

Indicators can measure the success of one course of action and even stimulate action, but they do not indicate what kind of action. Decision-makers dispose of a large choice of instruments for urban intervention and good practice guides can inspire them. Moreover they should be able to define actions which lead with the greatest efficiency to a targeted goal. A thematic indicator can measure the result of an action by comparison to the ultimate aim. Targets for thematic indicators may be defined at the city level, according to the priorities of each city. The performance of a city at the national or European level can therefore be judged according to both its targets and the progress achieved towards this direction.

Urban indicators may generate action through the setting of targets and the indication of the distance between real performance and wished one. At their simplest form they can indicate commitment to a direction of change, especially in fields where targets cannot be defined with precision and the ultimately desirable level is difficult to be reflected. For purely environmental indicators, determined by the physical realities of global carrying capacity limits and human impact on them, there is still considerable uncertainty about these limits, even if at the local scale it is often possible to identity cases where a carrying limit is being broken and to estimate the change in human activity needed to bring pressure back within it.

The "Charter of European Cities and Towns: Towards Sustainability" can serve as a policy framework for the development of performance indicators based on the policy principles and orientations of the Charter. The European Foundation made a first attempt in developing a set of sustainability indicators in the framework of its project on medium-sized cities (EF 1994b). The set of indicators has been done based on a project elaborated in Harvard University (Mega 1994a). Fig.1 presents a conceptual framework for urban sustainability performance indicators based on the pressure-state-response model, while Fig. 2 gives the progress in constructing indicators from data to indexes.

The projects that follow all fall within the wishes and expectations of the Charter on European Sustainable Cities and Towns which was agreed upon in Aalborg on the occasion of the European Conference on Sustainable Cities and Towns. The place does matter.

The city of Aalborg prepared a development project for the integration of ecological principles and techniques in urban renewal. Citizens have been motivated to choose sustainable options in urban redevelopment.

Improving the urban metabolism

The awareness of environmental quality is being increasingly regarded as a civic value and different urban actions are undertaken for the change of environmental behaviour patterns. More and more cities recognize the need for pro-active policies leading to the conception of new systems of production and consumption. 'Green City' does not simply mean green spaces, grass roofs, timber frame constructions, improved energy systems and water cycles (Elkin and McLaren 1991). A whole cultural reform is needed to give meaning to all the technical achievements. A wide urban consensus is a necessary precondition. New environment-friendly lifestyles cannot be imposed, they are developed through innovative partnerships rooted in the local culture. Industry is becoming more cooperative. In a conference organized by the Foundation, (EF 1992a) the relevant working group was unanimous in suggesting the changing of the well-known 'Polluter pays pollution' principle, to 'Potential polluter pays the prevention of the pollution'. Prevention, awareness, pro-action and environmental culture seem essential for the art of building the sustainable city.

Implementing local Agenda 21 is a noble common objective and the sustainable communities project in the UK marks a step towards this direction. It has been initiated by the United Nations Association, following the Earth Summit in Rio and has as its objective the reduction of a community's unsustainable behaviour to a minimum. The project recognizes that in order to make sustainable communities radical change will have to take place within our cities and it is vital to provide vision to people so that they engage themselves. The emphasis of the project is on suggesting a process rather than prescribing a plan and has been running in 20 selected cities. At the heart of the project is the definition of a series of environmental indicators conceived to measure the environmental performance of a city against a wide range of criteria.

Cities compete among them to gain environmental credentials. It is a healthy battle. Leicester was the first British city to be given the status of Environment City and is trying to become a national and international model of excellence. Leicester Environment City is assisted by the 'Business Sector Network' to bring together ideas from the city's commercial sector and provide assistance to businesses, while 'Environ', a non-profit-making company, has been set up to provide local organizations with access to environmental audits and advice.

Environmental plans and charters are being undertaken by many European cities. In France environmental charters constitute contracts between the State and each city. The Charter of Mulhouse is a clear example of a strong will to improve environmental and public health. The general objectives of the Charter are the protection of natural resources, the improvement of life for inhabitants, the adoption of a perspective 'Health and Environment', the promotion of urban safety, the integration of socioeconomic objectives with the preservation of the environment and the participation in the protection of fauna and flora. All city structures have been mobilized to ensure the transparent

and smooth implementation of the 52 actions of the Charter which includes the coordination of the Urban Plan, the Plan for Urban Transport, the Green Plan, the Charter of City Health, the Intelligent Waste Plan, the Energy Plan and respect for the environment and the policy for underprivileged districts.

Reconsideration of the urban metabolism puts lot of emphasis on waste. Waste is starting to be considered as a resource. Self-sufficiency seems more and more important for European cities and many innovative actions are being taken for the prevention of industrial waste and the avoidance, re-use and re-cycling of domestic waste. In Parma plastic waste is being transformed into building material and in Rimini organic waste from hotels into agricultural compost. Each citizen contributing to the latter highly environmental process is rewarded with a plant. The Municipality of Oeiras, in the metropolitan area of Lisbon, set up a backyard composting of organic waste programme. The project, very innovative in the Portuguese context, aims at reducing dramatically the amount of waste the municipal services collect, transport, treat and dispose of, giving inhabitants the possibility to produce by themselves a high quality fertiliser for their gardens and increasing people's awareness of urban environmental problems. In Aarhus, the Council that oversees recycling and minimally polluting technology processes and recycles 60–70% of domestic waste.

In Germany, environmental awareness has often been linked to socio-economic change, first and foremost in the cities which have been the scene of many socio-political transformation processes. With the challenges of unification in the city of Berlin, the ecological restructuring concept, introduced as early as 1984, came to prominence. It consisted of four elements, a set of guidelines, a model of field of action, the concept of ecological neighbourhood development and the concept of eco-stations. Citizen's participation is a must at all levels and stages. The concept advocates a new sustainable symbiosis between economy and ecology in the urban context and puts emphasis on environmental preventive policies to tackle anthropological origins of problems (Hahn 1992).

In one of the most active German cities during the transition period, Leipzig, ecology found a fertile ground. Non-governmental organizations, together with the city government and the citizens, started environmental projects to overcome the really degraded living conditions. Ecology has been used as a means for socioeconomic change. The ecological restructuring of the eastern part of Leipzig is a very good example of ecological restructuring of the whole, starting from several ecological projects and the establishment of sustainable links between city and country. Many of the projects are already implemented. Transport and traffic conditions have improved and attractive green passages link natural spaces inside and outside the city.

All over Europe, cities are becoming laboratories of ecological innovation. Schwabach, a small, self-standing German city of 37 000 inhabitants, offers an example of the efforts to implement an urban ecology planning strategy. The city has been selected by the Federal Ministry because of its unified, dynamic local government and its ecological achievements to date, especially in waste management. Basic principles are that nothing is impossible and everybody has to participate. The pilot study aimed at introducing ecological concepts and actions to a normal city, under normal conditions and with normal funds. After the study, the city council issued guidelines for action and translated

them into a concrete programme in its 1993–2003 Model Urban Development Strategy, leading to Schwabach Ecological City. Public polls were held and questionnaires completed by 1 out of every 17 households: nobody is against ecology, but they need quick successes and think that closing the city to cars is only possible with a revolution (even for an historic centre of a diameter of 700 m and 20 000 households). The detractors of the project want quick visible ecological results and the Ministry agreed to fund the creation of Ecological City Hall.

The neighbourhood level is often highlighted as the level of action in many European cities. In the Netherlands, local authorities are experimenting with new types of neighbourhood management with specific focus on the quality of the local everyday environment. The Romolenporder neighbourhood management in the community of Haarlem gives a good example of ecological neighbourhood management, with people participating in the planning and realization of the neighbourhood and the construction of the houses (timber frame constructions, grass roofs, energy systems).

At the scale of the block, Berlin, the 'recycled city', offers various examples. 'Block 103' is an interesting example, in combining social wellbeing and environmental upgrading. Former squatters in the block have been given the opportunity to own the space they occupied and, at the same time, they have been trained in converting the houses into ecological modern buildings. Special emphasis has been given to energy, water, green spaces and new material and techniques. Another complex, Block 6, has been the field for innovation in alternative water systems. The system is based on a combination of cleaning techniques for the water depending on its origin, previous use and destination use. The project emphasises the learning and communication process. Residents have been trained in 'feeling' the process. The system allows 50% savings in water, while the society of inhabitants participates in the technological monitoring (IFS 1990–1991).

Industrial, technological and business parks throughout Europe provide some examples of public–private partnerships for turning areas of blight into healthy spaces and areas of positive environmental and economic profit. Stockley Park, a former derelict rubbish tip within the Greenbelt to the west of London, provides an inspiring example. A partnership has been created between the developer, the local authority and the University in order to build an international business park and public parkland including recreational facilities. In exchange for the right to construct a business park over 36 hectares, the developer guaranteed the reclamation of the whole site (140 hectares), removal of groundwater pollution and environmental enhancement and landscaping. At all stages of the construction of Stockley, local residents were involved in the process through extensive community consultation.

In Germany, the IBA Emscher Park has been an important role model for urban development and ecological renewal within the northern Ruhr district. Experts from 10 European cities, together with the cities and industries of the Emscher region, work for the modernization of coal mining settlements and the creation of new housing; the development of fallow land and the valorization of attractive locations for industry and services; the preservation and re-use of industrial monuments; the landscaping of the Emscher area into a park; the ecological restructuring of the Emscher river and the protection of the

water environment. New dwellings have been created on fallow land and with new environment-friendly material. High quality locations for industry and services have been given value. Contaminated areas are insulated and re-used. 'Working in the park' is possible owing to the enhancement of the quality and attractiveness of the area.

For a less sustainable urban mobility: facing addiction to the private car

The dependence of cities on the private car is being increasingly considered as a major urban addiction. Environmental problems in metropolitan areas do not mainly come from production; they come from consumption and mainly from traffic. The dialectic interaction and synergy between cities, enterprises and citizens are essential for favouring public transport and the bicycle over the private car and giving priority to the pedestrian (UITP 1991). The restriction of the private car is still creating conflict (Seville, Toledo), but in many cases conflict generates new forms of collaboration and partnership. Historic cities, most affected by the pressure of car traffic on their cultural heritage, have been pioneers in restricting private cars. In a referendum organized in 1984 by the city of Bologna, the population opted in favour of the pedestrianization of the historic centre and a global project has been carried out, comprising the rehabilitation of the historic fabric, improvements in the nearest suburbs, pedestrian and bicycle networks, public transport and parking spaces. Many Italian cities followed (Indovina 1993). Recent experiments include the closure of Rome to cars for one afternoon per week and of the Naples historic centre for two days per week.

Transport systems are being accused everywhere in the world as no longer able to deliver the expected levels of service and especially as contributing by 90% to air pollution. Many of the signs of failure are clearly visible (rapidly moving traffic, safety problems, declining amenities, noise, air pollution) and others harder to spot (social and economic damage on cities and businesses). The great irony is that this conclusion is virtually the direct result of urban system policies in the last decades. System saturation is certainly not an accident. The need for urgent limitations and system controls have to be the cornerstones of future urban policies. Traffic provisions are like arteries in the urban body, but they should be subordinate to and not dominate the body of the city. There is a delicate balance between the city and the car and the diseconomy of scale, starting at a certain point or limit. No matter what mobility at no matter what price cannot serve objectives of urban quality of life. Replacing the focus on accessibility is the only possible direction. Land use management is a main factor for establishing a new and harmonious relationship between the city and the car. The valorization of public spaces is an important element of this relationship.

Achieving the accessible city cannot be left to the market alone. Families cannot compete with enterprises when buying central places for residential or professional use. A city is not a marketable good; it is a political entity and it is a political action, based on a new urban culture and new forms of consensus, which should lead to the accessible city. The distinction between access and mobility is not a trivial one. Unlike sheer mobility, access means not only getting people where they need to go but also getting to them what they need and

telecommunications play a major role in that. Progress in telecommunications impact greatly on the configuration of the city and on urban technical infra-structures – examples being the unification of cables and the disappearance of TV antennas with the generalization of optical fibres.

The 1993 Granada Declaration had already recognized five strategic pillars for achieving accessibility: greater reliance on coordinated land use policy for the attenuation of the unnecessary physical movements, reduction of the need for motorized displacements, broadening of the range of alternative telecom-munications systems for the substitution of physical movements and articula-tion of the above for building up an effective, integrated, multi-model and multilevel access system. The Toledo conference on the Accessible City fol-lowed this direction.

International experiences at the cutting edge were also presented and dis-cussed. Experience from Swiss cities (Zurich, Basle, Berne) and German cases (Aachen) were particularly interesting. Zurich is one of the few cities that has developed a coherent solution to a problems of traffic build-up at intersections. The particularity of the system is its ability to deal with each public transport vehicle individually, allowing it to cross intersections without stopping. Urbanism and Land use Planning favour public transport, channelling motor vehicle traffic and restricting traffic in residential areas. Efforts to restruc-ture the settlement pattern are underway everywhere in Switzerland and sev-eral cantonal laws for physical planning request further developments of hous-ing and workplace in the vicinity of public transport lines. There are also many private and public/private initiatives. Energy 2000 is a new federal effort to engage private enterprises and initiative in saving energy including training of drivers (eco-driving), promotion of the combining of logistics and transport to improve fuel-efficient freight transport.

There are many pessimists about the achievement of the accessible city. Many remarked that we are coming to the same conclusions over the last 20 years. The experience of Bologna is very significant. Despite the huge efforts to limit the private car in the last 10 years the use of motor cars went from 28.3% in 1981 to 39.8% in 1991 in the city and from 48.7% to 57.85% in the periphery.

Heidelberg and Freiburg have been pioneers in introducing low-noise vehi-cles in noise protection districts and Basle introduced the eco-ticket for public transport. Clean, silent and fast tramways gain acceptance in European cities. In La Rochelle, a new multi-optional concept (Autoplus) has been introduced through a partnership between municipalities, the semi-public company for public transport, taxi owners, two private bus owners, one ship owner, hotel owners and a bank. The limitation of the private car comes as a consequence of many information and consultation campaigns Nantes, Grenoble and Strasbourg introduced from 1985. In Toulouse, the city, the semi-public enterprise for pub-lic transport and the society which has created the smart-pass work together for the readjustment of the transport services to people's needs.

Social wellbeing considerations are linked to the provision of public trans-port (Conseil National des Transports 1990), pedestrian streets and bicycle paths are re-emerging in many European cities. Copenhagen has been a pio-neer city in recognizing the social value of pedestrian streets. When the main street, Strøget, was pedestrianized in 1962 (as one of the very early such sys-tems in Europe) there was a heated discussion. Many believed that the scheme was contrary to Nordic mentality and culture, however it became a great success

almost right away. Pedestrianization continued over a period of 30 years and the down-town parking policy aimed to remove 2–3% of the parking space per year, as a very gradual process. With the improvement of the public system and the enlargement of the bicycle network, more and more space has been taken away from traffic and given to people (Rautsi 1993).

Many European experiments on pedestrian schemes have been introduced in the seventies. In the city of Perugia, the pedestrianization of the historic centre started in 1971. Mobile stairs have been constructed in the rock to connect the old city with the modern one and the parking spaces. The passage through the mobile stairs is a valorized space of urban archaeology. The city made innovative experiments by reorganizing the bus network, especially for peripheral zones. The telebus service, introduced in 1985, runs along a principal route, with additional collateral routes, which are served only by request. This is done by means of a magnetic card distributed to the user and a communication centre. The system has proved very efficient (22% savings) and it is particularly interesting in areas with sparse settlement. Increased flexibility in the organization of collective transport operators permits the better adaptation of supply to the changing pattern of user demand. Moreover this type of system provides access to transport for people with reduced mobility (European Foundation 1992c).

In Umbria, the Orvieto alternative mobility system also has many innovative elements. The system was created out of the need to improve an urban life deteriorating because of tourist buses on the historic town on top of the hill, the fragility of the rock morphology and the will to revitalize the old funicular. With the completion of the system, all cars will be parked in large parking spaces at the foot of the Orvieto hills, the funicular will take all passengers on top of the hill and a system of minibuses will take them around the city. The system will be completed with the creation of mobile infrastructure stairs through the rocky caves and management with monétique.

A research study undertaken by the European Commission on 'The City without Car' is suggesting the reconception of a city in pedestrian terms. A city without cars could be composed of various small units, accessible on foot from one end to the other, separated by green spaces and united by high-speed public transport. A city without cars seems to be not only ecologically efficient, but even economically efficient, as it seems to be 2 to 5 times less co   stly. In such a city, enterprise has new local challenges to meet, as job creation is essential for the self-efficiency and sustainability of each small urban unit (CEC 1992c).

Following the research, the city of Amsterdam which had also gone through a recent referendum on the restriction of the private care organized the conference "Car-Free Cities?". The interrogation point does matter, as it expressed reactions, reluctances and inhibitions. On that occasion, the Club of Car-Free Cities was launched by cities committed to promoting policies discouraging the use of private cars. Toledo became the fortieth city to join the club in October 1994.

Psychic wellbeing of cities

Harmony in cities depends greatly on the social wellbeing and the creative coexistence of many cultures. However, many cities seem social jungles even if they are showcases of financial power. Beyond environmental considerations,

social justice is a main criterion to challenge the overall qualities of the city as a social system. However, there are as many competing theories of social justice as competing groups and it is important to look at the ways a particular urban society produces such variations in concepts. Egalitarian views may also be wrong, as 'there is nothing more unequal as the equal treatment of unequals' (Harvey 1983).

Achieving social justice and environmental improvement are not two unrelated objectives. Even in the most prosperous European cities there are urban islands where environmental degradation and social exclusion go hand in hand. They are more or less extended zones in run-down city centres or chaotic peripheral zones. They are places of functional impoverishment with poor housing and insufficient equipment and facilities. Is it a coincidence that the social features of these areas are: poverty, delinquency and crime, high unemployment, low mobility, little access to information, education and training? (Jacquier 1991).

Urban innovation should invest in generating employment though new economic, environment friendly activities improving the quality of life in cities. Offering access to this to disadvantaged groups heavily affected by poor urban conditions is giving them new opportunities for creating self-esteem and a better urban conditions. In all European cities, new environmental jobs (recycling business, water cleansing, etc.), totally unknown 10 years before, are being created. Orienting those people most affected by an unhealthy environment can have considerable results in the dual fight of exclusion and environmental deterioration (EF 1992b).

It is not a coincidence that the innovative actions on job creation we included in the overview of innovative projects come from the countries with the highest unemployment in the EU? The Dublin inner city partnership represents a local area-based response to long-term unemployment. The 'Argilan' employment, guidance and training project in Vitoria-Gasteiz, Spain, has three specific objectives: regeneration of the economic web of the city through new professions; qualification and re-qualification of the labour force, adapting it to the requirements of demand and prevention of social exclusion. 'The Big Issue' in London gave new opportunities to the homeless and unemployed. Launched in 1991, with the support of 'The Body Shop', the Big Issue quickly became London's fastest growing publication with a circulation of 80 000 copies per issue and 1000 vendors. It is now self-financing and expanding in many British and European cities (EF 1993a).

The "Big Issue" project is exemplary in linking employment generation with the major problem of homelessness in European cities, which is still far from the 100 000 homeless of New York cities but figures are galloping. More than 2000 homeless seek shelter in the Paris metro stations every night. They are under a two-fold threat: they may drift into delinquency or may become tramps. It is the health of the whole of urban society which is put in question. And prevention is again highlighted as of prime importance, as cure is only coming after a failure.[7]

Improving the social environment is being closely linked to the prevention of crime and delinquency (DIV 1990). Transport enterprises are the ones most

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[7] Issues well highlighted in the second International Conference on Urban Safety, Drugs and Crime Prevention (Paris, November 1992).

concerned with crime prevention, as transportation spaces and mobile elements are main targets for juvenile delinquency. Graffiti attacks, not related to any form of artistic expression, seem to be the post-modern way of attacking public spaces and property. RATP in Paris set up a specific service for the prevention of graffiti attacks through research on the attackers and for the investigation of more efficient ways of repairing damage (RATP, UITP 1992).[8] Cities have set up innovative direct or indirect crime prevention plans. Danish cities are experimenting with a series of action plans, focusing lately on the strengthening of area consciousness through the inhabitants' involvement in the creation of a better physical residential environment.

An innovative integrated approach to fighting graffiti in public spaces has been developed in Maastricht. The project includes extra means to trace the offenders, education programmes to improve the skills of the graffiti 'artists' and an anti-graffiti bus with formerly unemployed people specialized in removing graffiti. The city made a wall available to the graffiti artists in training where they can express their feelings. Within two years the damage caused by graffiti pollution decreased considerably (80–90% at the railway station). The result of prevention is always hard to prove, but it is clear that graffiti has decreased considerably in Maastricht. Tracing and conditional or alternative punishment have a noticeable effect on preventing recidivism, while there are ex-offenders who, after their artistic training, have become famous artists.

The quality of housing environment is of great importance for the psychic health of a city. In many cases, deterioration of living environments, the cells of the city, leads to disconnection of the urban tissue and innovations in social housing proved to be an essential factor of social integration (CECODHAS 1990; Tsiomis 1991; Stewart and Carew-Wood 1991; Mega 1992c). Mass housing often created social tensions on the urban fringe. It has often been paternalistic, large, remote, uniform, collective, reactive, anonymous, devoid of management and it failed. In many European cities it is now beginning to be self-regulated, local, personal, individualized, pro-active, with corporate neighbourhood space and responsive local management. It has to make proof of vitality of work and enterprise and to allow personal identification. Vibrant local communities are replacing void neighbourhoods. The present energetic and environmental requirements create new needs for landscaping and energy efficiency.

The renewal of the Holly Street Estate in the UK provides an interesting case. The estate was constructed during the 1960s and 1970s as a series of slab and tower blocks, as part of a national slum clearance and social housing programme. Replacing the traditional two-storey East London terraced houses, the estate, comprising 1187 dwellings, became notorious for its state of deprivation, crime and delinquency. The Borough Council recognized that the only means of dealing with the problems of Holly Street is through its demolition and reconstruction. The renewal project was initiated in response to the British Government's Comprehensive Estates Initiative, making funding available for the redevelopment of social housing estates whose physical and social decay is so severe that refurbishment is not viable. This is an effort to maximize every

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[8] An interesting survey done by this service was presented in the International Conference: Public Transport. Security and Environment (UITP, Paris 1992). The profile of the graffiti attacker is : Male (96%), aged 15.18 (80%) and NOT belonging to an ethnic minority.

opportunity for community and economic development through the redevelopment process and to help break the cycle of welfare dependency and poverty.

An analogous project in Alicante, the renewal of the 'Quarter of 1000 housing units', is transforming a degraded social environment into a functional, friendly space. Unemployed inhabitants have been engaged in the renewal works, while all citizens gave their views for the design of the new quarter. The renewal of the Mascagni area in Reggio Emilia is also a good example. It created a multifunctional urban space out of a rigid series of anonymous buildings, a functional combination of old and new with integrated public services and links to the natural environment.

There is a need for intelligent buildings and home environments. The Social Housing Association in Greece created an innovative residential village for low income households, called the Solar Village. The design and planning of the area constitute an environmental experiment, as it exploits sunlight to the maximum and provides many environmental benefits. The Danish co-housing concept offers an innovative approach reconciling the need for new forms of housing with the demand for sustainable development. There are about 30 co-housing communities in Denmark, each comprising 20–50 households. They consist of individual and owner-occupied houses, each one of them designed by the owner himself. A communal house, in the middle, includes a communal dining room and various workshops and facilities, from a playground to an organic garden and a couple of wind turbines producing electricity.[9]

Partnership and solidarity for urban economic regeneration and housing improvement are evident in the case of Glasgow, the city which refused to die. Social housing makes up 60% of the housing stock of the city and there are many rehabilitation projects, undertaken by housing associations. During the late 1980s, housing cooperatives have been set up in Glasgow's peripheral estates, where high-rise housing schemes were created in the 1960s and perceived then to offer better living conditions. Twenty years later, those housing estates were synonymous with marginalized people, poor housing, drug abuse and crime. Housing associations undertook the physical improvement of the estates: improvement of housing conditions is achieved by a mix of rehabilitation, selective demolition and newly-built houses, with residents taking responsibility for the development and management of their homes.[10]

Strategies for integrated urban environmental policies: urban renaissance

Many urban schemes and concepts advocate the renaissance, the revitalization, the regeneration and the refounding of European cities like "Civitas". Making the city a multicultural place, with mix and diversity, reflecting its pluricultural past and offering choices and options for the future seems the main vision and challenge. The urban village, introduced by Léon Krier, includes many of these concepts. Urban functions and services necessary for daily life and ensuring the art of living in cities should be found within every urban quarter, where every resident should also be able to find work. According to

[9] See also the proceedings of the Housing 2000 Conference (Dublin, July 1991).

[10] Information given by Professor Duncan McLennan.

Léon Krier, zoning led to an anti-urban labyrinth, which broke traditional structures, centrality and urbanity. Megalopoles should grow by multiplication and not by over-expansion and consist of a number of urban villages of optimum dimensions. Large cities should rediscover the small scale and short distance. The mix of urban functions and uses is at the very centre of many European dialogues (Etudes Foncières 1991).

No urban territory is isotrope and each part of the city is unique, but there are some common challenges most urban areas want to meet: a good environmental image, social efficiency, jobs generation and self-generated and reinvested wealth. Many urban areas in crisis try to discover a new culture of plan and they believe that plan should be perceived as a strong, transparent and legitimate reference and direction, well beyond any imposition of administrative obligation. The private sector with its dynamism, the local authorities and the state with their concern for the common good and the citizens, as producers and consumers, workers and inhabitants are the three main partners for the regeneration of the areas in crisis, especially for peripheral areas, where there is still open space to consume, urban land added-value to create and social and technical infrastructure to improve.

The urban periphery is at the very heart of these concerns. According to A. Touraine: "We are living, at this moment, the passage from a vertical society we used to call class society (with people above and below) to a horizontal society, where it is important to know who is at the centre and who at the periphery. The periphery is a zone of great uncertainty and tensions, where people do not know if they are *in* or *out*. To face this problem, the principal demand is the creation of a local democracy. This seems often impossible because good things are always supposed to come from the centre and bad things from the periphery. The centre often represents the reason, the Universe (school, the state ...) while the periphery (people, firms, interests, professions) expresses uniquely the interest ..."

City policy (Politique de la Ville) in France, the only EU county to have a ministry for the city, sheds light on all urban peripheries in critical conditions. Partnerships with enterprises for the redevelopment of whole areas aim at improving living and public spaces and bringing businesses and life to the area. In our overview, we included two projects of the French City Policy. Epernay's Protocol of Occupancy of its Social Heritage gives an example of recreating housing estates with an economic approach to complete district revival and a constant concern to prevent isolation and exclusion. The "Citizens House" project in Villeurbanne is an example of a centre to exercise citizenship. Entrusted by the city and the prefecture an advisory office created an expert group, all of them inhabitants of the district and representatives of the population. It took them only six months to define the project with the wishes of the inhabitants.

Urban peripheries suffered a lot from rigid zoning. Many satellite urban areas have been condemned to be dormitory towns as in general they were composed of homogenous and anonymous housing estates without – or with very few – local jobs and services. They have been condemned to be desert areas, not fulfilling the expectations from a city, as a place of socialization and choice. There is no doubt that all these planning experiments have failed and there are requirements for multifunctional alive urban peripheral areas where people can live, work and dream.

New towns created after the war can teach a lot. They were intended to be keystones of a new urban age, complete cities in every respect and many of them show a singular blend of public works and private enterprise, of centralized creation and decentralized management. The new cities have known both success and failure. The experience gained with their creation cannot be reduced to a universally applicable or an easy-to-follow model. Nevertheless a good understanding of the reasons of success and failure provides valuable insight for all these who face the challenges of modern cities. In a caricaturist way, one can say that the cities which failed were the ones which did not succeed in attracting businesses, providing services in jobs and meeting the challenge of mixity. The integration of policies has been in question for many of them. In our overview we identified various urban renewal and regeneration projects that start with corporate approaches to the economic and physical restructuring of vulnerable areas. In Dublin, the designation of under-used and derelict areas and the introduction of incentives for attracting private development into these areas has already produced some interesting results. Dublin Corporation also set up a 'Living Over the Shop' project team to encourage and assist property owners to convert their upper floors into residential areas. On a smaller 'site' scale, in Galway, residential developments above the main shopping centre and other shopping and office sites led to the creation of housing estates on the second or third floor.

Urban renaissance seems to be a rediscovered issue. The recreation of cities like "Civitas" highlights the importance of citizenship and the reconstruction of the "urbis" makes the city an area of universality, organized in a given territory, increasingly functional and varied. Medium-sized cities are among pioneers in this process. The regulatory plan of Siena (1990) is an example of creating modern life in an old city where cultural associations (Conrade) have a power parallel to the city. The special plan of Toledo[11] is based on the following axes: clarification of the dialogue between historic and modern city, enhancement of the historic legacy (consisting of movement spaces, vernacular architectural spaces and the tissue of the streets), an accessibility plan, (including an access plan for cars which absolutely have to go to the centre), optimization of the potentialities (coming out from the physical morphology, an island anchored on the valley of Catilla), optimization of the structural image of Toledo and the coexistence of the historic centre with the socioeconomic centre, promotion of the functional mixity and articulation of University/Cultural/Administrative and Touristic functions. The plan offers a good radiography of the city and its problems.

Public spaces, the noble connective tissue of the cities, are beginning to be given special attention (Council of Europe 1990, 1992). The Brussels Region launched a programme on the quality of their public spaces as for almost 40 years, huge investments in road building had led to the excessive standardization of Brussels' public spaces. Brussels-Capital region prepared the 'Manual of Brussels Public Spaces' aimed at setting up qualitative recommendations for the functional, environmental, cultural and aesthetic character of the spaces. Roads and pavements, roadside plantations and public lighting are being given considerable importance in achieving coherence and identity in the public spaces. The image of the urban district is an added-value to the image of an

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[11] Presented by Jean Bousquets in "The Accessible City" Conference, op.cit.

enterprise. And it is not simply a question of a visual picture. It has to do with the everyday quality of life and work.

Many cities have to manage the 'after event', the space they created for a 'once-in-a-lifetime' celebration. Barcelona provides an example and a model (Henri 1992). The city has lived for centuries with its back to the sea. The creation of a new seafront has been one of the challenges met with the celebration of the 1992 Olympic Games. The contact with the sea has been the common denominator of the three major interventions: the creation of the Olympic Village, the remodelling of the industrial port and the renovation of the Diagonal Mar area. The private sector has been very active in carrying out these three major interventions, bringing a radical change in the perception and use of the urban space by the citizens. The Olympic village is being converted into an attractive residential area with office spaces and green zones leading to the sea-front. The renovation of the old port is under way and the Diagonal Mar action will develop in a period of 7 to 10 years. The 1992 Olympic Games have been a starting and not a concluding point for future perspectives.

In Seville the island of Cartuja, seat of the Universal Exhibition of 1992, now welcomes new activities. EXPO '92 gave the city the opportunity to become an urban laboratory and a symbol for urban innovation. Seville, as the mirror of a multicultural past, a magnifying glass for the present and a telescope for the future, has itself been an exhibition during EXPO '92. A thematic park opened just eight months after the closure of EXPO and has already become third in the world, from its number of visitors. A technological and business park occupies the rest of the space of the EXPO. The Confederation of Andalusian Employers was the first to establish itself there, an example followed by many firms which bought remaining pavilions and plan new activities there. The recycling of the EXPO '92 in Seville is proving to be a model and a lesson for cities like Lisbon, preparing EXPO '98.

The European city: an ongoing referendum

Citizens' participation is a common denominator for most urban revitalization projects. The approximation between citizens and administration is already an irreversible trend in European cities. No more major decisions concerning the future of cities are taken without a well-defined civil consensus. In Barcelona more than 160 city associations participate in the preparation of the economic and social strategic plan, the basic instrument for urban change. In Brussels, the consultation procedures for planning introduce new concepts. In Reggio Emilia, citizens participate in the compiling of the city budget with the use of new technologies. In Valencia, citizens participate in the tracing of the new metro lines. Cities like Evora or Siena already count hundreds of citizen's associations.

Since the fall of the Berlin wall, the geography of Europe is changing dramatically (Masser et al. 1992, DATAR 1993). Europe is increasingly a dynamic pluricultural space of variable geometry. It tends to be a network of urban regions or regional cities, which articulates the economic and sociocultural system, such as the Dutch Randstad. New visions and challenges emerged with the birth of the European Union. However, there is awareness that the abolition of national frontiers does not automatically give birth to an integrated Europe. The 'united' Europe cannot be an isotropic territory; it may be a Europe of

territories in competition – and cities are at the forefront of competing territories. They try to become more intelligent (CEC 1992a; DIV, OECD, URBA 2000 1990; Hall et al. 1991), more flexible (EF 1993b), more efficient, more urban (OECD 1994): they all want to be the cities of tomorrow (IFHP 1993). Most of them believe that creating a better and more equitable environment is an asset for their future. They all agree that the renaissance of European cities is essential for the renaissance of Europe.

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Keynote

Urban Environment, Health and the Economy:
Cues for conceptual clarification and more effective policy implementation[1]

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This paper clarifies working definitions of ecology, economy, environment, health and sustainable development. Then it discusses mainstream interpretations of these terms and recent applications of urban planning. The paper presents a set of principles in order to show that sectoral definitions and professional approaches include misconceptions and erroneous assumptions about these concepts in the specific and unique context of cities. These shortcomings need to corrected by a redefinition of current practice before interdisciplinary and intersectoral collaboration can be implemented effectively.

Economic, health, social, environmental and urban policies share a goal of improving the living conditions of people. Nonetheless, not all cities, nor citizens within a specific city benefit equally. The impacts of economic and urban policies on the health and wellbeing of human populations and all the environmental constituents of cities are neither neutral nor symmetrical. Economic, urban and environmental policies have many effects but only a few are intentional, predictable and measurable. The diverse kinds of interrelations between environmental, health and economic policies in urban agglomerations should be identified and incorporated in decision-making. Today, a growing challenge for decision-makers involved with national development and urban planning is to integrate environmental, health and socioeconomic equity dimensions into mainstream policy formulation at international, national, regional and local levels.

This paper is meant to clarify working definitions of health, environment, ecology, economy and sustainable development. The lack of consensus about the meaning and use of these terms has meant that diverse operational approaches have been formulated and applied. This paper is not meant to be a comprehensive review.[2] It summarizes what mainstream interpretations and approaches to urban environmental policies, health and the economy share in

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[1] Background Paper for Session A on "Concepts and Conflicts: Ecological and Sustainable Development, Health and Urban Poverty" at the International Healthy and Ecological Cities Congress in Madrid, 22 to 25th March 1995.

[2] This paper is based on the author's knowledge and experience of urban planning in member countries of the OECD. The paper does not address the specific problems of urbanization in developing countries.

common, as well as those inconsistencies and conflicts that exist between them. The paper begins with a brief state of the art of common sectoral approaches to urban policy decision-making. Then it presents those principles and working definitions that underline a more integrated perspective. If cities are recognized as being the locus of decisive economic, environmental and health components of human societies and nations, then integrated concepts, methods and tools are necessary. However, these approaches can only be implemented effectively if current conceptual, institutional and professional shortcomings are replaced by innovative measures. These should address the politics and power of decision-making traditionally based on sectoral knowledge, professional expertise and rational approaches which are incomprehensive. Finally some directives for policy decision-making are also discussed.[3]

Complexity of urban planning: State of the Art

Urban problems and policy objectives raise complex questions that do not have simple answers. Nonetheless, too frequently, urban administrators, academics and planners have isolated problems and considered them too narrowly. They ignore complexity, especially the interrelated nature of the components of cities. The "one problem-one solution" approach cannot achieve policy goals or resolve urban problems by identifying and applying "the best solution". The use of hypotheses, pilot projects and scenarios has rarely been adopted. This section of the paper characterizes a "state of the art" which is illustrated by a hypothetical case (see Inset 1). This case illustrates the limitations of fragmented approaches even those that have led to short-term incremental improvements. For example, from the 1950s, urban planners and traffic engineers developed programmes and projects for public transportation that often gave a higher priority to private vehicles than to diverse kinds of public traffic circulation. In many cities, extensive networks of tramways were removed. At the same time, vast urban development projects based largely on spatial and functional segregation by zoning land uses were planned. These included hectares of roads and parking allotments for commuters who were compelled to travel between neighbourhoods that accommodated specified and segregated urban activities. These programmes and projects not only changed the biological, ecological and human components of urban environments but they have also been self-defeating in some respects. For example, despite the large increase in the volume of roads, traffic congestion is a daily dilemma experienced by many commuters around the world. Moreover, high levels of air and noise pollution are unintended outcomes which have both short and long-term consequences on the health of citizens and the sustainability of urban ecosystems. Finally, zoning and monofunctional uses do not serve the capacity of a city to accommodate change easily. When these concepts are applied on a large scale they generate constraints for future generations.

This example illustrates that, in countries with either market or socialist economies, urban planning has increasingly become the province of design professions, public administrators, politicians, property owners and investors. Concurrently, technocratic, rationalistic and bureaucratic approaches tied to monetary values and econometric calculations have commonly become dominant

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[3] This paper will not address these subjects in detail because they will be considered in Session B of the same Congress.

Inset 1

Sectoral approaches to urban planning:
a case study

The difficulties and complexities of integrating environmental, economic and health policies in urban planning can be illustrated by a hypothetical case. The construction of a new industrial estate on the outskirts of a city, for example, is usually related to numerous objectives, goals and decisions by politicians, civil servants and people in the private sector. These decisions concern the availability and the purchase price of alternative sites; the cost of transportation, site services and infrastructure; the availability and price of energy; financing including government loans and subsidies and local employment and housing markets. Local politicians and civil servants will do their best to attract company directors to construct new factories. Their negotiations may include fiscal incentives, such as lower levels of taxation, grants for infrastructure and services, or loans at favourable interest rates. Plots of land that were reserved for agricultural uses, including sites near residential neighbourhoods, may be reclassified for precise industrial uses.

In such cases, there may also be explicit requirements about emissions and waste disposal discharged by the new installations. These requirements are probably not negotiable because they are prescribed by national and/or regional legislation rather than municipal or civic ordinances. However, although these requirements, like most environmental standards, apply across the whole country, local politicians and civil servants know that they are usually policed at the local level. How that is achieved may be negotiable. Furthermore, extant site conditions and the micro-climate can contribute either positively or negatively to meeting environmental standards. These local conditions can be modelled in a systematic way with the inputs to and outputs from the new installations. Cost-benefit analyses can be calculated too. However these instruments do not predict human activities, choices, or their outcomes over the long term. This fact has not been widely recognised by many who rely only on quantitative models for environmental impact assessments.

Many politicians and civil servants will probably argue that the new industrial estate will create many benefits for the community including new jobs, more revenue for local shop-keepers, tradesmen, as well as local and regional enterprises. Nonetheless, some community representatives including doctors and environmental health officers are probably omitted from the initial (and perhaps latter) stages of policy formulation and negotiation. Once the decision to construct the new estate has been approved, those persons employed in the new factories will probably choose the location of their residence by trading off the monetary cost, the distance and the travelling time from home to work with access to community services,

the attractiveness of different residential neighbourhoods and a number of other factors. What may seem rational for the workers, the local politicians and the company managers (in traditional economic terms) may not serve the best interests of the local community, especially its environmental conditions and human health and wellbeing. For example, each of the factory workers, like all motorised commuters who use private transport, will rely on non-renewable fossil fuels, contribute to ambient noise levels and enhance the likelihood of atmospheric pollution while travelling between places of work and residence. Many of these negative outcomes could be predicted by impact assessments and avoided if an electric public transportation service was available, affordable and efficient. Nonetheless, impact assessments are still not mandatory or they are not used effectively in many countries. Considerations of risk and risk assessment, as well as adaptability and resilience, are much less frequent.

The wide range of costs associated with the construction and operation of the new industrial estate may not be fully identified by policy makers or the private sector and not communicated to the local population. This stems from traditional sectoral divisions of responsibilities for policy formulation and the provision and maintenance of urban services and community facilities, such as commerce, schools, health care and transportation. However, it will also be due to the unforeseen outcomes of urban policies and programmes, because the interrelated nature of the economy, environment and human health has not been explicitly considered in the training programmes of most qualified urban decision-makers. Moreover, data and information that illustrate these interrelations are not readily available. Decision-makers still rely heavily on assumptions. For example, the new factories will enhance the local job market and increase production and consumption patterns. However, a range of nontoxic and toxic wastes that cannot be eliminated on site will probably be produced. They may pollute the air and/or the soil and subterranean waters. These negative impacts on local environmental conditions may lead to harmful effects – allergies, respiratory illnesses and poisoning, for example – on the health and wellbeing of the workers and other vulnerable groups in the local community. In essence, the politicians, the factory owners and the workers are neither fully aware of nor solely responsible for the wide range of unintended outcomes that may stem from a decision to develop the new estate.

This case shows that the identification and monitoring of urban policies and programmes is a fundamental, complex task that has frequently been undertaken by fragmented, sectoral approaches. It also shows that these traditional approaches are inadequate because although the economy, the environment and health are interrelated, those decisions that may serve the interests of the former do not necessarily serve the best interests of the latter. In essence, decision-makers rely on inapt tools and methods to represent alternative projects and forecast their outcomes. Reforms are urgently needed. This paper argues that such reforms cannot precede a redefinition of key concepts and the roles of professionals and the public.

or exclusive. Although advocacy planning and community action did receive a hearing during the 1960s and 1970s in a few countries, their innovative stance remains a beacon for change, rather than being more widely adopted. Hence, current approaches still create a social distance between professionals, politicians and the public. The goals, preferences, values and lifestyles of citizens are commonly ignored. Instead, decision-makers usually apply ***ad hoc*** piecemeal approaches to serve narrowly defined, short-term interests. Despite apparent progress, the limitations of these approaches are now visible in many contemporary cities: one of the unintended outcomes of the current economic recession is that the large volume of unoccupied speculative buildings (such as the London Docklands) has illustrated some of the consequences of urban development based largely on short-term sectoral approaches and on monetary returns.

Although urban administrators and planning professionals have been surprised by the unintended consequences of some recent urban policies and projects, one of the great anomalies of the conduct of these professions is that systematic evaluation of policies and projects is not considered to be their responsibility. Moreover, national governments and international organizations have largely neglected data collection on cities. Consequently, feedback between local and national levels has often been minimal. Today, too few public and private institutions are examining the range of costs and benefits of urban development for specific communities, regional and national populations, or global environmental conditions. This limitation could be overcome, at least partly, by the correction of misconceptions and misunderstandings, by the decentralization of control and expertise from precise sectors, by a democratization of decision-making and by a redefinition of current uses of data and other kinds of information in both the public and private sectors (see below).

A conceptual framework, definitions and principles

The complexity of urban questions is often not explicitly addressed because there are too few integrated conceptual frameworks that explicitly consider the reciprocal relations between different components. The common approaches used by administrators, professionals and politicians are represented on the bottom right of Fig. 1. The two diagrams at the top of that figure illustrate approaches that consider two (but not three) of the above-mentioned sectors, such as environmental health (which largely ignores the economy) and environmental economics (which rarely considers health). In contrast to these approaches, this paper argues that the three sets of components should be explicitly interrelated, as shown on the bottom left of Fig. 1 and not considered to be a closed system.

The conceptual shift and political commitment required to recognize and apply this integrated perspective is considerable in relation to mainstream policy formulation and implementation. It should not be underestimated by the simplicity of this kind of graphic representation. This framework also acknowledges that the economy, environmental and health components of cities function at different geographical and temporal scales. Some of these scales overlap whereas others do not, as shown in Fig. 2. Their interrelated nature is

Fig. 1: Diagrammatic presentation of recurrent sectoral approaches shown on the bottom right compared with integrated approaches shown on the bottom left. The top line illustrates two approaches – environmental economics and environmental health – that consider the relations between two sets of constituents but as closed systems unrelated to others.
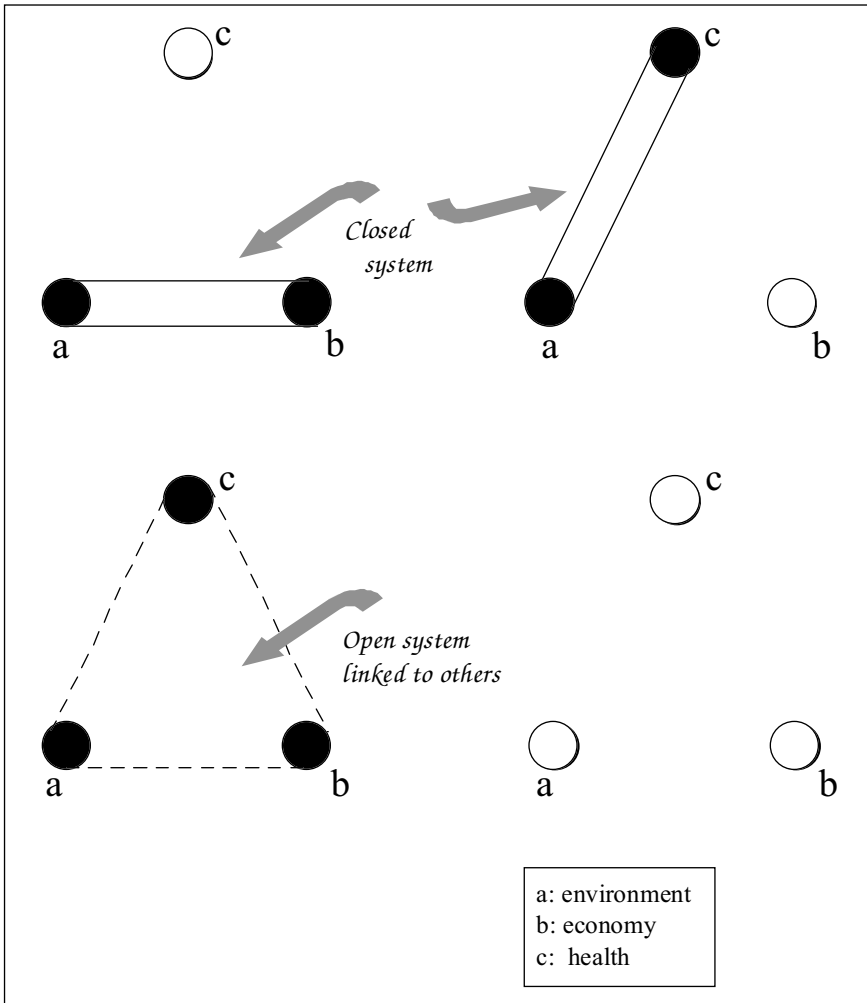
neither linear nor symmetrical. Moreover, given that the geo-political and material boundaries of cities are permeable, it is necessary to relate these scales to others stretching from the human individual to the biosphere. One of the principal obstacles faced by those who want to promote understanding and illustrate the interrelations between the economy, environmental conditions and human wellbeing concerns the diverse geographical and temporal scales

Fig. 2: The spectrum of interrelated scales for health, economic and environmental policies that have been commonly defined according to sectoral approaches and perspectives that have overlooked the specific locus and the functions of cities.
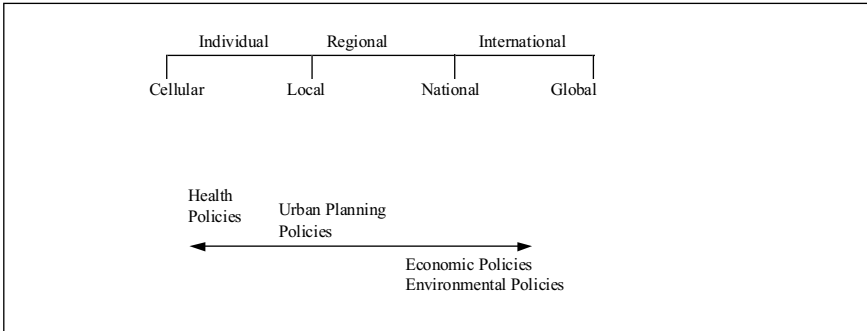
of these dimensions. The sources of many environmental problems, the locus of a large share of economies and the domicile of the majority of the world's population are concentrated in cities. The interrelated impacts of the economy, the environment and human wellbeing are largely yet not only borne by cities. The geopolitical definition of cities delimits a territory which is between the "macro"-scale of global conditions of the biosphere and the "micro"-scale of human individuals and groups, as shown in Fig. 2. Therefore, environmental, economic and health policies should be concerned with units of analysis across this vast yet interrelated spectrum. Nonetheless, compatibility of and coordination between data and information are prerequisites. However, given entrenched customs of problem definition and decision-making by segmented sectors, collaborative information and data collection have rarely been applied.

Today there is a growing consensus that three basic types of data and information are required for a comprehensive analysis of the social, economic and environmental characteristics of cities. These are: a) quantitative and qualitative data at the scales of the region, city and neighbourhood; b) dynamic or longitudinal data intended to measure and monitor conditions at these scales over time and c) surveys of the local populations' living conditions, health, lifestyles, priorities and expectations. Checklists and guidelines can help to establish a comprehensive list of these dimensions, which should reflect the specific contextual conditions of each city. Nonetheless, irrespective of these conditions, the tabulation of these dimensions will depend on working definitions and interpretations of the economy, the environment and health and other characteristics of cities. The next section of this paper briefly presents working definitions of health, environment and economy. A more extensive discussion of diverse definitions and interpretations of these terms, as well as sustainable development, are presented in the Appendix.

Working definitions

In this paper, ***health*** refers to the physiological, psychological and social condition of human individuals, groups and communities over the life-span. Health should not be interpreted only in terms of the absence or presence of infection,

infirmity or morbidity. Rather it is a state or condition that is defined in relation to the constituents of all the environmental and human characteristics that make up the daily lives of people and the reciprocal relations between them. These reciprocal relations include the impacts of human activities on the health of individuals and groups, their economy and their environment.

The word *environment* refers to a complex multidimensional set of abiotic, biotic and human characteristics that are localized in place and time. The human environment refers to those characteristics which people have constructed, modified or perceived as components of their daily surroundings which impact on their social and economic circumstances and their health and wellbeing. In this paper, people and the environment are not considered to be mutually exclusive. They are interrelated components of ecosystems that can remain relatively constant, or change rapidly over time.

The term *economy* refers to the production, consumption, distribution and regulation of all human-made and other resources. These resources are only one of many components of human societies that are intimately related to the state and conditions of the biosphere. Other components that interact with the economy include human goals and values, technology, information and knowledge, as well as administrative, legal and political dimensions.

During the last decade *sustainability* and *sustainable development* have become catchwords which have been interpreted in diverse ways. The definition of sustainability is elusive. Some people interpret it to mean that traditional economic growth, qualified by some ecological principles, can continue. Others imply that it means a radical redirection of economic processes at both national and international levels. Another interpretation underlines what is considered to be a contradiction between material and economic growth and ecological sustenance in order to challenge it. In this paper sustainability is not limited to ecological and economic sustenance; it also encompasses socio-demographic and health dimensions. These dimensions are considered together with the capacity of the built environment to adapt to predictable and unforeseen events and gradual changes within and from outside cities.

Criticisms of recent contributions

In 1980, the World Conservation Strategy of the International Union for the Conservation of Nature presented the concept of sustainability and the challenge of acknowledging the relationship between environmental and development policies. It is noteworthy that economic policy was not integrated into this debate. Seven years later, however, the World Commission on Environment and Development addressed what it considered to be the crucial relations between the economy, the environment and development. According to the Commission, the concept of sustainable development was meant to provide the conceptual framework for an integrated approach. The concept of sustainable development was defined as:

> *"the ability to ensure the needs of the present without compromising the ability of future generations to meet their own needs."[4]*

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[4] World Commission on Environment and Development "Our Common Future." The Bruntland Report (Oxford, Oxford University Press, 1987, p. 43).

This definition raises problems, especially those related to policy definition and implementation, which were not adequately considered by the Commission. First, it asserts that development of the global economy can meet the needs of present generations without compromising the future. Second, it ignores long-standing discrepancies between economic, social and environmental interpretations of development processes. These viewpoints are grounded in conflicting conceptual frameworks in economics and ecology which overshadow their shared linguistic roots. Third, the concept of **need** is value-laden and it has burdened the short history of economic and social development policies. This hurdle is neither recognized nor overcome. Perhaps it is precisely for this reason that the report of the Commission includes so few statements about those means and measures that are needed to change current approaches. Much of the debate in recent years on sustainable development has sought to overcome this limitation. For example, sustainable development has been interpreted as:

> *"... positive socioeconomic change that does not undermine the ecological and social systems upon which communities and societies are dependent. Its successful implementation requires integrated policy, planning and social learning processes; its political viability depends on the full support of the people it affects through their governments, their social institutions and their private activities."*[5]

Other recent interpretations of sustainability argue that current societies should leave the biosphere as rich in all kinds of resources and opportunities as they inherited. This implies that renewable resources are consumed at a slower rate than they are being renewed, that non-renewable resources are consumed no faster than renewable substitutes can be found and that emissions and wastes are not discharged at a greater rate than they can be transformed by either natural or human-made processes. In 1992, the United Nations Conference on Environment and Development (UNCED) considered that sustainable development policies involve extending time frames commonly used by decision-makers from a few years to a few generations; promoting equity for both current and future generations and qualifying traditional development strategies based largely on material growth and economic indicators. Agenda 21 explicitly considers the interrelations between the environment, the economy and health. In this document, however, the discussion of urban health is incomprehensive, because hygiene, sanitation and communicable diseases are considered in detail whereas socio-psychological illnesses and social pathologies are under-valued.[6]

Recent requests for the reorientation of practice in many circles raise complex questions which cannot be tabled and answered in this paper. Nonetheless, it is necessary to raise two crucial ones:

1. How does one anticipate the needs of future generations?

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[5] W. Rees "A role for environmental impact assessment in achieving sustainable development", Environmental Impact Assessment Review, vol. 8, 1988, p. 279.

[6] Refer to "The Earth Summit: The United Nations Conference on Environment and Development"(UNCED). With an introduction and commentary by Stanley P. Johnson. (London, Graham and Trotman; Dordrecht, Boston , Martinus Nijhoff, 1993).

Given that human societies evolve and that cultural adaptations have been common throughout history, is it feasible to rely solely on reactive regulations, or should responses to diverse scenarios be formulated and implemented? If so, whose criteria and values should be borne in mind?

2. How does one deal with those uncertainties that characterize economic policies and human impacts on the constituents of the biosphere?

Given that there are few law-like relationships, is systematic monitoring a reasonable means for the identification of priorities?

If so, in a precise situation, which policies are likely to be the most appropriate in the face of uncertainty and incomplete knowledge?

The implications of responses to such questions will be discussed in relation to urban policy formulation and implementation after some fundamental concepts and principles are considered.

Clarifying concepts and principles

Many recent contributions on "sustainable cities" do not adequately analyse important conceptual questions about the interrelationships between human societies, urban development and the biosphere.[7] Therefore, it is appropriate to recall that there are certain conditions and limits overriding the sustenance of human groups and societies. First, the biosphere of the earth is finite. Both natural and human ecosystems at all scales of the planet and its atmosphere are circumscribed by certain immutable limits, such as the surface of land, its biomass and thermodynamic principles about the production and transformation of energy, including the accumulation of heat. Although these principles cannot be challenged, their relative importance has been interpreted in various, sometimes contradictory ways (even by scientists in the same discipline). These divergences reflect different ideals, meanings, methods and values. They highlight the limitations of current knowledge and the uncertainties of not respecting ecological limits.

Second, cities are **not** closed, finite systems – because they are open to external influences of an ecological kind (such as solar energy or earthquakes), of a biological kind and also of an anthropological kind (e.g. disease and warfare). This means that urban policies and programmes that deal with internal conditions and processes in cities should also consider those external factors that interact with people in cities. Unfortunately, recent contributions on this subject include misconceptions about the nature of urban development. For example, White and Whitney argue that, prior to the industrial revolution, urban settlements "were quasi-sustainable".[8] This claim is hard to justify given that the populations of many cities were highly dependent on all kinds of imported goods. Moreover, it is known that economic and political coercion were commonly used to ensure a regular supply and also to prohibit noncitizens from residing inside the geo-political boundaries of cities. Emigration and colonization largely occurred instead of reciprocal forms of exchange. Then,

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[7] For example refer to R. Stren, R. White and J.Whitney (eds.) "Sustainable Cities. Urbanization and the Environment in International Perspective" (Boulder, Colorado; Westview Press, 1992).

[8] Refer to "Cities and the Environment: An Overview", pp. 8-51, in R. Stren, R. White and J. Whitney (eds.) Sustainable Cities: Urbanization and the Environment in International Perspective (Boulder, Colorado; Westview Press, 1992).

like today, cities were seats of power and control because they were dependent on the supply and control of all kinds of transported resources.

Third, humans must create and transform energy by using materials, energy and acquired knowledge to ensure their livelihood. The increasing disparity between ecological and biological processes and products on the one hand and the products and processes of urbanized societies, on the other hand, is largely attributed to the rapid growth of urban populations, plus increases in energy consumption based on the use of non-renewable resources and the harvesting of renewable resources at a greater rate than their replacement. At the global level, the negative consequences of these trends include the depletion of the ozone layer, a reduction in biodiversity, the accumulation of wastes, the "green house effect" and the incidence of environmental catastrophes including floods, landslides and famine.[9] At the urban level, the negative impacts of these trends include relatively high concentrations of air and noise pollution, solid waste disposal, poverty and illnesses.

Fourth, human beings can be distinguished from other biological organisms by the kinds of *regulators* they commonly use to define, modify and control their living conditions. Humans have several mechanisms that enable them to adjust to specific environmental conditions. These mechanisms include thermoregulation and circadian rhythms, which are used to ensure and maintain vital *needs,* such as nutrition. This fundamental need is not only guaranteed by biological and physiological mechanisms, because cultural rules and practices (that vary between races, across cultures and within societies) are also used. Cultural and social regulatory mechanisms are transmitted by the tacit know-how of populations, including social rules and customs that are shared and respected in order to ensure sustenance. For example, the construction of cities is meant to guarantee the long-term production of resources, provide secure living conditions and enable the reproduction of society. On the one hand, human groups may relocate or adapt their settlements in order to survive local environmental perturbations, as in the Netherlands. On the other hand, since the earliest foundations of cities, human groups and societies have primarily adapted to their environmental surroundings by modifying some constituents of their culture rather than by genetic adaptations. Hence *adaptability* and *resilience* are fundamental characteristics of human culture that could be related to the construction of cities. Therefore, these characteristics of human ecosystems should be explicitly incorporated into urban policies.

Last but not least, cities have been the locus of numerous inventions and the dissemination of knowledge. In addition they have also been the location of many environmental, economic and health problems. Nonetheless, cities should not be considered as the root causes of these problems. Such a "cause-effect interpretation" ignores the nonbounded nature of cities and inherent social processes and human relations that underlie these problems which also occur in some nonurban areas. In this sense, decision-makers can assume a crucial role in the use and distribution of all kinds of resources that define and are mutually defined by economic, environmental and human factors including demography, health and wellbeing. An understanding of cultural and social

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[9] Refer to S. Boyden "Western Civilization in Biological Perspective: Patterns in Biohistory" (Oxford, Oxford University Press, 1987).

regulatory mechanisms is crucial for a comprehensive integrated approach to urban planning.

These principles provide useful cues for economic, health, urban and environmental policy makers. Collectively they mean that policy formulation and implementation should not be dissociated from the ***contextual conditions*** imposed by basic ecological processes and products, or the culture of the populations concerned. Today there is evidence that these contextual conditions have not been identified or understood by many policy makers. Hence, the ***unintended consequences*** of some urban policies and programmes (e.g. those related to mass-produced housing and traffic circulation) in many contemporary cities around the world have had negative impacts. Given that these impacts are the outcomes of ***intentional decisions*** based largely on professional knowledge, technical expertise and innovative technologies, it is appropriate to consider ***how*** and ***why*** some current dilemmas exist in many cities around the world: are inadequate responses to urban and environmental problems due to a lack of knowledge, or an inability to effectively use acquired knowledge, or to some other circumstances? In other terms, are we dealing with problems of substance, or procedure, or both ?

The remainder of this paper will consider these questions. Although the paper is not meant to provide a panacea for current problems, it is intended to present cues for a debate. Given that we now have more knowledge, hindsight and resources than ever before, it is appropriate to identify and discuss those means and measures that can improve the prospects of applying coordinated and integrated policies over both short and long-term periods.

Overcoming current conceptual barriers, sectoral incompatibility and practical obstacles

The preceding sections of this paper show that the formulation and implementation of traditional approaches in the field of urban policies do not lead to optimal results. Although there may be incremental improvements (in fields such as housing, health, employment or transport) these are often achieved in tandem with unintended consequences because what is considered good for one sector is not necessarily so for all others. Hence there may be negative impacts on the environment, the economy and the health and wellbeing of citizens. This paper argues that these outcomes are not only related to the number and complexity of all those factors that policy decision-makers need to consider, but also to conceptual and methodological shortcomings. These include misconceptions about the specificity of cities; the segmented knowledge and incomplete information applied by scientists and professionals; the lack of coordination between policy decision-makers; the lack of systematic monitoring and feedback between national and local levels and the non-account of societal goals, values and lifestyles which are essential ingredients for social change. These factors stem from:

1. The thematic variety and the technical complexity of specific problems related to the environment, the economy, health and wellbeing. Indicators can illustrate this complexity. They can also simplify it, but to such an extent that they enable the application of reductionist approaches – based only on quantification – that can create other unforeseen problems.

2. The lack of consensus between specialists. There are no shared conceptual frameworks, methodological approaches or precise instruments. For example, there is no consensus about indices or predictions of global warming, or the depletion of the ozone layer, or population growth. Moreover, there is no consensus about what instruments are most appropriate for defining, applying and monitoring urban policies. For example, urban indicators have rarely been applied in order to promote a more comprehensive understanding of the contextual conditions and problems in cities.

3. The lack of strategic visions and societal goals shared by politicians, professionals and the public about the definition and ordering of priorities. These visions and goals are not solely dependent on scientific knowledge but also on the point of view of citizens. Despite this, many professionals still share an unwillingness to democratize decision-making and facilitate collaboration with community groups.

Given the structural nature of these factors it is necessary to consider the appropriate means and measures for the redefinition and reorientation of current practices. This paper argues that conceptual and methodological shortcomings should be overcome before any kinds of interdisciplinary or intersectoral coordination and collaboration can be effectively implemented.

Dismantling institutional barriers: reforming uses of data

Professionals and policy-makers have had difficulty in measuring, describing and explaining constancy, change and disparities in housing, social and environmental conditions in cities. This may seem surprising given that they have commonly adopted rationalistic and quantifiable approaches. Part of their difficulty has been the lack of systematic data collection by urban administrations and institutions. In order to understand the complexity of cities, a dynamic data set is required covering a wide range of sectors across several administrative levels and geographical scales. The limitations of traditional approaches and systems for data collection should be recognized because they serve as an institutional barrier to the formulation, implementation and evaluation of integrated, cross-sectoral policies.

A recent OECD Project Group on Housing, Social Integration and Livable Environments in Cities found that a number of reforms for data collection were being applied in some OECD Member countries.[10] These reforms are designed to:

- Overcome the sectoral division of data;
- Develop compatibility between statistics referring to different geographical scales;
- Establish consistent time frames in order to account systematically for constancy and change across spatial scales and over time frames;
- Develop multidimensional accounts of components of cities;
- Promote "user friendly" systems that can be used in a range of fields.

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[10] The final report of this Project Group is titled "The Multi-Sectoral Approach to Urban Regeneration: Towards a New Strategy for Social Integration, Housing Affordability and Livable Environments" (Paris, OECD, in press). This section borrows directly from a chapter in it.

In principle, there is a broad consensus that three basic types of information ought to be obtained. These include:

· Quantitative and qualitative data at the scales of the nation, region, city and neighbourhood;
· Dynamic data intended to diagnose and monitor conditions at these scales over an extended time period;
· Surveys of the local populations' expectations, lifestyle, values and living conditions.

Given this wide range of information, there is an urgent need to develop and apply Coordinated Information Systems. Coordinated information management for urban policy markers stems from the fact that the collection and updating of data is an important resource for civic administrations, especially for those monitoring projects and making decisions. No single-focus information system can equal the potential of a Coordinated Information System to support integrated policies and programmes.

Despite the advantages of formulating and applying systematic approaches in this field, a recent report of an OECD Working Group on Urban Affairs found that only a few countries have adopted a common strategy for the definition and the application of this type of system.[11] In sum, further institutional barriers need to be dismantled before more innovative approaches can be implemented.

Understanding the compound nature of urban environments, health and poverty

At first sight, the coordinated use of data and information shows that health and economic growth appear to be complementary. Comparisons of national data show that countries with the highest incomes have the highest levels of life expectancy and health. Eight of the first ten countries ranked in terms of per capita income are also in the first ten countries ranked according to life expectancy: Canada, Finland, Germany, Japan, Norway, Sweden, Switzerland and the United States of America.[12] These countries also have extremely low infant mortality rates. National comparisons, however, are not sufficient for understanding the compound nature of urban problems, whereas specific information and statistics on urban neighbourhoods show that even within affluent countries social, economic and environmental inequalities exist both between and within cities. Furthermore, these inequalities have grown since 1980 in most member countries of the OECD.[13]

Although it has often been claimed that urban environmental degradation affects all urban citizens irrespective of their professional status, or income, there is evidence to the contrary. Cities and urban neighbourhoods that lack

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[11] Refer to OECD "Strategies for an Information Management Policy Based on Coordinated Information Systems". Draft report prepared by the Danish Ministry of Housing and Building, dated 9th December 1992.

[12] Refer to "Health and Economic Development" World Health Organization (November–December) 1992.

[13] Refer to the final report of the OECD Project Group on Housing, Social Integration and Livable Environments titled "The Multi-Sectoral Approach to Urban Regeneration: Towards a New Strategy for Social Integration, Housing Affordability and Livable Environments" (Paris, OECD, in press).

natural resources and public services and are at high risk from floods, land-slides, or air pollution stemming from industries and traffic, are commonly occupied by the poorest residents. Poverty is a compound index of deprivation including lack of income, employment, housing education and especially the lack of choice between options. From this perspective, poverty is a significant indicator of social malaise, economic hardship, environmental deprivation and morbidity and mortality. These negative dimensions should be addressed by an integrated approach to urban planning.

Given recent trends in urban and broader environmental conditions it is apparent that traditional sanitary engineering approaches are necessary yet incomplete. Unfortunately, however, many recent publications about environmental health apply sectoral perspectives to examine the biological and abiotic constituents of urban environments – for example, air pollution, contaminants in water, indoor climate and toxic wastes – while not explicitly addressing the social relations between people, especially inequalities between their housing and working conditions and access to all kinds of resources and community services. Consequently, the main aspects of the health–environment relationship are restricted to "how environmental factors affect health" and "how current environmental trends are changing the patterns of health risks".[14] Such vague formulations need to be redefined, in tandem with other approaches because socioeconomic inequalities militate against effective policy implementation. In essence, the poor not only face economic hardship but they bear the burden of negative environmental conditions, including poor access to affordable housing, health and community services.

Need for integrated health concepts and coordinated procedures

The measurement of health in many European countries has been dominated by two approaches. One focuses on the geographical clustering of measures of income, deprivation and poverty in relation to the lifestyle traits and health of individuals. The other approach focuses on the relationship between social status and health, not just in terms of the attributes of individuals but at a collective and sometimes a community level. Today there are numerous reports of the high correlation between poverty and ill health, life expectancy and mortality rates. These measures of illness, disease and death have highlighted health inequalities both within and between cities. However, they are not comprehensive indicators of health! A fundamental problem is that concepts of health can be formulated to promote wellbeing, but these concepts are difficult to operationalize without a clear understanding of the kinds of data required to achieve that task. For example, the health sector generally does not provide statistics, or other kinds of information, that relate housing or working conditions to health problems. To return to the case of urban transport, it is noteworthy that the health sector usually has no delegated responsibility to address the relationships between transportation and mortality, injury, illness or stress. It only has a defined role that addresses the consequences of transport,

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[14] Refer to M. Schaefer "Health, Environment and Development: Approaches to Drafting Country Level Strategies for Human Wellbeing under Agenda 21" (Geneva, World Health Organization, 1993, p. 6).

largely by providing medical services.[15] Nonetheless, health should not only be equated with access to medical services.

Bearing in mind this qualification, in recent years health statistics such as life expectancy, infant mortality and general mortality rates indicate a general improvement in those European countries that are members of the OECD. Concurrently, however, in several countries of central and eastern Europe, plus the independent states of the former USSR, there have been improvements only in some aspects and deterioration in others.[16] Given the heterogeneous and dynamic nature of urban populations and conditions, indicators could be used more effectively to highlight the specific, perhaps unique characteristics of urban neighbourhoods.

Overcoming partial economic concepts and methods

Cities have rarely been considered as a structural component of national economies with specific and unique spatial, economic and geo-political dimensions. Therefore, economic indicators have simply been transposed from national and regional statistics and applied at the urban level. Unfortunately, the specificity of urban economies has not been considered adequately. Economic analyses of housing, transport, employment and other characteristics of urbanism need to be reformulated and applied. They can be related to the benefits of healthy citizens, or the costs of ill health. There is now sufficient evidence to show that traditional sectoral issues such as housing affordability, transportation, or homelessness, are commonly considered only in terms of prices, availability and financing, whereas they could also be considered from a health and welfare perspective as well as broader environmental policies.

The redefinition of economic concepts such as *"the market"* and *"development"* are prerequisites before any shared commitment is agreed in order to change values and lifestyles that serve "the common good". In order to formulate and apply an integrated approach it is necessary to reconsider economics and economic policies as one subsystem of a complex anthropologic, rather than as an autonomous system. This paper challenges the viewpoint that "the market" is autonomous and self-regulated as if it is totally independent of professional politics, national government and the broader ecological context in which it is circumscribed. Macro and micro-economic policies have commonly been evaluated in terms of their direct effects on consumption, production and the accumulation of capital. Nonetheless, as these policies have indirect secondary effects, these should also be identified and monitored. Some of these indirect effects may have negative impacts, such as the depletion of natural resources, the degradation of environmental conditions and health hazards. These *externalities* are the result of imperfections of diverse urban markets, but recognition of market failures is not widespread. Studies of the economies of cities show that markets are incomplete. Therefore, economists who only examine the formal sector do not incorporate important information about the informal sector. For example, welfare support and medical care in cities include unpaid

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[15] Refer to G. Goldstein "Raising the profile of health in setting urban agendas". A paper for the Fifth Annual Public Health Forum "Health at the Crossroads: Transport Policy and Urban Health", 4–7th April 1995 at the London School of Hygiene and Tropical Medicine.

[16] Refer to World Health Organization "Concern for Europe's Tomorrow: Summary" (Copenhagen, WHO Regional Office for Europe, Regional Publications, European Series, No. 53, 1994).

self-help services offered by households, families and neighbours. The latter have been ignored by mainstream economics. When urban planning adopts the same partial approach and decision-making is based only on formalized services and quantifiable modes of exchange, it is not surprising that many assumptions and predictions are misguided. There is an urgent need for urban research that identifies and integrates the components of the informal sector in cities into policy decision-making.

A reorientation of policy decision-making can be achieved if there is a shared commitment to defining and promoting integrated economic, health and environmental values and goals. This commitment ought to be complemented by a range of academic/scientific, public/community and professional/political competences. This goal cannot be achieved until there is a consensus about conceptual definitions and a shared commitment to redefining the data and information required.

Challenging myths of quantification and normalization

One reason why human perceptions, goals and values have not been adequately addressed by urban policy decision-makers is that they are often considered too difficult to measure. This claim can be challenged. Although time frames for change and developments in new social values, relationships, services and products appear to emerge unforeseen, research shows that they often evolve over a number of years. This can be illustrated by ongoing changes in household structure and size during this century. These changes are related to numerous factors including higher divorce rates, more mothers working in the labour market, adolescents leaving home, postponed childbearing and lower birth rates. Today, households with male-female couples and two or three children form a minority of all households in member countries of the OECD. These changes show that relationships between people are increasingly akin to a serial. Households are becoming more multidimensional owing to an increasing blend of ages and genetic relationships. This trend has placed an unforeseen demand on cities, especially the housing stock which is required to be more flexible to provide appropriate accommodation for a growing variety of households. Unfortunately, most post-war housing and urban policies have produced residential neighbourhoods that are incompatible with current demands because they were meant for nuclear families. These families were considered to be the norm with a lifestyle based on average income, expenditure and mobility. This example shows that there is an urgent need for indicators of social change related to the components of cities that will enable policy makers to predict and plan for social change.

Promoting community action for change

Individual and community awareness, education and consciousness are prerequisites for a societal commitment to the redefinition of goals and values that ensure a more balanced use and a more equitable distribution of resources than hitherto. Without this commitment, based on a sound knowledge base and shared goals and values, recent requests for more public participation and enablement cannot reorientate policy formulation and implementation in meaningful ways. Public participation and empowerment alone are not panaceas for current urban and broader environmental problems, but they can serve as vehicles for identifying social change and reorienting current practices.

However, before individuals and community groups can effectively participate with scientists, professionals and politicians in policy formulation and implementation there are long-standing institutional and social barriers that need to be dismantled.[17] There are reasons to be optimistic that a coordinated approach to environmental education, communication and information transfer can associate "top down" and "bottom-up" approaches in complementary ways. Partnerships between national authorities, civic administrations, local business and community associations can lead to the application of more integrated approaches, as a growing number of cities have shown by their collaboration in the Healthy Cities Project, which has been coordinated by the World Health Organization since its inception in 1987.[18]

Delimiting technological solutions to ecological problems

Production and consumption processes are concentrated in and around cities. They lead to a number of intense pollutions which are related to the type and quantity of production processes, the kind and quality of fuel, the technology used and the degree of maintenance of installations. Today insufficient attention is being given to those ways and means of changing production processes as one alternative to the "end-of-line" treatment of emissions and solid wastes, especially those that have negative impacts on health and environmental conditions. Alone, taxes and fiscal incentives are inadequate remedial measures that highlight the potential for choice by individuals and institutions with financial resources in contrast to those without monetary capital. Moreover, the enactment of standards and regulations are incomplete approaches, especially when they are not complemented by public education, communication and policing.[19]

Innovative technology may help reduce the use of natural resources but it will not resolve the treatment of all toxic wastes and pollution.[20] The explicit link between energy consumption, technology and negative health and environmental outcomes should be acknowledged by urban policy makers. Then a strategy for energy production and consumption can be based on options that reduce dependency on the importation of energy and also minimize negative health and environmental impacts. In addition it can stabilize or reduce the consumption of non-renewable resources. New clean technologies should be promoted by economic incentives instead of treating negative environmental and health impacts only at the end of production and consumption processes. The replacement of current remedial practices by preventive measures can

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[17] Refer to R. Lawrence "Meeting the Challenge: Barriers to Integrated Cross-Sectoral Urban Policies". Paper presented at the OECD-Sweden Urban Environment Policy Seminar, 1–3 June 1994.

[18] Refer to World Health Organization, "WHO Healthy Cities Project: Review of the first five years, 1987–1992". Report EUR/ICP HSC 644 (Copenhagen, WHO Regional Office for Europe, n.d.)

[19] According to a recent Report of the Commission of the European Communities titled "Towards Sustainablity" (1992) in spite of the introduction of about 200 legislative acts during the last two decades concerning pollution of the atmosphere, soil and water, waste management, safeguards in relation to chemicals and biotechnology product standards, there has been a slow deterioration of the general state of the environment during the same period. Hence it is not unjustified to state that more coordinated strategies are needed.

[20] For example, those related to acid rain, the "green house effect", deforestation, the destruction of the ozone layer, desertification and the disposal of radioactive wastes.

also reduce the monetary cost of the "treatment" of emissions and solid wastes which have increased in recent decades. Although these innovations are important they should not obscure other kinds of human consequences that can have negative impacts on wellbeing; for example, social differentiation, spatial segmentation and economic exclusion between those that have access to and those that cannot afford the use of modern technologies (e.g. for education, employment, medical treatment and transportation). The accessibility to modern technologies can also be considered in terms of their use to define and control urban policy formulation without any involvement of the vast majority of citizens and community groups. In this respect they rarely promote social integration.

Conclusion

The main rationale for promoting integrated health, economic and environmental policies stems from the fact that their outcomes transcend all traditional geographical, temporal and political boundaries. Moreover, by the year 2000 about 80% of all Europeans and more than half of the world's population will live in cities and urban agglomerations. Hence intra and transnational collaboration is essential. This paper argues that this collaboration will only be effective if misconceptions about the environment, economy, health and other components of cities are recognized and corrected. Once these corrections have been disseminated, then it is necessary to define integrative concepts and methods, establish objectives and order priorities. Then policies can be defined, implemented and monitored in systematic ways. In order to achieve this goal, political commitment and long-term investments across international, national, regional and city levels are necessary to overcome uncoordinated sectoral approaches that can be counter-productive. Without coordination even so-called "scientific knowledge" is frequently qualified by statements such as "there are no clear-cut answers", or that "the different perspectives disagree publicly", or that "the problem is too complex". Hence, there are good reasons to advocate a new research agenda and directives for practice.

Today, there is an urgent need for comprehensive urban research that will identify and publish the specific characteristics of cities. This research will help overcome the transposition of concepts and methods from specific sectors to the urban level without accounting for the context dependent definition of urban conditions. Academics, professionals and community groups can help to clarify conceptual differences, develop complementary approaches and support systematic monitoring over diverse eco-geo-political scales and time periods. Nonetheless, this collaboration is not sufficient. Given that the issues at stake involve conflicts of values and goals (which are expressed by socioeconomic inequity, professional power and political control) ethical and political dimensions are also crucial. In principle, many contemporary environmental and economic problems in cities, including pollution, poverty and inequality, cannot be resolved simply by legislation, technical measures, economic growth, or intersectoral collaboration, until the conceptual misunderstandings and methodological shortcomings outlined in this paper have been corrected. Only then will it be more realistic to promote cities and urban lifestyles that are more ecologically sustainable, more socially equitable and less costly in social, health, monetary and environmental terms.

Appendix:
Definitions and Interpretations

The relations between individuals, groups and societies have been a subject common to the history of art, literature, philosophy, religion and the sciences throughout the ages. Humans have been persistently concerned by their historical and ongoing relationship to the world, or to particular components of it. Therefore, it is surprising that so little attention has been given to this longitudinal perspective by mainstream debate on environmental policies. This paper is not meant to elaborate on this history which has already been documented elsewhere.[21] These contributions show that interpretations of the relations between people and the environment stem from scientific, professional, religious and other perspectives that are used implicitly or explicitly to formulate and apply economic, political, technological approaches to daily affairs. Bearing in mind the relativity of contributions in this field, this section of the paper will present definitions and recurrent interpretations of the terms health, environment, economy, ecology and sustainable development.

Health and its Interpretation

Although **health** has been interpreted in several ways there is widespread agreement on what it means and how it can be achieved. According to the World Health Organization "health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity".[22] This interpretation is idealistic and it does not define what is meant by complete physical, social and mental wellbeing. Therefore, it does not provide directives for policy formulation. This interpretation could be enlarged by seeking positive goals for human health that are independent of disease.

From the mid-19th century common interpretations of health were largely based on approaches that regulated illness and controlled behaviour. Concern about the relationship between environment and health stems from interpretations of how microbes and chemical contaminants impact on human groups and individuals. For example, in the 19th century, the presence and frequency of cholera was linked to polluted supplies of drinking water. This interpretation of health underlines sanitary engineering approaches that have been applied since then. They are still common today in urban planning and public health strategies. Although illness stemming from poor sanitation is a cause for concern in many cities, this approach is too restrictive if it is not complemented by others that address specific urban pathologies, such as occupational accidents and mental illnesses.

Today, *environmental health* has two distinct meanings. The more common one used in government and public health refers to the relationship between people and all the factors in their physical and social environment. The second connotation of environmental health considers the condition of the natural

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[21] Refer to C. Glacken "Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the end of the 18th Century". (Berkeley, University of California Press, 1967).

[22] World Health Organization "Constitution". (Geneva, World Health Organization, 1946). Although the WHO Constitution has been modified several times in the intervening years, this definition of health has not changed.

constituents of the environment, such as air, water, soil and vegetation. The first interpretation explicitly concerns those factors that may affect health positively or negatively, whereas in the second this concern is either absent or implicit. The first interpretation was adopted by the European Charter on Environment and Health. This Charter was signed by 29 European countries and the Commission of the European Communities in 1989:

> *"Environmental health ... includes both the direct pathological effects of chemicals, radiation and some biological agents and the effects (often indirect) on health and wellbeing of the broad physical, psychological, social and aesthetic environment, which includes housing, urban development, land use and transport."[23]*

Today it is accepted that there is a relationship between the conditions of urban and rural environments and the health of the inhabitants. Nonetheless, it is not a simple matter to identify the ***nature*** of that relationship in precise cities without a long-term commitment to the systematic collection of data and other kinds of information. There are important conceptual and methodological questions concerning the pertinence of multicausal interpretations of illness and disease including the definition of economic and environmental factors.

What is environment?

The term ***environment*** is commonly interpreted as the aggregation of all the abiotic and biological components that surround an organism. This term has been studied by numerous scientists and professionals from very different perspectives and approaches. In general, it has been common for physical and biological scientists to examine inorganic and non-human organic organisms according to specific disciplinary and sectoral approaches – air, water, soil, flora and fauna – either at one point in time, or over an extended period. Those authors who adopt a general ecology perspective can be classed into this broad category. Nonetheless, the systemic and integrative framework inherent in this perspective is not common to all approaches. Furthermore, until recently, there were very few studies in this category that examined the impacts of human products and processes on the inorganic and biological constituents of the environment.

In comparison to the natural scientists, human or social scientists have commonly considered the interrelationships between spatial, cultural, societal and individual human factors and human activities, products and processes, either by studies in laboratory conditions, or in the settings in which they occur. In urban sociology for example, an *in situ* ecological approach was used by Park, McKenzie, Burgess and Wirth from the 1920s.[24] This group of sociologists, followed by many others, examined spatial, social and economic patterns and processes related to human activities of individuals and groups in cities and towns. Likewise both ecological anthropology and ecological geography show that human activities can be studied systematically in precise localities using approaches and methods specific to each of the parent disciplines. From these

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[23] Refer to World Health Organization "European Charter on Environment and Health" (Copenhagen, WHO Regional Office for Europe, 1990).

[24] Refer to R. Park, E. Burgess and R. McKenzie "The City" (Chicago, Chicago University Press, 1925).

perspectives, the term environment has usually been interpreted and applied according to academic traditions that only examine (and sometimes emphasize) the human constituents of settings in which activities occur, whereas both the inorganic and biological constituents (and sometimes the human-made components) of the environment are often considered as a neutral background, or ignored. Consequently, many studies do not identify the impacts – both the positive and the negative consequences – of human activities on these constituents or on human individuals and groups. Hence social relations, human health and wellbeing are not commonly studied. Therefore, it is not unreasonable to suggest that these kinds of contributions are not strictly speaking ecological anthropology, geography, psychology or sociology (as their nomenclature implies) but sets of restrictive interpretations that do not account for the complexity of their context.

Ecology and ecological interpretations

Ecology is a word *à la mode*. Although it has been used increasingly by natural and social scientists during this century, it has also acquired a political connotation in recent decades. Government officials and political activists in many member countries of the OECD have gradually adopted "the green movement" in the wake of numerous publications about environmental nuisances. This interpretation of ecology commonly advocates conservation and preservation policies of flora and fauna in specific localities, even though studies are rarely commissioned to establish whether such policies serve both short and long-term interests. Such policies can be misleading if they are not related to the cultural and political context of the environmental, economic and health dimensions of human societies.

The term **ecology** derives from the ancient Greek words oikos and logos, as shown in Fig. 3 and it means the science of the habitat. This term was used by Haeckel in 1873, then other biological scientists during the late 19th century, to refer to studies of the relationships between organisms – animals and plants – and their immediate environment. **General ecology** specifically refers to the interrelations between animals and plants and their immediate surroundings, whereas **human ecology** focuses on people (see below). **Ecosystem**, a term first used by Tansley in 1935, refers to a circumscribed environment, all of the organisms and inorganic constituents contained therein and the interrelations between them. From this perspective, the environment of any living species (such as communities of insects, or plants) is multidimensional and complex, quite the opposite connotation to that used by many social scientists who refer to "human environments" as if they were a neutral background. In order to comprehend this complexity, it is instructive to recall a distinction frequently made in the biological sciences between autecology and synecology. Whereas **autecology** examines one biological species, **synecology** analyses communities of biological species – animals and plants – in terms of the interrelations between them and the biotic and abiotic constituents of their environment. The relationships between organisms and their environment are examined with respect to at least three subsystems:

1. The organism or community of organisms;
2. The abiotic and biotic environment;

3. The sets of relationships between the organism(s) and the constituents of the environment, including the impact of the organism on these constituents.

Although biological analogies like those frequently used to interpret the activities of human individuals and groups are not acceptable without precise qualifications, reference to the natural sciences is made here to underline the fact that these approaches implicitly support a perspective that does not address the social relations between individuals and groups in the same locality, nor the relations between their health, socioeconomic and environmental status.

What is human ecology?

Human ecology is an holistic, integrated interpretation of those laws, processes, products and mediating factors that define and are mutually defined by natural and human ecosystems at all scales of the earth's surface and the biosphere.[25] It implies a systemic framework for the analysis and comprehension of three complex systems and the interrelations between their constituents using a temporal perspective. These three systems are:

1. A bio-logic, or the orders of biological organisms;
2. An eco-logic, or the orders of inorganic constituents (e.g. water, air, soil and sun);
3. An anthropo-logic, or the ordering of cultural, societal and individual human factors.

Given the systemic nature of these components, it is inappropriate to emphasize one set of constituents to the detriment of others. Moreover, it is erroneous to distinguish between the "physical" and the "social" constituents of environments. This definition implies that an integrated approach would examine specific situations in terms of the reciprocal relations between the three systems, both at one point in time and over an extended period.[26]

The preceding definition of human ecology can be applied to examine precise subjects, such as environmental conditions in cities, the demographic and socioeconomic profiles of urban populations and their health and wellbeing, bearing in mind the following principles.

First, the interrelations between humans and the constituents of their surroundings are manifested through a wide range of physiological, psychological, societal and cultural processes. These processes include sensations and perceptions (which animals also share) but also beliefs, doctrines, ideas and representations, which are uniquely human and non-observable. *The interrelations between people and their environment are not just spatial, nor observable, but also (and indeed significantly) cultural and metaphysical. Moreover, these interrelations are not absolute, nor static, but dialectical and they are subject to change during relatively short and longer periods of time.* To return to the subject of urban transport, when the motor car is considered in relation to its economic functions, its facility for movement and its symbolism of liberty, prestige, power and personal wealth, then it is not difficult to understand why it has been promoted as a means of urban transport, irrespective of its negative impacts.

[25] Refer to G. Young "Origins of Human Ecology" (Stroudsberg, Hutchinson Ross, 1983).

[26] Refer to C. Raffestin "Plaidoyer pour une écologie humaine", Archives Suisse d'Anthropologie Générale, Vol. 44, pp. 123–129.

Second, unlike other biological organisms, the sets of interrelations between human beings and their surroundings are characterized by both discursive and reflexive knowledge, including a recourse to symbols, particularly but not exclusively linguistic symbols. This characteristic is a distinguishing feature between anthropoid behaviour and human behaviour. It has important implications with respect to the human interpretation of landscapes and the biosphere.

Third, the "human environment" can be distinguished from the "environment" of other biological organisms by its instrumental nature. Human products and processes transform the constituents of the environment in order to respond to prescribed aspirations, needs and goals that are defined both by individuals and human groups. Furthermore, it is necessary to distinguish between the environment that is perceived and used by people and both the micro and macro-environments which human senses do not interpret without the aid of technological instruments. Although boundaries do not separate the environments at these different scales they do have different kinds of impacts on human activities, health and wellbeing.

Economy and economic interpretations

In ancient Greece, the primary meaning of *economy* was the management of a household or the habitat, as shown in Fig. 3. In western civilizations, since the 17th century, this term has been increasingly used in a wider sense to refer to the administration of the concerns and the resources of any human group with the aim of productiveness and optimal efficiency. Since the 18th century, the term *economics* has commonly referred to a discipline and profession that is concerned with the development, distribution and consumption and the regulation of the material resources of a community or a nation. A shortcoming of economics is that it commonly assumes that other constituents of societies (e.g. environmental, political and legal components) are constant. Hence they do not modify the economy over time. This reductionist stance has oversimplified the interrelations between economics and environmental resources. It underlies the interpretation of finite resources in order to make precise monetary calculations. Simultaneously, this interpretation also assumes that the earth can infinitely supply these resources, some of which are used as free, exploitable goods.

Nonetheless, economics explicitly involves environmental issues. Diverse habitats define ecological limits that circumscribe the resident populations:

Fig. 3. The shared linguistic roots of ecology and economy have been largely ignored until recently and this has inhibited the formulation and application of integrated approaches.

Ecology	Economics
(oikos + logos)	(oikos + nomos)
Science of habitat	Management of habitat
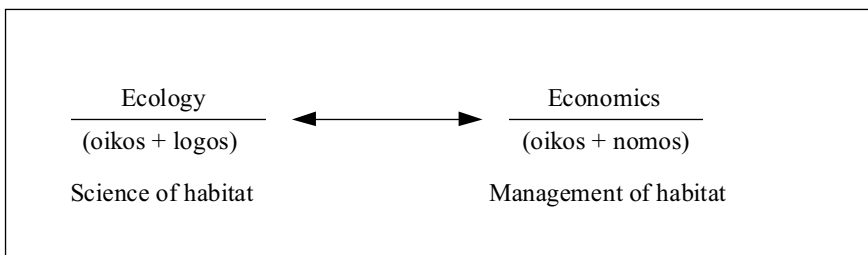
whether these limits are interpreted in relation to food production, water consumption, the use of resources (and so on) is intimately related to the cultural predispositions of these populations. In principle, the relationship between available means and human societies is mediated by information, knowledge and values (including religious doctrine and myths) that are used implicitly or explicitly to invent and use resources, create tools, harness energy and develop skills. Whatever theoretical perspective is used to explore human economies, one must acknowledge that decisions involve choices, customs, conflicts, negotiations and compromises. The cultivation of land, or the construction of a city, for example, explicitly involves the allocation of available means (including the use, modification and reuse of material goods) and the investment of human labour and time.

Economics is as old as human civilizations. The economy of specific societies has undergone significant changes over the course of history. This is not a simple, linear developmental process.[27] Two main approaches are commonly used to change the level of economic productivity of human groups. The first is by the ***intensification*** of production which aims at high yields even if they are costly in terms of the use of natural resources, labour input and capital outlay. For example, uses of fertilisers and insecticides are meant to increase the yield of crops in the short-term, even when negative impacts on the local ecosystem over the long-term are increasingly known and documented. The second is by ***mechanization*** which aims at increasing productivity irrespective of the amount of energy required to replace human input by the toil of animals and the power of machines. This has been common in agriculture and urban development. In essence, the history of economic productivity in all member countries of the OECD has been strongly influenced by these trends and the ***specialization*** of many activities and tasks without full consideration of their consequences on the environment, health and urban planning.

The interrelations between economics and the environment have a long yet chequered history that can be traced back to the Physiocrats in the 18th century. Following the doctrine of Quesnay, the Physiocrats held that the inherent order governing human economies was based on land and its natural products. During the 18th and 19th centuries other economists including Malthus, J.S. Mill, Smith and Ricardo were concerned, in one way or another, by the limits to economic growth that were imposed by the environment. This concern was reformulated by neo-classical economists during the last two centuries in terms of the capacity of the environment to supply exploitable resources and accumulate waste products in order to sustain economic growth.

In 1965, the McGraw-Hill Dictionary of Modern Economics defined sustainable growth as a rise in per capita real income, or per capita real gross national product, that is capable of continuing for a long time. A corollary condition of sustainable economic growth is that economic stagnation will not occur, but there is no account of the environment or health.

Until 1973, an increase in the consumption of energy was commonly regarded as an essential requirement for the growth of national economies. Consequently, the production of goods and services within and beyond cities was (and still is) heavily dependent on the availability of energy. As energy is usually produced

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[27] Refer to S. Boyden "Western Civilization in Biological Perspective: Patterns in Biohistory" (Oxford, Oxford University Press, 1987).

outside the geopolitical boundary of cities, urban processes and products are largely dependent rather than being self-sufficient. The stabilization of, or the slow-down in energy consumption in some member countries of the OECD since the 1970s is partly due to a growing recognition that energy intensive economic productivity is vulnerable. In addition, however, this trend has been one consequence of the expansion of technology intensive industries, especially in the tertiary sector at the expense of agricultural production and secondary industries. Given the growing diffusion and globalization of markets, agricultural and industrial products are transported longer distances around the world to an extent hitherto unknown.

Some economic interpretations of sustainable development maintain that the depletion of environmental resources in the pursuit of economic growth is akin to living off capital rather than income. The management of two types of capital – natural resources and manufactured goods – is a common subject in the economic debate on sustainable development.[28] However, this interpretation ignores possible distinctions between other categories of natural and manufactured things which are dependent on human culture. Hence they may vary between cultures and within societies as well as over time. There may be distinctions between renewable and non-renewable, recyclable and non-recyclable, finite and infinite as well as material and non-material resources. The latter include constituents of culture such as information and knowledge which can be used implicitly and explicitly to regulate the allocation of all kinds of resources and human products.

It is important to underline that when such conceptual distinctions are not made (as, for example, by neo-classical economists) a *high degree of substitution* between different types of capital goods and resources is envisaged, or taken for granted. This interpretation is crucial in understanding *why* many contemporary economists maintain that manufactured goods, technology and expertise are substitutes for depleting natural resources, or degraded environmental conditions. Consequently, *the capacity of the environment to sustain economic growth is a non-issue.* In other terms, continued economic growth depends on the degree of substitution between resource inputs from which economic output results. Apparently, there is unlimited potential for substitution!

According to the conceptual framework and principles presented earlier in this paper, this recurrent economic interpretation should be refuted. Nonetheless, it underlines policy decision-making in many spheres, including those which calculate **externalities** solely in terms of monetary value, including taxes to compensate for the degradation of specific localities. The externality principle has been proposed to account for the indirect pricing of natural resources, the transformation of materials and flows of energy. Externalities can account for both the direct and indirect effects of production and consumption processes not included in the market price of goods and services provided that they are quantifiable. This economic interpretation enables traditional accounts of production and consumption to encompass ecological costs and benefits that are borne either internally or externally. Nonetheless, the application of the principle of externality to serve as an explicit regulator of economic activity

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[28] Refer to J. Pezzy "Sustainablity: An Interdisciplinary Guide" Journal of Environmental Values, Vol. 1; pp.321–362.

(for example, the polluter-pays-principle) is limited in as much as it is explicitly tied to economic affordability rather than market efficiency, social consensus or ecological sustenance. Moreover, it is noteworthy that these approaches commonly do not identify or measure other kinds of negative outcomes, especially those that effect the health and wellbeing of individuals and communities. Last, but not least, the principle of externality does not include human knowledge, communication and information, because these constituents of human culture cannot be measured by flows of energy and matter.

Sustainable development

The well known definition of sustainable development in the Report of the World Commission on Environment and Development has been included earlier in this paper. The Report also states that the main characteristics of sustainable development are the maintenance of access to natural resources, the avoidance of permanent environmental damage and the maintenance of the overall quality of life. In other terms, the status quo should be ensured without further environmental degradation.

According to a recent publication of the Commission of European Communities, the word sustainable "is intended to reflect a policy and strategy for continued economic and social development without detriment to the environment and the natural resources on the quality of which continued human activity and further development depend".[29] This document also states three practical measures that help achieve sustainable development. These are optimum reuse and recycling thereby avoiding wastage and preventing depletion of the natural resource stock; the rationalization of the production and consumption of energy and changes to the consumption and behaviour patterns of society. This interpretation is a dual sectoral one that considers environmental and economic components of human ecosystems at the expense of others. Therefore, it is not surprising that this document states that "transport, energy, industry and in some cases tourism are the key sectoral activities which impact on the quality of the urban environment and which also stand to gain significantly from more rational planning and sustainable development of urban areas" (p. 51) It is noteworthy that there is no mention of the number, type or condition of the building stock, services and infrastructure; or of the availability and affordability of housing that is not harmful to health; or the provision of and access to health, medical and community welfare services; or of the incidence of urban pathologies, such as social and spatial deprivation and exclusion which can lead to delinquency, vandalism, fear of crime, riots and warfare.

There is not much point in continuing this overview of definitions and interpretations of sustainable development. It is sufficient to note, despite counterclaims, that too many recent interpretations are founded on sectoral concepts and approaches that hinder the definition and the application of integrated perspectives for urban planning. Often these sectoral concepts and methods are simply applied at the urban level without sufficient consideration of the specificity of cities. Therefore, this paper requests and suggests a redefinition of current practice.

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[29] Refer to Commission of the European Communities "Towards Sustainability": A European Community Programme of Policy and Action in relation to the Environment and Sustainable Development, Vol. II (Brussels, Commission of the European Communities, 27 March 1992) p. 3.

Keynote

Planning and Creating Healthy and Sustainable Cities:
The challenge for the 21st century

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Abstract

The overwhelming challenge we face in the 21st century – the dawn of the urban millennium – will be how to maintain and improve the health, well-being and quality of life of the earth's increasingly urban population – and especially for its most disadvantaged members – while ensuring indefinite sustainability and ecosystem health. We must ensure that future generations have at least an equal opportunity to have as high a quality of life and to achieve their maximum potential as do we.

    This paper begins with a discussion of the meaning of sustainability, expanding the concept to include social sustainability and shifting the focus from economic development to human development. A model is presented linking together the themes of community, environment and economy to address the challenge of creating equitable, sustainable and livable cities. The policy implications of this holistic approach are explored, including a brief discussion of potential conflicts. The paper concludes with examples from Canada of ways in which communities – and particularly planners – are working to address the challenge of creating healthy and sustainable cities and communities and some of the implications for the structure and function of government.

The term "sustainable development" was first coined in 1980 in a report by the International Union for the Conservation of Nature on the need for a world conservation strategy (IUCN, 1980), which called for a strategy for "the sustainable utilization of species and ecosystems". But of course, what brought the concept of sustainable development to the forefront of the public agenda was the Report of the World Commission on Environment and Development, "Our Common Future", more commonly known as the Brundtland Report (WCED,1897). In that report, sustainable development was defined as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

    The whole premise of the Brundtland Report was that in order for the human needs of the global population to be met – and especially those four-fifths of the world living in relative or absolute poverty – we require economic development. However, in order not to impair the health of the ecosystems of which we are a part and on which we depend for our own health and to ensure the

continued availability of resources, the required economic development must be environmentally sustainable.

Although the report was greatly concerned with matters of human development and wellbeing, there was not much explicit reference to health. However, in her presentation to the World Health Assembly in 1988, Gro Harlem Brundtland observed that "ultimately, the whole report is about health". Others have been more explicit in recognizing that it is not simply the natural environment and natural resources that have to be sustained, but that social resources and the social environment likewise have to be sustained – what we might call social sustainability (Osberg, 1990).

With this in mind, the Canadian Public Health Association, in its report on the Health Implications of the Ecological Crisis (CPHA, 1991) suggested a new definition of sustainability based on a human and ecosystem perspective:

> *"human development and the achievement of human potential require a form of economic activity that is socially and environmentally sustainable in this and future generations".*

A key point here is to recognize that the focus has shifted from economic development to human development, that economic activity is merely a means to that end (and not the end in itself) and that if economic activity is to assist in the achievement of human development, it must be indefinitely environmentally **and** socially sustainable. In other words, not only must economic activity not deplete non-renewable resources, harvest renewable resources at an unsustainable rate, pollute the environment beyond the capacity of the environment to cope with that pollution or irreparably disrupt ecosystem health and stability (the ecological web of life); the economic activity must also not deplete "social capital", irreparably harm individuals and communities through exploitation and disempowerment, or so disrupt the social web of life that holds communities together that they disintegrate.

As we approach the dawn of the urban millenium – the point at which we become truly an urban species, with more than half of all humans living in urban environments – it is vital that our cities and towns come to reflect this concern with human development that is environmentally and socially sustainable in their design and operation. In the sections that follow, a model that embodies these values will be presented, together with examples from the recent Canadian experience that suggests that we are slowly beginning to move in the right direction.

A conceptual model and planning tool

The relationship between health/social wellbeing, environmental quality/ecosystem health and economic activity has been assuming growing importance in recent years.[1] In my own work, based on a 1989 conference organized at York University in Toronto, I have been developing a conceptual model that links community, environment and economy in the context of health/wellbeing/quality

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[1] For example, the Canadian province of Ontario has been working to develop strategic goals for the province that integrate social wellbeing, environmental quality and economic vitality.

of life/human development (Hancock, 1993). This model (Fig. 1) has the potential to be a useful tool both for policy and assessment purposes.

At the centre of the model we find "health", although these days I prefer to think of this as human development. The model suggests that we need to balance and integrate community conviviality, environmental viability and economic prosperity.

- Community conviviality is concerned with the web of social relations (the social equivalent of the ecological concept of the web of life) and embraces such concepts as social cohesion, or what Putnam (1993), in his book *Making Democracy Work* refers to as "the civic community" and "social solidarity".
- Environmental quality refers to the quality of local ecosystems, including air, water, soil and the food chain.
- Economic adequacy refers to having a sufficient level of economic activity to ensure that basic needs for all are met; it is based in part on the recognition that above five thousand dollars per capita of gross domestic product, there is little relationship between life expectancy (as a proxy measure of overall health status) and economic development (Wilkinson, 1994).

Fig. 1. A Conceptual Model and Planning Tool
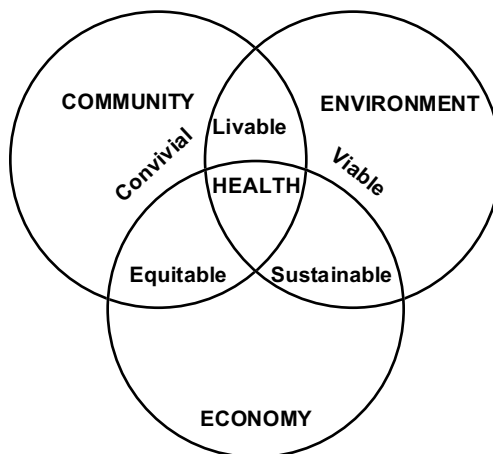
The model also indicates that, in order to ensure social cohesion and a civic community, the benefits of economic activity must be distributed in a way that is **socially equitable**: if it is not then, as Raymond Aron has remarked, "when inequality becomes too great, the idea of community becomes impossible". In addition to being socially equitable, economic activity must also be indefinitely **ecologically sustainable**; the community must not so deplete natural resources or so pollute the environment and otherwise impair ecosystem health as to irreparably harm future generations or distant populations. Finally, the community requires a **livable built environment**; this refers to the quality and nature of the built environment, including housing, roads and other transportation systems, other urban infrastructure and urban design and land use.

In the following sections, I will explore some of the implications of this model for policy, including monitoring and evaluation. However, for the moment, suffice it to say that a healthy community would be one that strove to be livable, sustainable, equitable, cohesive, have high environmental quality and be adequately prosperous – and would seek to balance these sometimes competing values. There is, however, one important caveat, somewhat implicit in the concept of sustainability but worth elaborating upon.

In our original background paper for the WHO Healthy Cities Project (Hancock and Duhl, 1986) we proposed a set of elements that would constitute a healthy city. One of those elements was a strong **but non-exploitative** community. This wording expressed our concern that strong communities, although often beneficial from the point of view of the individuals living within that community, can be quite harmful to those living outside the community. Thus we suggested that a healthy community, while being strong, would not exploit the weaker and more disadvantaged members within the community, would not exploit other communities to its advantage and their disadvantage, would not exploit the ecosystem beyond its capacity to absorb that exploitation without permanent harm and would not exploit future generations by destroying their options, as the WCED definition of sustainability suggests. Thus a healthy and sustainable community, while striving to meet the six qualities described in Fig. 1 and thus to maximize the human development of its members, will not do so through the undue exploitation of others. There is, in other words, a strong moral component to being a healthy and sustainable community.

Sustainable development, health and poverty in cities

The links between sustainable development, poverty and health are complex, but real. In this section, I will explore some of those links.

At the outset, it is important to recognize that those living in relative or absolute poverty will likely have less impact on the environment than those whose wealth allows them to consume the greater share of the earth's resources: rich countries are less ecologically sustainable, in these terms, than poor countries, while rich individuals are less ecologically sustainable than poor individuals.[2] Moreover, there is the very real danger that rich countries – and rich individuals – will 'buy' themselves out of trouble by importing resources needed for subsistence in the poorer countries and communities, while exporting pollution to them; indeed, there is already clear evidence that this is already happening.

At the same time, while consuming fewer of the earth's resources, those living in poverty are more likely to be receiving more than their fair share of environmental harm. Not only do they often live downhill, downwind, or downstream of pollution, or in situations that are fundamentally unsafe (i.e. in flood zones, on dangerous hillsides, on or near waste dumps etc.), they often work in

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[2] For example, Wackernagel et al (1993) have calculated the "ecological footprint" in hectares per capita of various Canadian households: 3.1 hectares for a single parent with child and a household expenditure of $16 000; 4.8 hectares for an average family of 2.72 people and expenditure of $37 000; 13.5 hectares for a childless professional couple and expenditure of $79 000.

the more dangerous occupations, where they are more likely to be exposed to toxic chemicals and other hazards and they often have to pay more than middle class families for worse quality and more highly processed food.

On the other hand, people living at the very margins of survival are often forced, through necessity, to destroy the environment upon which they depend – witness desertification in the Sahel or deforestation in Haiti. A similar situation exists among low income communities in cities in the industrialized world: people living in poverty often drive old and poorly maintained cars that consume a lot of gasoline and pollute the environment and they also may live in poorly built and poorly insulated housing which they may have little opportunity or incentive to improve, resulting in high heating bills and more pollution.

One vivid illustration of the health and social effects of environmentally unsustainable development can be seen in the health effects of global climate change, which were the topic of a WHO report in 1990. Changes in global climate patterns will have some direct effects due to higher temperatures, particularly in large cities in hot countries. But much more devastating will be the indirect effects such as the spread into more temperate regions of a wide range of insects that are vectors for a number of serious diseases; changes to food production capacity in many parts of the world and the flooding of low-lying areas such as Bangladesh, the Nile Delta, Florida and the Netherlands. Cities that are not directly affected by these changes will be impacted by the result-ant mass migrations and the creation of large numbers of 'eco-refugees'. As always, it will be the poorest members of society who will suffer most.

The relationship between poverty and health is not only a matter of eco-logical sustainability, it relates to the theme of social sustainability as well. While there is no evidence of a relationship at the national level between per capita GDP and life expectancy above five thousand dollars GDP per capita, there are two key pieces of evidence that relate health to equity. The first is that nations with greater degrees of equity have longer life expectancy and better health (Rogers, 1986; Cereseto and Waitzkin, 1986; Wilkinson, 1994). The second is that there is clear evidence within populations of a gradient of health status from poor to rich. Moreover, that gradient is not simply due to income and material wealth, since it applies at even the highest levels within a society, where material needs are more than adequately met. It seems that the gradient in health status within populations is more associated with issues of social status than income per se (Marmot, 1994).

It has already been suggested that "when inequality becomes too great, the idea of community becomes impossible". This seems to me to be precisely the situation in many American communities today; not only does the inequity within the United States reflect itself in lower overall population health sta-tus and life expectancy in comparison with most of the rest of the OECD na-tions, the inequity within cities in the United States has reached such a point that there is no sense of community. The horizontal linkages and the sense of social solidarity that make for Putnam's "civic community" no longer exist. The social web breaks down, social cohesion is lost and those who are socially ex-cluded react with violence and despair. Here is a situation where economic activity is not only ecologically unsustainable, it is clearly socially unsustainable. The impacts on population health status and particularly the health status of the poorest, are only too obvious. Inner city ghettos in the United States have infant mortality rates worse than that of many third world countries and levels

of violence that are beyond belief. Violence has become a major public health problem and a major cause of death, particularly among young black males.

While things have not yet reached that pitch in European and Canadian cities, the seeds of that potential are there too; we need to play close attention to the lessons to be learned from the American experience, one of which is that – as the famed American jurist Oliver Wendell Holmes put it over a hundred years ago – taxes are the price we pay for a civilized society.

Some implications of the model

An important aspect of the model that I have advanced here is that the various aspects that make up what I would describe as a healthy and sustainable community that promotes human development are sometimes in conflict with each other – although for the most part they are mutually reinforcing. Conflict is particularly likely around the aspects of economic adequacy, sustainability and equity. Much of that conflict arises at present because economic activity is too often seen as paramount, rather than merely a means to an end. Thus in the interests of economic growth, equity, sustainability, social cohesiveness, livability and environmental quality have too often been sacrificed. Perhaps the adoption of a model such as the one proposed here will enable us, in time, to see economic activity for what it is: merely one of a number of policy objectives and not necessarily the most important one.

However, many of the other policy criteria – for that is what they are[3] – are mutually supporting.

Greater equity contributes to community conviviality and social cohesiveness, while environmental quality and ecological sustainability are obviously closely related. Moreover, the quality and livability of the environment have important implications for the sense of social solidarity and the creation of a civic community. As our experience with slum clearance and the creation of highrise apartments (vertical slums) in many cities in Europe and North America has proven, bad urban design, poor environmental quality and a generally unlivable environment contribute to the breakdown of community. Conversely, we have also learned how to design and build communities that promote social networking and create a sense of community – even if we have too seldom applied that knowledge. (The "Community Architecture" movement in Britain is based on notions of community livability and social solidarity – Wates and Knevitt, 1987)

But perhaps the most fundamental implication of the model I propose is that we can no longer afford the luxury of planning in isolation. Environmental, social, economic, health and land use planning have to be integrated; we have to develop an holistic approach to planning "whole communities". Yet as Alexander, et al., have noted:

> *"This quality of wholeness does not exist in towns being built today – and indeed this quality **could not** exist at present because there isn't any discipline which actively sets out to create it."* (Alexander et al., 1987)

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[3] I have worked with a couple of communities in Canada to apply the six qualities in Figure 1 as criteria for judging policy. For instance, we have asked 'what would a transportation policy be like if it had to support conviviality, equity, economic vitality, ecological sustainability, environmental quality and livability?' and we have come up with some interesting answers.

And they go on to suggest that the task of creating wholeness in a city can only be dealt with as a **process** and not by design alone. This of course has profound implications both for the training of planners and for the governance of cities. The issue with respect to the training of planners is quite straight forward: we need to train planners and others who can think and work across traditional disciplinary boundaries, specialists in holistic thinking and working. The implications for the government and governance of our cities will be described at the end of this paper.

While it would be premature to suggest that we have yet developed an holistic approach to planning, in the following section I will describe some of the emerging examples in the planning field in Canada that are taking us in the directions outlined above.

From concept to practice

The need to integrate the concepts of healthy and sustainable cities/communities has been apparent for some time. In this section, I will describe some examples of the ways in which Canadians have been moving from concept to practice. There are three main areas I will describe: linking directly the concepts of health and sustainability, involving the planning profession and changing planning practice.

a. Linking "healthy" and "sustainable"

A number of efforts are underway to link the concepts of healthy community and sustainable community in practical terms. One of these is the University of British Columbia Task Force on Healthy and Sustainable Communities (University of British Columbia Task Force, 1994). This task force, which brings together members of a number of different faculties and departments (Community and Regional Planning, Family Practice, Health Promotion, Health Care and Epidemiology, Nursing, Social Work) has been working to develop two tools for sustainability and to apply these tools in collaboration with the City of Richmond, "an island community of approximately 130 thousand people in the Fraser River Delta which is part of the conurbation around Vancouver, B.C.". (They are working with management and staff of the planning, health, engineering and community and government relations departments.)

The two tools they have been developing are an index of 'ecological carrying capacity' and an index of 'social caring capacity'. The index of ecological carrying capacity measures the "appropriated carrying capacity" or "ecological footprint" of communities (or, for that matter, individuals). In simple terms, the ECC measures the surface area needed to meet needs such as housing, food, transportation, consumer goods and other resources and to dispose of wastes. (The average Canadian requires 4.8 hectares per capita simply in terms of energy, forest, agricultural land and built environment, to sustain them each year. As their report notes "this is far more than the per capita land available in the world if every human would consume at this rate – and wealthier families consume even more, see Footnote 2)

In addition to developing this tool, the task force has also been developing a tool called the social caring capacity, the purpose of which is to test the readiness and willingness of the community to address and deal with the problems revealed by the appropriated carrying capacity. While still at a preliminary

stage, the criteria that appear to be important for assessing the social caring capacity include social equity, diversity, interconnection, safety, access to recreational and open space, minimization of household and familial stressors and inclusion in the decision-making process. The combination of appropriated carrying capacity and social caring capacity, it is believed, will allow the community to see both the collective impact of its actions and therefore the collective imperative to change and "to ensure that such developments are seen to be equitable and desirable".

What makes this of more than academic interest is that the City of Richmond is now attempting to take these concepts and apply them in the development of planning guidelines and in the process of decision-making on planning applications.

Another example of the way in which the concepts of healthy and sustainable communities are being linked was a conference organized in Ontario in the spring of 1994. The conference brought together several different "movements" operating at the community level – healthy communities, green communities, community economic development, social development and planning, local roundtables on environment and economy – to explore areas of common interest and concern and to identify potential areas of collaborative action. The conference, which was called "Building Healthy and Sustainable Communities Together", served to underline the common areas of interest and the shared sense of purpose among these different networks and to highlight both the importance and the potential of working together at the local level. The conference also identified some significant barriers to achieving that, including in particular the jurisdictional boundaries established by provincial and municipal governments and the difficulties raised at the community level when funding programs are so narrowly defined and communities have to go to multiple sources for what is in essence a common purpose.

One final example of the linking of the concepts that we are discussing is the work of the Healthy City Office in Toronto. Established in 1989, the Healthy City Office occupies an unique niche in the civic structure. Directed by a steering committee with representatives from a number of different departments as well as community members, the Office exists outside any of the existing departments; it reports as a corporate office to the committee of heads of City Departments. This gives it a city-wide mandate to pursue its three principal themes, namely equity, economy and environment. Thus it sees its task as one of working across City Departments and with the community to link these three themes in the quest for a healthier city.

One example of the way in which it does this is to present an annual series of awards (called "The Neighbourlies"), to community organizations that have shown leadership and initiative in the three areas that are the Office's mandate, namely environment, equity and economy. Thus the Office promotes both intersectoral action and action that integrates the themes which are central to our concern here today.

b. Involving the planning profession

From the outset, the Canadian Healthy Communities Project was founded on the assumption that the planning profession was a key player. Historically, there are close ties between the planning profession and public health; in fact

in Canada the planning profession grew out of a concern for public health and conservation of the environment in the early part of the 20th century (Oberlander, 1985). Therefore, the Canadian Institute of Planners was approached and became not only one of three sponsoring organizations (the other two were the Federation of Canadian Municipalities and the Canadian Public Health Association), but became the base for the Canadian Healthy Communities Project; in addition, the steering committee was – and still is – chaired by the president or past president of the Institute. This resulted in the project being well known to planners and resulted in, at the very least, a lively debate in the planning literature (*Plan Canada*, 1989).

At the same time, the Canadian Institute of Planners and the Canadian planning profession became involved in the concept of sustainable development and sustainable planning. Not surprisingly, the two concepts were brought together. A 1990 report, "Reflections on Sustainable Planning", (CIP, 1990) concluded that "the concept of sustainability is essential to our survival and should be viewed as the intent and central operating principle of planning." The report also noted that "implementation should demonstrate full regard for issues of social equity" and that:

> *"sustainable development, as a set of principles driving policy, is usefully complemented by the Healthy Community concept, in which local issues are defined and acted upon by the community itself".*

The CIP report recognized that sustainable development has social and cultural dimensions, has implications that go well beyond local impact, that we have to learn to live better together and that the Healthy Community Project had already generated important lessons for sustainable planning, including the importance of local support, action and ownership, the key role played by municipal government and municipal planners and the potential for planners to play a proactive role. The relationship between healthy communities and sustainable development was summed up in the accompanying figure (Fig. 2).

This recognition of the complementarity between healthy communities and sustainable development on the part of the planning profession in Canada is important not only because it legitimates the link between the two concepts but because it sees this as of fundamental importance to planners and legitimates their role in addressing these issues in their communities. As one planner put it recently, the healthy community approach provides four important functions for a planner: it provides a sense of purpose that puts the person back into the picture, an intellectual tool and a package in which to fit diverse elements, an organizational tool that can structure teams of planners and the centrality of grass roots participation, which enlivens the planning process (Bain, 1994).

A more recent evolution of the link between healthy and sustainable communities can be found in a report reviewing alternative planning approaches in Canada (Hygeia Consulting Services and REIC Ltd, 1994). The report, which was commissioned by the Canada Mortgage and Housing Corporation (a Federal government agency concerned with housing and urban development) reviewed four recent alternative planning approaches – pedestrian pockets, neo-traditional design, eco-villages and co-housing. In examining the alternative approaches and in evaluating a set of eight case studies, the report's authors

*Fig. 2. Healthy Communities and Sustainable Development:
two paths to one goal*
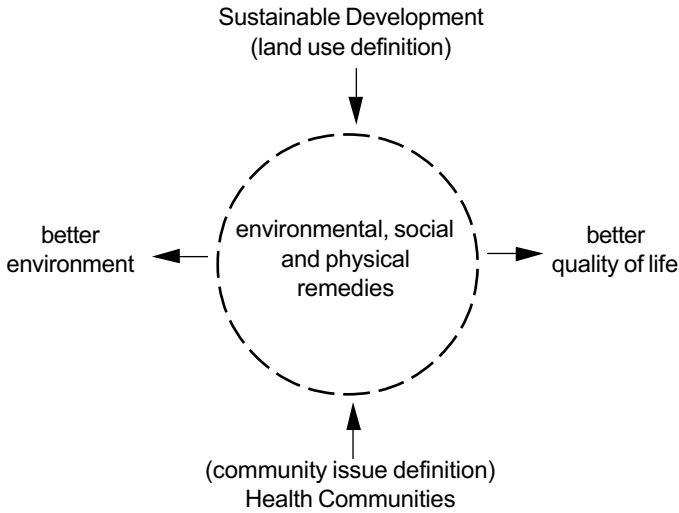
used a framework based on the healthy and sustainable community model out-
lined earlier (fig. 1). The report develops and proposes an evaluative frame-
work for judging urban plans that includes resource conservation, environmental
impact, economic viability, social equity, livability, community and health and
safety. Thus the groundwork has been laid for planners to apply a much more
comprehensive planning framework in the years to come. Indeed, as described
in the next section, this is already beginning to happen.

c. Changing planning practice

Slowly but surely, planning practice in Canada is shifting to reflect this new
awareness. I will briefly describe here several examples of ways in which plan-
ning practice is changing, beginning with plans for several new towns,[4] and
moving on to discuss ways in which a number of different communities have
incorporated these ideas in their official plans.

New towns

Bamberton is a proposed new community of roughly 12 thousand people north
of the city of Victoria on Vancouver Island in British Columbia. The community's
design is based on ecologically sustainable development but includes an impor-
tant emphasis on a sense of community, face to face interaction and services
within walking distance. Guiding the development is a set of principles, the
"Bamberton Code" (see box) which establishes the values that underlie the whole
project. Based on this code and an extensive community consultation, the
developers have created over three hundred design principles which are

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[4] The descriptions of Bamberton, Heart of Springdale and Cornell are drawn from Hygeia
Consulting Services and REIC Ltd, 1994.

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│                        THE BAMBERTON CODE                             │
│                                                                       │
│  Bamberton represents:                                                │
│  •   a way of living which seeks to serve the needs of our own        │
│      generation and generations to come.                              │
│  •   a new possibility for the way people coexist with nature,        │
│      upholding the ideal of responsible stewardship and seeking       │
│      to be ecologically sustainable in the use of natural resources   │
│      such as water, soil, habitat, energy and raw materials.          │
│  •   a rediscovery of traditional virtues of community, being         │
│      conducive to social interaction, care and mutual support,        │
│      encouraging of responsibility in the pursuit of shared goals     │
│      and supportive of cultural and artistic richness.                │
│  •   a new possibility for the building of a self reliant, local      │
│      community economy, emphasizing enterprise and initiative;        │
│      the contribution of labour; mutual economic support;             │
│      innovation, research and development; personal, social and       │
│      global responsibility and long term ecological sustainability.   │
│  •   a positive opportunity for all to call Bamberton home, being     │
│      encouraging of creativity, learning and growth and nurturing     │
│      of a deep appreciation of the gift of life.                      │
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organized into ninety issues in eleven categories. The categories include community planning, character and culture, social planning, the economy, the environment, transportation and travel, town site, housing, utilities and amenities, visual impact and leisure and tourism. Taken together, these values and principles provide a detailed blueprint covering everything from governance to pest control. Some of the characteristics of the proposed development include:

· leaving 50% of the site as green space while requiring that 25% of each private lot be planted with native species;
· a land and soil management plan which will prohibit the stripping or contamination of topsoil and will limit turf grass lawns;
· use of local surface water sources, water conservation measures to reduce water consumption by 50% compared to a comparable development and the use of treated waste water to irrigate golf courses and other public spaces;
· a serious attempt to reduce the environmental impact of construction materials, recycling materials from existing buildings and reducing solid waste;
· energy efficient building designs;
· an independent Bamberton business network has already been established, consisting of potential and future residence and business people who have expressed an interest in relocating to and/or starting new businesses in Bamberton;
· fibre-optic wiring to facilitate tele-working and satellite operations;
· flexible zoning for home-based businesses;
· a 28.3 hectare environmental technologies park;
· a wide mix of housing options including co-housing (innovative in the Canadian context);
· "smaller lots, smaller houses and smaller profits to help make integrated housing available to all";

- recognition that an affordable community is "one which allows reduced car ownership, offers well paying local jobs, strong social services and good public infrastructure such as transit";
- creating one job for every household and making it possible for people to live, work, play and have range of amenities and services within walking distance;
- the creation of neighbourhoods with their own village centres and greens containing neighbourhood meeting places;
- active street life and "eyes on the street" to reduce crime opportunities;
- formation of neighbourhood associations, promotion of a degree of neighbourhood self-management, encouragement to participate in local government, the possible establishment of a non-profit community development corporation.

All these factors will result in a great deal of public participation in the design and ongoing management of the community.

However, despite all these positives, public opposition and a cumbersome and politically charged development approval process have been serious challenges to the project. Opposition is grounded in a wide-spread fear that Bamberton will be a continuation of the kind of development which has been prevalent in southern Vancouver Island. Complicating the issue is the fact that Bamberton is being developed by four union pension funds; British Columbia's social democratic government does not wish to be seen to be favouring a union-backed project and thus the special consideration which might be due to Bamberton because of its innovative approaches may be interpreted as mere political favouritism. As a result, the project is being required to go through a full environmental impact assessment which might well delay or indeed prevent the project from taking place.

Another example of an innovative development that was in fact killed by rigid development and investment guidelines was the "Heart of Spingdale". The intention was to develop a "healthy village"/neo-traditional design pilot project, with mixed use (including home occupations and work shops, a range of prices and affordability and reduced auto dependence) in the midst of a large traditional suburban sprawl development north-west of Toronto. The "Heart of Springdale" would have had a population of approximately five thousand people and would have been "an urban village" based on the model of older, downtown sections of Ontario towns. The strengths of the plan were its concern for conservation and its compact form, designed to provide both economical land use and a congenial, urban built environment with a mixture of uses and a diversity of housing. The plan integrated the "New Urbanism" style[5] with the principles of conservation and environmental protection, raising densities to a level at which the additional cost of this New Urban infrastructure was overcome, yet the product remained highly marketable.

However, while similar to a traditional, much older urban form that might have fitted well into the downtown of existing cities, the "Heart of Springdale"

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[5] "New Urbanism" is the attempt by urban designers and architects in North America to create more convivial and pedestrian-friendly communities, incorporating many of the features of traditional 19th century towns and villages – hence "neo-traditional". (See Duany and Plater-Zyberk (1992) and Calthorpe (1993) for good examples of "New Urbanism".

was something of an anomaly, sitting as it would have been in the midst of low rise suburban sprawl. The plan was called into question by the local municipality with respect to issues such as the proposed higher densities, narrower road widths and grid-like road configuration. A more automobile-oriented street system without laneways or on-street parking was requested by the city, while substantial concessions were made on many other neo-traditional design parameters to accommodate conventional suburban standards. After two years of developing and modifying plans and dozens of meetings with municipal officials, rate payers groups and the public and growing signs that the investors were getting cold feet about the innovativeness of the project and the resultant delays and uncertainties, the developer withdrew the application.

A more successful effort to introduce neo-traditional concerns can be seen in Cornell, a community of approximately 27 000 residents currently being developed to the north-east of Toronto. The objective is to create a model community based on the principles of New Urbanism including diversity of land uses, a well defined public realm, integration of new development with existing adjacent development, preservation and enhancement of the natural environment and built heritage, transit supportive and pedestrian oriented, a full range of commercial, cultural and community facilities and a range of housing types. As with Bamberton and the "Heart of Springdale", the obstacles faced by Cornell have included the challenging of standard development guidelines and practices in areas affecting issues such as rights-of-way and road allowances, as well as the tendency of reviewing agencies to seek improvements in their own particular area of concern without considering the implication for other areas which affect the overall quality and performance of the project. Nonetheless, in this case, the combination of the management team's good planning practice in maintaining the overall vision for the community and encouraging other players and stake holders to look at the urban fabric as a whole, combined with the support of the local municipality and – perhaps most importantly – the fact that 80% of the lands are owned by the Province of Ontario, which is the principal developer, has meant that Cornell is proceeding.

The Province of Ontario is also the key player – in fact, the only player – in the final example of planned new communities. Seaton is a 7000 acre site northeast of Toronto acquired by the Province in the early 1970s as the site for a new town to support a planned new federal airport. The new airport was never built and the town was never developed. Now the Province is contemplating the development of a community of up to 90 000 people on the site and has recently held an international design competition. The competition called for the design of a model community which would demonstrate a real alternative to conventional suburban planning and development, providing an attractive urban environment in which car dependence would be reduced, respect would be shown for natural features and systems and for heritage, the community would be socially healthy and diverse and economically healthy and the plan would be practical and economically viable. One of the three finalists was a consortium of which I was a member.

Our plan (CEED, 1994) was based on the water carrying capacity of the land, envisaging no connection to the main trunk water and sanitary sewer systems of the region; instead, the community would use only the water and snow that fell on the land, treating and reusing some of that water using

innovative ecological treatment processes. (In our opinion, the water-carrying capacity of the land was for 45–55 000 people, not the 90 000 suggested by the government.) Among the other innovative features of our design was the intent to design the community from the household level up. Thus we began to ask what were the environmental, social and economic needs of the individual household, then the block, then the neighbourhood, then the "village", then the town as a whole; we then began to explore how those needs could be met in that same sequence from household to town.

For example, we asked how such basic needs as food and safety could be met and services such as education and healthcare could be provided at the household or block level in the 21st century. Food needs might be met partially through individual or community gardens and food buying clubs, community kitchens or communal dining spaces as in co-housing; safety might include hard-wiring alarms to a central alarm system for smoke, fire, burglary or for summoning assistance, while urban design to promote "eyes on the street", the development of neighbourhood watch programmes and so on will improve safety. Education will be enhanced by the rapidly growing "information highway", with access to educational TV and information sources via the home TV screen, while at the block level there might be recreational rooms for crafts and hobbies and access to information and library services on-line. Increasingly, healthcare can be provided in the home and again the information highway will permit access to "guided self-care" computer programs and on-line and voice – and even video – connections to local health services for advice and consultation, while at the block level one or more supportive care units and "service rooms" might be available to enable people to stay in their local community and receive services from visiting staff.

All of these developments pose challenges to our conventional planning systems and regulations: the creation of healthy and sustainable communities will require significant changes to our planning processes and a significant integration of environmental, social, health and economic planning in the 21st century.

New official plans

Not only are communities and developers beginning to create plans for developments that are more environmentally and socially sustainable and healthy, but a number of communities are beginning to incorporate these concepts in their official (land use) plans. For example, the city of Parksville on British Columbia's Vancouver Island is a rapidly growing community of 10 000 people. In the face of this rapid growth, the residents of Parksville and the City Council, under the banner of Healthy Communities, developed a multi-stakeholder process to define a set of community values and write a new official community plan based on those values. Input was received from more than 1000 people who completed surveys, registered for workshops, visited the Community Visions Office and participated in focus groups. The statement of community values that guides the new official plan emphasizes environmental integrity, maintenance of a small town atmosphere, economic vitality, social equity and a range of human services and amenities accessible to all, transportation emphasizing economically viable and safe alternatives to travel by car and a continuation of the public input process. These values have been integrated into a decision-making check list which is applied to new development in the community (see appendix 1).

But it has not stopped there. The Healthy Community process has now been used to undertake the development of an overall strategic plan for the city. This resulted in the creation of a "Healthy Community Advisory Commission" and a new organizational design for city government with an Advisory Planning Commission and a Parks and Recreation Advisory Commission linking with the Healthy Community Advisory Commission to focus on the relationship between Commission decisions and the city's strategic goals. Five committees or task groups have been formed that involve over 100 volunteers working in areas such as cycling, economic development, environment, housing and mobility and accessibility for people with disabilities. As a recent report on the project notes:

> *"The overall process has broadened the framework for local government decision making with residents, city council and municipal staff identifying options, using tools and developing partnerships which traditionally have not been part of this municipality's frame of reference."*

After three years, the city has "a set of community values ... which has formed the basis for a new community plan and which has broadened the framework for decision making at the municipal level ... a set of innovative municipal policies introducing specific guidelines for inclusion of affordable housing and environmental monitoring, transportation alternatives and a mixture of residential housing operations ... a mechanism for resolving differences of opinion ... (and) a committed partnership between city and residents along with the political will and regulations to support maintenance of the commitment over the long term" (Healthy Communities Parksville, 1993; 1994)

Similar efforts are underway in other communities in Canada. For example, the Regional Municipality of Halton to the west of Toronto, is one of the fastest growing areas in Canada with a population of 320 000 people. In revising its official plan in the early 1990s, the Regional Planning Department based it on two principles: land stewardship, which proposed that ownership and use of land should take into consideration long-term effects. The second principle is that of "healthy communities" which is interpreted as looking at all measures of quality of life. This has led to the development of integrated land use and social planning policies intended to address a set of human and social development goals. The following areas were targeted:

- adequate basic material needs satisfaction;
- economic security and opportunity;
- security;
- knowledge and skills to effectively communicate and make decisions and choices;
- social and emotional functioning;
- opportunity to influence decision making in the community;
- environmental sustainability;
- other health-specific matters (Katsof, 1992).

Similarly, York Region, another large suburban region north of Toronto, has recently incorporated healthy communities in its official plan.

Thus it can be seen that there is a growing commitment to the integration of healthy and sustainable community concepts in planning practice in Canada.

The implication of this for the sort of communities we design and build are profound. If we are successful, we will have a significant impact on the environmental, social and economic health of our communities and the environmental and social sustainability of those communities for future generations.

But as the example of Parksville illustrates, changing our planning practice will have significant implications for the structures and functioning of our government and for the broader issues of governance of our cities. These aspects are addressed in the next and concluding section of this paper.

Implications for government and governance

The implications for government and governance are more profound.[6] We need a shift in our values as a society such that economic growth and development is no longer the overriding social and political objective, but merely one objective that has to be balanced with other objectives such as sustainability, equity, livability, social cohesion and environmental quality. And we need processes and structures that will enable us to do this.

We need ways to bring together all the competing sectors of a community to develop a shared vision and a shared understanding of what we need to achieve – this is what is meant by governance. (Of course, without social cohesion and a civic community, this important first step cannot be achieved.) We will need to create new government structures that will provide the forum for such an holistic approach and the mechanism for accountability. We need policy tools that enable us to evaluate policies in terms of their impacts on human development and the elements that comprise a healthy and sustainable community that supports human development (i.e. social solidarity, community livability, environmental quality, ecological sustainability, economic adequacy and social equity). And we will need to develop indicators that will enable us to measure our progress in these terms.

The Healthy Cities approach has a number of implications for the structure and functioning of local government. In this section, I will briefly discuss the following aspects:[7]

- the purpose of government;
- the approach to government;
- the level at which government occurs;
- the style of government;
- the structure of government;
- the democratic process of government.

The purpose of government

It is necessary at this point in our history, faced as we are with major challenges to the ecological and social sustainability of our way of life, to raise

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[6] There is a clear distinction between government and governance. Osborne and Gaebler (1991) note: "Governance is the process by which we collectively solve our problems and meet our society's needs. Government is the instrument we use." (I would prefer to say that government is *one of* the instruments, perhaps the main one we use, but the distinction between government and governance is important. Governance involves many players; in fact the community as a whole – at least in theory – should be involved in the process of governance.

[7] What follows is an abbreviated version of a longer discussion – see Hancock, 1994a.

explicitly the question 'what is the central purpose of government and governance?'

In addressing this topic, I want to refer back to the CPHA definition of sustainable development and suggest that the central purpose of governance – and of governments – is, or should be, enhancing the human development of the population. While this may be implicit in the structures of governments, with their functions relating to health, education, social welfare, environmental protection and so on, it is rarely explicit and it certainly does not appear to be at the heart of business. In fact, too often it seems that the central purpose of government is very much aligned with that of business, i.e. economic development. But as I argued earlier, economic activity must be understood as a means, not as the end. If the means – economic activity as it is currently practiced – threatens the end – human development – then we must change the means, not the end.

The approach to government

Health does not result mainly from the actions of the healthcare sector but from the combination of the actions of society as a whole. Therefore it should be abundantly clear that if we are going to create healthy cities by working intersectorally to develop healthy public policies, we have to develop an holistic approach to government and governance. We can no longer afford the "luxury" – actually the stupidity – of dealing with issues as if they were discrete and independent, unconnected to each other. An holistic approach begins with the recognition that everything is connected to everything else. We cannot sit contentedly in our disciplinary and departmental silos any longer, because individual sectors can no longer respond to and meet peoples' needs. Instead we have to begin to work intersectorally and collaboratively to achieve our common purpose.

For example, we know now that safety in the community is no longer simply the responsibility of the police – indeed, it never was. Rather, safety depends among other things on how our children are educated, what values they learn at home, in school, in church or through the media, how social and economic needs are met, the way our streets and buildings are designed (whether there are what Jane Jacobs calls 'eyes on the street', for example), how we light our parks and streets, how well neighbours know each other and look out for each other and, of course, how well our police and justice systems work. So creating a safe community is everyone's business.

But if we are to take this notion of wholeness seriously, we have a problem: not only are our governments not structured for an holistic approach – an issue I will come to shortly – but we lack the concept of wholeness and we lack people skilled in taking an holistic approach (see earlier discussion). If we are going to take an holistic approach to governance, we will need new skills (and perhaps new holistic disciplines), new processes, new styles and new structures.

The level at which government occurs

Several years ago at a WHO workshop on the future of health in Europe, the Swedish political scientist Jan Eric Gibland argued that the nation state is being pulled apart by two opposing forces. The first of those forces is "supranationalism"; as a result of GATT, the European Union, the North American

Free Trade Agreement and similar multinational agreements (and, one might add, the emergence of the powerful multinational corporations), decision-making is increasingly being drawn up to the supranational level. At the same time and perhaps in reaction to that, we are seeing the growth of what he termed "parochialism" or localism, in which people want to establish their local identity and exert more local control. In part this is to be seen in the growth of regionalism and nationalism (most horribly, of course, in the former Yugoslavia, but also in northern Italy – the Lombard League – Scotland and in Canada – Quebec, to name but a few).

But localism is also to be seen in the re-emergence of the concept of the city-state. Jane Jacobs, for example, has pointed out that it is cities that create wealth, not nations and as a consequence has suggested that local currencies might well re-emerge (Jacobs, 1984). And of course, the Healthy Cities movement can be seen as another testament to the need that people feel to exert more local control, in this case over what makes their city or community healthy. This is entirely consistent with the concept of health promotion which is, after all, about people increasing control over their health.

The same forces that are pulling apart the nation state may be being replicated at the city level. First, if we take the notion of ecological sustainability seriously, we cannot consider simply the city but the bioregion of which it is a part. For example, a recent Royal Commission on the Future of the Toronto Waterfront (1992) took the position that it is not possible to consider the waterfront in isolation, but in the context of the entire bioregion, defined as the watershed of the rivers that drain into Lake Ontario along the entire length of the waterfront. Another example: Adelaide in South Australia has a watershed management plan that covers the entire coastal plain in which the city sits. And of course the work of the University of British Columbia Task Force on Healthy and Sustainable Communities on the concept of the "ecological footprint" of cities is also in essence a bioregional concept. So the city is being pulled in the direction of decision-making at the bioregional level.

Second, at the same time – and as is the case for the nation state – the city is being pulled apart by decentralist forces. For example, a number of European cities that are part of the WHO Europe Healthy Cities project are in the process of decentralizing their governments. This is not necessarily in response to the Healthy Cities approach, but it is certainly consistent with that approach and it reflects the need that people feel at the neighbourhood and community level to have more influence over the decisions that affect their health, wellbeing and quality of life. And it reflects the reality that it is no longer possible to govern large cities from the centre. So the level at which city government occurs is moving both upwards to the bioregional level and downwards to the neighbourhood level in response, at least in part, to the concepts associated with healthy and sustainable cities.

The style of government
A section of the mid-term report on the WHO Europe Healthy Cities Project (Tsouros, 1990), discussed the need to move from the old management style to a new management style more consistent with the approach of health promotion. It is a style that emphasizes 'power with' rather than 'power over', negotiation rather than directives, process rather than structure, collegiality rather than hierarchy, collaboration rather than competition, an holistic rather than a

sectoral approach, 'both/and' rather than 'either/or' and 'win-win' rather than 'win-lose' strategies.

This new style is emerging in many organizations and is not so much a product of the Healthy Cities approach as consistent with the approach; without such a change in style, it will be very difficult to attain the objectives of the Healthy Cities approach in any city or community.

The structure of government

On the principle that form follows function, changes in the process of government such as those described here will require changes in the structures of both government and governance. (For a fuller discussion of possible changes in the structure of government, see Hancock, 1994b.)

The problem is that we have got a system of government that is essentially based in the 19th century, both literally and metaphorically. The origins of departments of public health, of public works, of parks, of planning and other municipal departments are found in the 19th century. They are organized on the 19th century models of disciplinarity, of separate sectors. The problem is that most if not all of the issues we face in the 21st century cut clear across these 19th century structures (Fig. 3). So we have a set of 21st century issues that do not fit in to our 19th Century structures. Since the current structure is no longer capable of responding adequately to the challenges we will face in the 21st century, we will have to create new structures.

Fig. 3. "Cross-cutting" issues for 21st century cities

	Public Works	Parks	Traffic	Public Health	Planning	etc.
21st century issues						⟶
Healthy City						⟶
Safe City Sustainability						⟶
Equity						⟶
Mobility						⟶
Food						⟶
Energy						⟶
etc.						⟶
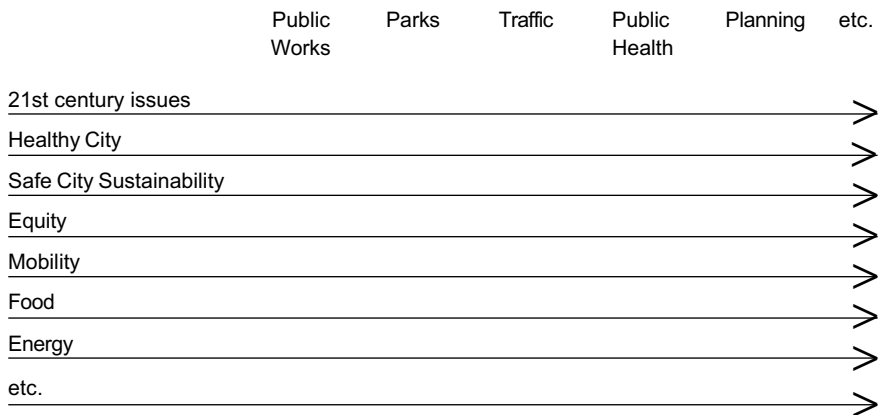
One example is the growing interest in "roundtables" as a means of addressing the problems we face. In Canada, for example, there are national and provincial Roundtables on Environment and Economy that were set up in the late 1980s in response to the visit to Canada in 1986 of the Brundtland Commission. The Roundtables bring together business, government and environmentalists to address the issue of sustainability. There are also growing numbers of local Roundtables in a number of municipalities. More recently, the City of Sudbury, a city of 70 000 people in northeastern Ontario, has established the first Roundtable on Health, Economy and Environment, which brings together local government, local business (it is housed at the Chamber of Commerce), local

unions, community groups, the University, environmentalists, the health care sector and others, to address the task of improving Sudbury's health, environment and economy. The 'Commissions' established in Parksville, British Columbia and described earlier are another example of the emergence of new structures in response to the changing needs of cities.

The democratic process of governance

Winston Churchill said that democracy is the worst form of government – except for all the others! But that is not to say that democracy can't be improved upon; indeed it should be improved upon.

One of the important things to understand about Healthy Cities – rooted as it is in the concept of health promotion and thus of enabling people to increase control over the events and conditions that affect their health – is that it is fundamentally about democracy in the city. As Draper and Harrison (1990) noted with respect to one of the key strategies of health promotion and the Healthy Cities approach, "healthy public policy is impossible without healthy democracy", a view that is consistent with the WHO understanding of healthy public policy as requiring accountability (WHO, 1988). Thus it is perhaps not surprising that a week-long WHO training session on healthy cities held in Horsens, Denmark in October 1993 for cities from eastern and central Europe was supported by the Danish Democracy Fund; presumably the Fund recognized that learning how to create a healthy city is about learning how to develop and use democracy.

Some of the dimensions of democracy that are important in the creation of healthy and sustainable communities include:

- We need to have much more co-design of our cities, based on partnerships between professionals such as architects and planners and the community (see for example King et al, 1988 and Wates and Knevitt, 1987);

- We need to move to much greater co-ownership, co-control and co-management in cities, neighbourhoods and housing developments, as well as in workplaces and many other settings;

- We have to address the issue of the length of term of office. Creating healthier and more sustainable cities calls for a long-term perspective and commitment. Yet we have rather short terms of office – at best five years, but at the municipal level more often two or three years – when we should be making decisions (as the Lakota Sioux are said to do) taking into account the needs seven generations into the future. We have terms of office that are incompatible with the needs we have to address today;

- We also need to move to fairer systems of democracy such as proportional representation in countries such as Canada, the USA and Britain where there is not at present proportional representation and thus where we can have majority governments being elected by a minority vote;

- Finally, we need to move much more towards participatory democracy. (This might include some aspects of the notion of 'electronic democracy', although this does not equate with full participatory democracy, which means a much richer involvement of citizens in the governing of their cities and neighbourhoods).

For as the Executive Director of the (Canadian) National Roundtable on Environment and Economy noted in an editorial recently:

> *"Sustainability planning must be community-led and consensus-based because the central issue is will, not expertise.... We can't protect eco-systems, let alone restore them, unless ways and means can be found to integrate the work of all the communities within the region.... We must.... experiment with ways that involve citizens more directly and deliberately into policy making at all levels".*

He concluded by saying :

> *"The problems identified above all relate to barriers to citizen participation in decision-making because, being consensus-based, the central issue for sustainability is democracy."* (Doering, 1994)

So in conclusion, when we begin to talk about what is a healthy and sustainable city, we come inescapably to question our systems of governance and our structures of government and to begin to talk about how we can have a more truly democratic way of creating healthy and sustainable cities and communities. That is the challenge we face as we try to promote health and preserve the environment, as we seek to ensure just and sustainable human development in the cities, towns and villages of the 21st century.

But ultimately, what this all comes down to is social and political will. Do we have the social and political will to reorder the priorities of our societies and communities, to shift our values, to aspire to higher objectives than economic growth and consumer happiness? If we do not, then I fear we are doomed. But if we do, I believe we can indeed create healthy and sustainable communities that maximize human development.

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The Development of the Glasgow City Health Plan

(Glasgow, United Kingdom)

David Black

Introduction

The production of a Health Plan for Glasgow is a condition of the City's membership of the WHO's European Healthy Cities Project. The task of producing the Health Plan is one which the City has willingly embraced. Glasgow has been an active member of the WHO European Healthy Cities Project since 1988. In its six years of existence it has successfully developed a strong project structure and many examples of exciting and innovative work. Collaborative work towards equity both within organizations and between community and organizations is the central theme of our work. This includes strategic work with agencies, the development and implementation of the Cities Women's Health Policy, pilot projects in a number of communities and the development of a local action programme using lay health workers; these continue to be supported and developed. As a piece of work the City Health Plan does not stand alone; it has not been developed in a vacuum and its implementation will involve all of the agencies and groups that we already work with.

Background to the plan

Health is produced in our city in every day life. It is not primarily a natural phenomenon. It is the outcome of a range of social, economic and individual decisions made by human beings in many walks of life and is, therefore, amenable to change. Defining health in this way means that no single individual or organization is entirely responsible for its production. Since many different factors contribute to health, the responsibility for its production rests with a wide range of individuals and agencies each having a role to play individually and collectively in the production of good health in our City. The policies and programmes of international organizations like the European Commission and the World Health Organization clearly have an impact on health. National Government also has a strong role to play through its economic and social policies. Employers, large and small, have a role to play through their impact on the environment, the products they supply, the jobs they provide and the conditions under which their employees work. As can be seen from the diagram below, the role of the individual and family in shaping their health outcomes is conditional on a wide range of local and national factors.

The development of the Glasgow City Health Plan

Usually when thinking of the health of Glaswegians we think of the Health Board as having primary responsibility for the production of health because of

Diagram 1. The development of the Glasgow City
Health Plan factors

Economic system (production, distribution and employment)

National policies on food prices, taxes on goods, e.g. tobacco, alcohol

Employment and work environment

Social services

Environment and housing

Human rights and social justice (e.g. class, race, age, sex)

Culture of society

Leisure facilities

INDIVIDUAL AND FAMILY LIFESTYLE

Community networks and support

Income

Education opportunities

Health services

Environment and natural resources

Social change, migration, inner city decay

Communication, media-advertising and health education

National policies on health and social services

J. Hubley, 1979

its health care provision. However, the Health Board in fact spends over 90% of its budget treating and caring for people after they become ill. It has been estimated that for cities like Glasgow the Health Care Services account for only between 10% and 15% of the health of its population. Therefore, whilst the Health Board does have an important role to play, the production of health lies outside the competence of its primary activities and the factors which we have discussed so far lie more within the remit of other agencies.

Glasgow's situation

Over the past 15 years, action to improve health status has tended to concentrate on specific diseases (Heart Disease, Stroke and Cancers) stressing individual responsibility for behaviour leading to and associated with these diseases. However, research in Canada, Britain and, more recently, in Glasgow and Edinburgh suggests that disease-specific action is not a successful method of achieving longer life but rather in changing the overall causes of death. These observations are not an argument against attacking particular diseases in Glasgow, however, they do suggest that in Glasgow a disease-specific approach to health inequalities will not in itself be adequate to improve the health of those Glaswegians living in poverty. To improve health in Glasgow we must not attack the diseases of the poor leaving the path open for victim blaming, rather we must attack poverty itself.

Glasgow has an unenviable health record. Health in the City is poor relative to the rest of Scotland and there are significant inequalities of health between its richest and poorest areas. Leaving aside differences in genetic endowment, Glasgow's health is poor relative to the rest of Scotland because of the concentration of poverty within the City and the fact that this poverty is generally greater than elsewhere. The City of Glasgow contains within its boundaries about 80% of officially recognized areas of multiple deprivation in Scotland. From this simple and stark fact almost all of our health problems flow. It must be noted in this context that, whilst health in Glasgow is improving, it is improving at a slower rate than elsewhere in Scotland. Unless there is a fundamental and unexpected change in the current trends, inequalities of health within Glasgow and between Glasgow and the rest of Scotland, are likely to increase.

It is of particular concern that poverty in households with children has increased dramatically since 1982. A wide range of evidence, including evidence from Glasgow, suggests that if children have a bad start in life they do not recover from this in their adult years. Under current conditions children from the poorest parts of the City are having their future health compromised by the unsatisfactory conditions into which they are born and brought up.

The most striking feature of health in Glasgow is the variation in health between affluent and deprived areas. This difference is largely caused by the increased vulnerability to ill health and lack of wellbeing which poverty brings in its wake, rather than specific causes of death. This tendency to premature death outweighs any specific hazard other than cigarette smoking, which is itself related to poverty. Of the 6700 deaths among the under 65s which occur each year in Glasgow, 2600 are associated with this difference in health between the rich and the poor. Analysis shows that this vulnerability is acquired early in life and maintained through to adult life. To combat this will require us to take a long term view if we are to prevent the children of the poor going to an early grave. Children must be given a good start in life. Except for a very few indices, the health of those in poverty can be improved only by coordinated action among many agencies, groups and individuals in the statutory, business and voluntary sectors.

Given that the health of Glaswegians is more dependent on actions taken outside the health care system than within it, if we act upon the conditions which lead to poor health and illness through an integrated social, economic

and environmental policy, good health will emerge in Glasgow as the norm rather than the exception.

A model for action

The experience from other parts of the world, notably Canada and Australia, suggests that three interrelated types of action are necessary to achieve good health. These are:

1) environmentally sustainable economic development;
2) a wider view of health;
3) an equal system approach to the city's development.

Environmentally sustainable economic development is a response to concerns about the ability of the natural environment to continue to support human life while, at the same time, dealing with the increasing demands of society for raw materials and an improving quality of life while ensuring greater equity.

The wider view of health holds that human health is affected by the total urban environment and recognizes the influences of urban planning as a whole together with community development on the health or wellbeing of individuals and groups.

The equal system approach provides a systemic model for planning and decision making focusing upon the interrelationships between all the elements of urban planning while respecting natural processes. Human beings are an integral part of, rather than apart from, the environment in which they live.

Although these three approaches are the products of different intellectual heritages each recognizes similar factors stressing the importance of healthy environments in the production of a good quality of urban life. These are sustainable communities, green space, the relationship between the natural and built environment and economic activity. To make this possible for all Glaswegians requires integrated planning and management which combines multiple aims, multiple means and multiple groups with diverse interests working towards the achievement of fundamental social and economic goals while maintaining the environmental integrity of the city.

Diagram 2. The development of the Glasgow City Health Plan factors
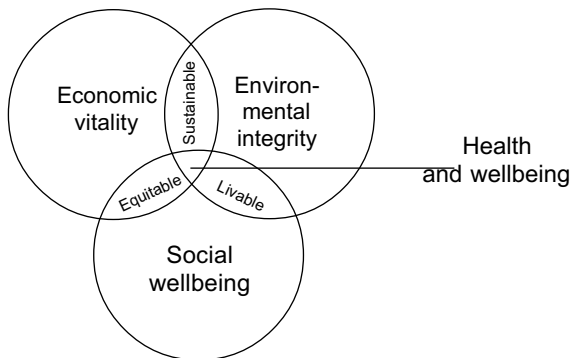
Developed from an idea of Trevor Hancocks

Taking the above model, we can see that in Glasgow to develop health for all our citizens we need to develop work in three related components.

Economic vitality:
A broadly based competitive economy responsive to changing circumstances and able to attract new investment, providing opportunities to a wide range of citizens for both employment and investment in the short and long term.

Social wellbeing:
This depends upon a healthy population which in turn requires equitable access to good local environments including access to safe, warm, dry housing, green space, recreational and cultural activities and public transport. The ability of local residents to participate in local decision-making processes is integral to the development of strong, viable, healthy and cohesive communities.

Environmental integrity:
The environment in Glasgow is composed of both natural and cultural elements. The natural environment includes land, air, water, plant and animal life. The quality of the natural environment may be heavily affected both positively and negatively by human activity. A clean and varied natural environment is valuable both in itself and for its importance to the quality of human life. The cultural environment is shaped by human activity and includes the built environment – the sort of homes we build, industries we attract, offices we work in and infrastructures which we develop. It also includes resources like parks, trails and the architectural heritage with which Glasgow is well-endowed. The ways in which we maintain and develop this environment have profound effects on the health of the population both now and in the future.

Integrating these principles
The three principles of social wellbeing, economic vitality and environmental integrity are of course interrelated. For example, a healthy economy ensures a greater amount of employment, a greater amount of employment means more disposable income and therefore more money in the system with which to enable the preservation and enhancement of the environment in our most badly affected areas.

These principles considered together form the system on which the vision of Glasgow as a healthy city is based and on which the strategy for achieving it will be built. The principles also fit well with the aims and objectives of the main agencies working to make Glasgow a first division world city. They draw together a range of concepts that will give Glasgow a lead in developing practical action to develop a growth management strategy which is explicitly based upon solutions to global as well as local concerns. The diagram illustrates the relationships between environmental integrity, economic vitality and social wellbeing.

In order to produce health each component of the model must have certain characteristics in relation to the other. These interrelationships are illustrated by the overlaps in the diagram, the bigger the overlaps the more integrated our policy development will be in these three fields. For example, social wellbeing will be enhanced if the community is convivial, equitable and livable for those who reside there, adding to and supporting their quality of life. The environment

must be viable, sustainable and livable and the economy equitable, sustainable and prosperous. When the city has these characteristics in balance, then Glaswegians may be said to be healthy. Making Glasgow a healthy city requires all of us to concentrate on the interrelationships between these various spheres of activity and to focus upon the question of balance. No one sphere of activity can consistently be promoted at the expense of others or the viability of the city is damaged. Setting priorities for health in such a setting is not a straightforward task. The best the city can do is make decisions and choices based upon shared visions and principles taking account of the current economic and social conditions.

What is the Glasgow City Health Plan?

A document? A process? A beginning? All of these?
The production of a city health plan has been taken on willingly by the Glasgow Healthy City Project as we believe it to be a necessary task to underpin the development of collaborative work towards the production of health in the city.

The document is the outcome of a process and it is a health plan not a health education plan. The model that we use involves the development of an integrated social economic and environmental policy. But the most important part of the plan has not been the plan itself but the process which led to the plan as its outcome.

Why the process is important
The production of a plan could conceivably be undertaken by a single person locked in a small room. The document that would be produced while it may be excellent would stand little chance of being implemented. It would be seen as an imposition, as not reflecting the needs of practitioners as they hadn't been consulted and people would be unwilling to implement it as they would have no investment in it.

In producing a plan for the whole city you need to take everyone along. As can be seen from our model, no one agency can shape the health of the City and the views of all the agencies need to taken as to how to proceed.

The development of joint working is core to the success of the plan and the Glasgow process has attempted to build this from the start of the process of developing the plan.

The process of developing the plan within the agencies in the city
The production of the plan and the thinking behind it has been a collaborative effort from the start. Change of the size and complexity necessary to make any city healthy is only possible through joint work. This document is a reflection of the shared effort that has begun to change Glasgow's health status.

The Health Plan process was purposely started with the major agencies in the city, as real commitment from them was necessary if the Plan was to be anything more than a 'wish' list.

The process

Without commitment from the senior decision-making forums in the City the development of the plan would have been very difficult. Access to this level of support which the Healthy City Project has through its steering group was vi-

tal to the development of the plan. The high level commitment to the plan that the project had was instrumental in providing access to senior management of the service agencies.

The process of the development of the plan can be viewed as a circular one in that it starts and finishes with the senior decision-making committees of the statutory agencies of the City. (see Diagram 3).

The Healthy City Project facilitated a collective approach to the City Health Plan, bringing together senior members of all the service providers in Glasgow to explore what each of the services did to make the city a healthier place.

Diagram 3. The process of developing the Glasgow City Health Plan

Launch of City Health Plan

Accepted by Policy and Resources Committees of all three statutory agencies

Project Steering Group Presentation

Final Consultation

FINAL DRAFT

2nd set of interviews with all department representatives and other interested bodies

Comments/ Amendments

Draft document out to consultation

Steering Group Presentation

Production of draft City Health Plan

Interviews with all departmental representatives

Consultation with Project Steering Group re process for developing City Health Plan

Heads of Departments identify representatives

Introductory meeting with representatives of all three agencies. Outline the process behind the plan, provide input about socio-political models of health, Glasgow's Health Stats etc.

Homework for the representatives

2nd Development meeting with departmental reps

Homework for the representatives

Production of Working Document 1. A description of services in relation to the health of the city

Steering Group Presentation

3rd Development and information meeting with representatives

As can be seen in diagram 3 through a series of meetings, the group developed an overview of the work of the agencies. The agencies themselves provided descriptions of their work. From these, together with the overview and the personal interviews a City Health Plan was drafted.

After extensive consultation this draft was accepted by the Healthy City Project Steering Group and by the Health Board, District and Regional Councils and was circulated for comment and updating to all participating agencies. It is an indication of the importance that agencies placed on this idea that very busy departments gave valuable time to comment on the document.

The City Health Plan has been adopted by the three statutory agencies in Glasgow and they have agreed to develop the work, ideas and issues found within. The Healthy City Project will support this process and develop the work to encompass the views and work of other participants and partners.

Plans are specific to sites

It would be difficult to take this plan and use it here in Madrid or in any city other than Glasgow as the plans are site specific. What is transferable though is the process of developing a plan.

Shape of the Plan

This document is the first step for the city as a whole in working towards better health for all of its citizens. It provides for the first time, an overview of the work being done in all the agencies of the city to advance health.

Health – whose responsibility? puts the case for health in the city being seen as the outcome of a wide range of factors rather than just an outcome of personal behaviour.

The plan then outlines the current state of health in the city, **Glasgow's Current State of Health** and explores some of the factors that are implicated in the development of illness rather than health.

Making Glasgow a Healthy City argues for joint work in three interlinked areas, economic vitality, environmental integrity and social wellbeing, as the key to the development of the healthy city.

In **Current Activities** the document describes the work that the three major partners in the Healthy City Project are doing at the moment to make and keep the city healthy.

The next section Values and Vision outlines a set of aims and values for the development of a healthy city.

Action Proposals describes the plans and proposals of the partner organizations to develop further work.

Finally in Monitoring Review and Development the proposals for taking forward the collaborative work and widening it out into the community are described.

This is only the start of the beginning

The production of this document is just the first step; we now intend to develop a strong community input to the process and further develop the plan, ending with a plan which has the active support of all members of the city.

The health of Glaswegians now and in the future is central to the wellbeing of the City as it moves into the 21st century. Partners in the Healthy City Project

are fully committed to the production of health and wellbeing in the City and our record of joint work in this area to date will ensure that we have the will to see this activity through to its successful conclusion – a City in which all of our citizens are able to reach their maximum potential, unhindered by the burden of ill health.

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Housing Improvement, Public Health and the Local Economy

"Better Housing, Better Health"

(Glasgow, United Kingdom)

Dr Andrew Lyon

Introduction

Glasgow is participating in both the World Health Organization's European Healthy Cities Project and the Organisation for Economic Co-operation's Ecological Cities Project. This paper outlines the case study which the City is developing as part of the latter. As the title implies, however, the City clearly sees that an integrated approach to housing and related matters will have an impact on the health of city residents, particularly those who experience poverty.

The case study gives some background on Glasgow itself and its involvement in the Healthy Cities Project. It then goes on to describe the action taken as part of the OECD Ecological City pilot project and presents some preliminary results.

Glasgow

Situated in the western lowlands of Scotland, Glasgow has a population of some 670 000. If current population trends continue, it is forecast that this will be closer to 600 000 by the turn of the century. Within this overall decline, increases in numbers are forecast for the very elderly and those aged under 15. Decline is forecast to be fastest in the 15–44 age group.

It is well known that Glasgow's economy in the 19th century and the first part of the 20th century was based upon heavy industry, mainly shipbuilding, locomotive manufacture and steel making. Over the past thirty years this situation has changed significantly. Currently, around 70% of the city's employment is to be found in the service sector. Recent national trends in economic policy have guided manufacturing industry away from Glasgow to newer and better supported greenfield sites which ring the city. This national trend is reflected in a lack of central government support for the redevelopment of brown field sites in Glasgow. This has significantly affected the use of space within the city, contributing both to transport difficulties and the consolidation within the city of many areas of multiple deprivation.

Socially and economically, Glasgow is a city of contrasts. The average unemployment rate for the city as a whole is around 15%. In some of the most badly affected areas this rises to 30%. In some areas unemployment among the young (16–25 years) reaches almost 50%. Glasgow also has a high concentration of long term unemployed. Around 40% of those out of work have been so for more than a year. Half of all schoolchildren in the city qualify for clothing grants

and just under 50% receive free school meals. In some areas two-thirds of social work enquiries are debt-related.

In these circumstances, Glasgow has both the best of ill health records and the worst. In Bearsden, a leafy suburb, infant mortality in 1990 was zero per 1000 live births. In neighbouring Drumchapel, a postwar peripheral estate characterized by high unemployment and lack of amenity, infant mortality was 14 per 1000 live births, almost twice the level of Cuba. The same degree of difference also characterizes adult mortality and morbidity. For example, a comparison of the same two areas shows a difference in life expectancy for men of almost 10 years. The same pattern is repeated across the city. Nor is the difference restricted to men. In some of the poorer areas of the city women are 2.5 times more likely to die prematurely (before the age of 65) than their more affluent counterparts living in other parts.

These differences also persist for given levels of risk from particular diseases, suggesting that the poor have a higher susceptibility to risk from premature mortality from all causes of disease. The picture which emerges is one in which poverty is the major cause of ill health in the city. Glasgow's many pockets of multiple deprivation make health extremely difficult to achieve for many of its residents.

The Glasgow Healthy City Project

The city is not complacent about these conditions and many initiatives exist to tackle both their root causes and their effects. Glasgow has been a member of the WHO Healthy Cities Project since 1988 simply because the major agencies in the city wish to improve this situation. The initiative has the active support of some fifteen agencies in the city working together for a healthier city. It follows from the understanding that health is created in everyday life and that the responsibility for health is very wide. Health cannot be created by a single agency working alone. The participating agencies have therefore have supported a programme which seeks to produce, through joint actions, conditions in which health, rather than illness, can flourish.

Since its inception in 1988, the initiative has developed four interrelated strands of work. These are:

l. **Policy Development Programme**: which seeks to spend mainstream resources in ways which enhance health;
2. **A Local Action Programme**: which seeks at neighbourhood level to engage and support local communities and agencies in health action;
3. **An Information and Training Programme**: which includes a wide range of publications, formal and informal training, conferences, seminars and student placements;
4. **A National and International Programme**: which seeks to share experiences with other interested locations and agencies.

This case study concentrates entirely on one aspect of the Policy Development Programme – our involvement in the OECD Ecological City Pilot Project, through which we are investigating the relationship between housing improvement, social and economic and environmental change and human wellbeing.

Housing in Glasgow

Glasgow City Council is the largest landlord in Europe. It owns a stock of around 140 000 houses. The postwar period is characterized in housing investment terms by the clearance of inner city slums and the re-housing of the population, mostly in peripheral housing estates. This movement took place in the 1950s and 1960s at a time of full employment and low fuel costs. Following the OPEC oil price crisis in 1973 this situation has changed drastically. As described above, unemployment is high and fuel prices have risen significantly in real terms. Over 30% of the Council's tenants live in accommodation which suffers from some form of dampness or condensation. Around 13 000 homes are below the tolerable standard due to rising or penetrating damp. One fifth of the Council's stock requires essential repairs to the roof. More than half of our tenants can only afford to heat one room in the winter and to reach adequate comfort levels a young single tenant on welfare benefit would have to spend 70% of their income on fuel.

It is now widely accepted in the city that there is an association between poor housing and poor health. This is particularly true for the health of children. In addition, it is probable that sickness leads to the loss of days in school increasing the likelihood that children from such households fall behind in their education. It is also likely that the living conditions associated with dampness – families living, sleeping and eating in the one room which they can at least try to heat, has a palpable effect on the quality of social relationships within the family and between families and friends.

So far then in Glasgow we know several things. Firstly we know that we have a relatively poor housing stock. Secondly we know that there is an association between poor housing and poor health and that this association is exacerbated by poverty. Even if Glasgow were to have an exemplary housing stock, one quarter of our tenants would not be able to heat their home because they do not have enough income. This situation also has an impact on the physical environment. We know through the Glasgow Action for Warm Homes strategy, which seeks to reduce fuel bills to no more than 10% of disposable income, that many households spend up to 50% of their disposable income on fuel. Because of the poor thermal performance of our housing stock we know that most of this fuel cost ends up heating the sky over the city. One estimate suggests that for every £8 spent on fuel, £1 heats the house and £7 is lost through the fabric of the building.

What we do not yet know is by how much wellbeing improves when housing improves. Nor do we know the relative gains which accrue to different types of improvement. This latter question is the important one from the point of view of improvement. In a situation where resources are continually being eroded and budgets become tighter, it becomes of paramount importance to know from which types of investment come which types of improvement in standards of living, so that we may invest more effectively.

The OECD study

This is precisely the information we seek to procure through our involvement in the OECD project. It is important to note at this stage that the project is a cooperative one, jointly funded by City Housing, The Department of Public Health and the OECD. The aims of the study are:

- to investigate health, social, economic and environmental benefits from energy and capital investment in Glasgow City Council housing stock;
- to explore changes in expenditure and living patterns when cold and damp are removed from a home and disposable income increased;
- to explore differences in these outcomes from different levels of energy investment and capital improvement;
- to assess tenant's views regarding these improvements to their homes.

Methods

Initially, the research encompasses two phases, though these phases may be repeated, leading to a continuous assessment of the effects of housing improvement both on wellbeing and its interaction with the City's regeneration objectives. Each phase will cover 200 houses which will be improved and 100 matched control households which will not be improved.

Phase One examines the existing state of affairs before any improvements have taken place. This phase commenced in December 1994.

Phase Two will begin in December 1995. In this phase we hope to see the various impacts of improvement beginning to have effect. This phase will restudy each household one year after improvements have taken place and after a whole heating season has been completed. Thus the impact of reductions in energy bills should begin to emerge in the lives of tenants as they find themselves with additional money in their pockets and purses. These may include: cost savings in energy bills and resulting additional expenditure in other areas of life with multiplier effects in the local economy; increased comfort levels; improvements in health; less use of health care facilities; changing patterns in the use of household space with impacts upon social relationships both within and without the household.

In each phase a number of investigative techniques are being used to gather information. These include:

- An extensive structured interview in every study and control household and a smaller number of in-depth interviews to elicit more qualitative information on a range of issues;
- Focus Groups to enable guided discussion around issues raised in the structured interviews;
- Fuel consumption records to enable before and after comparisons;
- Weekly diaries of activities before and after improvement;
- Separate physical measures of indoor air quality before and after improvement.

Each method is capable of producing stand alone results. The intention is however that the methods used will complement each other, contributing to a more complete understanding of the relationship between housing improvement, ecology and human wellbeing. Most important of all, it will give us a better insight into what we should do to improve the situation.

From Recycling to Comprehensive Cross-sectoral Integration of Environmental Policy

(Schwabach, Germany)

*Ms Elke Pahl-Weber, National delegate in the OECD Ecological Cities
for the Federal Ministry of Regional Planning, Building and Development*

Developing an ecological city is an immense task, but in practice it is possible if a step by step approach is adopted. The first sign of success could be the city itself showing that it is not prepared to sit and wait for the national or state government to provide either guidelines, legislation or finance, but beginning to manage the changes on its own initiative.

The case study that I am going to present is not an example of a radical change, but shows the efforts of a small city in the southern part of Germany.

There are a lot of examples in German states, such as the International Building Exposition in the Rhine–Ruhr area, where much experience has been gained, also in the cities where the successful practical implementation of policy in certain areas can be referred to. Furthermore there is the International Exposition "EXPO 2000" in Hannover, which deals with the development of the city as its main topic and highlights several projects, based on ecological principles.

Schwabach will be able to learn from these experiences, but what this case-study should really point out is how changes can be managed under "normal day" conditions and within the financial, public and administrative framework of a small city. This case study will then show how small cities can manage the development towards an ecological city. However it does not deal with the role of the national government in helping cities address environmental problems more effectively.

The case-study consists of two parts:
· the theoretical framework;
• the planning game in Schwabach.

The theoretical frame

This case-study is based on a research project of the German Federal Ministry for Regional Development, Building and Urban Development. The goal of this project was to integrate firstly the experiences made in special studies on environmentally sound towns and secondly the practical experiences of different cities in ecological planning made in recent years, into an integrated concept in order to examine the contribution of urban planning to environmental protection. The Project started in 1990.

The first part of this project was to find a convincing concept for an environmentally sound town by combining and integrating successfully tested building

blocks. A group of experts on urban development and technical fields were brought together and a method developed to ascertain the conflicts and synergetic areas between special sectors of planning. We dealt with eight sectors: building material, land use, landscape planning, production and emissions, traffic and public transport, energy, water and waste.

There are different problems to be dealt with by combining the sectors, the most important are firstly the problem of how to manage the different methodological questions of estimation and secondly the problem of how to achieve cross-sectoral strategies in the communes, bearing in mind that most of them have a sectorally organized administration.

Defining the general and the special goals for the selected communes entails defining goals for environmental protection. These will be related to different indicators that are valid not only for people but for flora and fauna too. The goals for environmental protection exist within economic and social diversity. An evaluation problem occurs as it is impossible to define what is right or which indicators are the best, because we have not yet found scientific methods to compare the different indicators. So we worked out a proposal that could be discussed in the communes and that could initiate a decision process dialogue. This meant breaking down the complex ecological development problem into different stages which could be dealt with in small steps whilst retaining the integrative aspects.

Our proposal was brought together in a handbook, which shows practical examples and contains decision-making flow diagrams for the sectoral administration with goals and defined points of interaction of the different sectors. The handbook ends with several proposals for communal activities.

In the first step there is a general model of identifying points of interaction by defining general goals for environmental protection. In the second step there is a special decision-making flow diagram to identify the points of interaction in the different sectors. This general model of the integration of urban and environmental sectors should be a help to the communes to find out which sectors can be interlinked.

For example, if the commune has to decide on the development of a new residential area, by using this general model, they can identify the points of interaction between all sectors which can lead to alternative courses of action being considered, i.e. alternatives which are ecologically friendly. In this case the solution might be inner development instead of using undeveloped land.

The theoretical framework could be of help for the communes in deciding upon methods for an ecological sustainable development for their special conditions. The ecological goals are conflicting as well as producing synergetic effects.

There are two ways of forcing ecological sustainable development: the ecological decision on a special topic of every day politics and the preventive decision to develop the city as an eco-city.

In both cases the conflicting goals and the synergies have to be made clear. This means that a discussion regarding the goals is necessary – a discussion in the administration as well as in the political arena and among the public. There are general conflicts and synergies, which can be made clear and can give support to communal decisions.

Example: See flow diagram *Building Materials*: promotion of goals in other ecological fields and obstacles to goals in other ecological fields. This example

shows how the decision-making process could unfurl if the commune is to be seen as an exemplary model. An ecological use of building materials could be demonstrated both in communal and private building projects, through for example, use of wooden windows – though not made from tropical wood but from regional material with low transport-costs, non-toxic colours and materials with low energy production costs and a high contribution to energy use minimization.

By these diagrams we want to show that the process of developing an eco-city is not only a process of technical innovation and financial stabilization but a process of communication too. In the second stage of this research project an attempt has been made to communicate ecological development between the citizens, the administration and political bodies within the commune of Schwabach.

The simulation game as a planning game

The town of Schwabach is located in Bayern, a southern county in western Germany. It has about 40 000 inhabitants. It is one of the smallest autonomous towns in Germany, which means it is not subservient to a higher local political body, i.e. it is not under control of a district (Kreis). Schwabach is located in a flat area, near the city of Nuremberg. Its economy is based on agriculture, services and small-to-medium size enterprises. The number of inhabitants of Schwabach was constant during the eighties, but between 1988 and 1993 the population grew by 8% . A prognosis for the development of the population has been made by three surveys estimating the growth of between 5% and 10% up to the year 2005. This is a situation a lot of West German cities have to deal with and Schwabach is preparing plans for new residential areas on the basis of its land use plan made in 1983.

Schwabach was selected for the game simulation by the ministry for regional and urban planning and building in view of the described city profile, i.e. its size and administrative status, but just as much due to the environmental commitment of the local administration, especially on waste and refuse policy as well as its being "normal": the town does not suffer from specific problems.

The game simulation was prepared by a handbook that puts together the theoretical framework and was followed by a group of scientists from the Technical University of Berlin.

Together with the idea of integration as worked out in the preparatory stage a second idea was put into practice: the involvement of the local participants and cooperation with the upper administrative bodies.

So the game had five steps:

1. The preparation: five fields were selected: land use, landscape planning (green and open areas planning), water, traffic, energy;
2. The information gathering with intensive seminars on the selected fields, the seminars being divided in two sections. In the first, some experts introduced the subject of debate, pointing out specially the successful solutions adopted in other cities. In the second, working groups with local officers, local councillors, citizens, representatives of the National Government, of the upper administrative levels and of the business community discussed the local situation and put forward their solutions to the problems.

3. The discussion: where some local council committees met to work out the official proposals for submission to the local council;
4. The political engagement: when during an open meeting the local council approved the measures proposed by the different committees. A final strategic document put forward all those measures: the "Way to the urban ecology in Schwabach: 1993–2003";
5. The implementation and the progress control: an annual conference on urban ecology to be organized by the town to evaluate the implementation of the approved measures; the first conference took place in June 1994, the second one will follow in May 1995.

The planning game was a big event in the traditional local administrative culture: new processes of decision-making were carried out and new information circulated. It was important that the city decided not just to play its role in a game simulation (that would not have any direct consequences for the city itself, except in testing methods of developing integration), but decided to make real decisions in the urban council. After that the city would really be bound to the decisions and would have to carry them out and finance them.

Local newspapers reported the game itself and the subsequent steps in politics and urban development.

The key-slogan of the game was to "make small steps" and find the "Schwabach way". These two terms show that Schwabach did not decide to make a (new) master plan or general concepts on energy, traffic and public transport for example. The central idea was to try to redirect the communal policies gradually. It deals with "small steps" because the local administration and the citizens can grow with the projects, the goals are not unreachable, information gets broader and people get involved step by step. The city of Schwabach took the chance to make small successful efforts and avoided the failures associated with large concepts, which could make the topics undiscussable for years. This is a strategic way of planning. It includes projects from the very small to the quite big; it includes decisions on activities and the projects are not linked in a way whereby one project cannot be carried out without the other.

The strategy for the urban ecology approved by the town council (Schwabach's way to town ecology 1993–2003) is ten years long. This temporal length is probably symbolic as not everything will be implemented by the year 2003, but it represents the fact that the programme wants to communicate a temporal stability which can continue regardless of political changes.

The way in which local participants will be involved in the decision-making process is not clear, but several steps have been taken to give them a chance: the local press is currently publishing and discussing ecological questions, new jobs have been created and the yearly conferences on the Schwabach way are open to the public.

The employment effects of the planning game and the urban council's decisions have not been analysed, but about 10 new jobs have been created since the planning game in the area of waste disposal and recycling. There is a new job in the area of landscape and another with responsibility for energy questions. This is more than a quantitative success but also a qualitative one, because it means that information flows and discussion on these topics will increase.

Concerning spatial policy inner urban development takes top priority on the political agenda, together with the mixed use urban areas and intensive greening as options and in addition to outer development. Up to now the city of Schwabach has not carried out any research into the possibilities of inner development, as the development pressure is not high enough, but it decided that if new areas are to be developed on the green sites, they will decide on the ecological value of the land and will not use ecologically valuable land. New streets can be built only if they are really urgent. Existing major traffic roads will be reduced in size. Whenever green areas are being used for planning development the city will initiate a special environmental compatibility index process as part of the planning process.

Concerning energy Schwabach is member of the allianza de clima. They have the goal of reducing CO_2 emissions by about 50% up to the year 2010. That is why Schwabach is decentralizing energy production and using renewable energy in the new developed areas. They combine it with building materials with low energy costs. An example is the new residential area with flats for low incomes: wooden houses of high architectural quality and low energy use. Communal buildings have been modernized and this leads to reductions in CO_2 emissions of about 3% within the first year after the completion of the planning game.

Especially in the area of waste, where the city of Schwabach has gained good practical experience, the connections to the other sectors of communal activities and the orientation to a circular concept is obvious. The most important point is to avoid waste. One of the contributions to sound food and the avoidance of waste is the everyday market in the central market square of Schwabach, where the regional farmers sell their products and several merchants only sell ecological tested products.

This year Schwabach is starting a bio-stabilization process with organic waste. In this way a contribution is made to several ecological goals: it means reducing CO_2 pollution, the energy output of a 6000 tons-complex in biogas is compatible to 450 000 litres of oil. It is used as heating energy in the new residential areas and for production on industrial estates.

After the planning game in May 1994 the first communal conference on ecology took place. Schwabach used it for obtaining better information, as within this first year only very small steps had been possible.

The participation of the citizens in this conference was quite small, because they could not afford to spend a normal working day for it. Schwabach is now planning special evening sessions for the second communal conference in May this year.

The planning game and the preparation cost about 1 000 000 DM. This amount was provided by the national government. The city of Schwabach would not have been able to allocate this sum itself, so this amount should be viewed as the necessary financial contribution of the national government to starting the process in Schwabach. The city of Schwabach provided the necessary womanpower from the administration and allocated the financial means for the yearly conferences on ecologically sustainable development in Schwabach. Now the government is embarking on another planning game in a city in the new eastern part of Germany where the costs are as high as in the first planning game. But if planning games were used as a method to start ecological development in several cities, the costs will be much lower.

We imagine that the costs of setting up these planning games will reach an amount that the cities themselves can afford.

So the planning game in Schwabach should be a model for other cities, who want to start ecological development in small steps and in a strategic way.

Project:	Model town ecology
Research:	Project of the Federal Ministry for Regional Development, Building and Urban Development, Bonn
Contracting agency preparatory stage:	Prof. Dr. C. Farenholtz and Baumgart, Pahl-Weber, City planning, Research and Consultation, Hamburg Publication: Research Report: Handbook for communes, 1992
Contracting agency gaming simulation:	Dean Prof. Dr. G. Schmidt-Eichstedt, Department Environment and Society, Technical University Berlin Publication: Planspiel Modell-Stadt-Ökologie, Difu Beiträge zur Stadtforschung, Deutsches Institut für Urbanistik, Berlin 1994

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The Green Action Plan

(Cracow, Poland)

Jan Friedberg, Deputy Mayor of Kraców
Ewa Deborgòrska, Health Department

Topic: Local Agenda 21 development

Following Agenda 21 the Municipality of Kraków launched a new priority programme in 1994 called "Ecology and Health" as the result of the need to integrate and coordinate the efforts to improve and transform Krakow' s environment.

Local authorities have a key role to play in making sustainable development happen, because of their legislative capacity, the possibilities of local environmental policies and implementation, planning activities and – last but not least – because they are the closest to the public level of government and the responsibilities of local politics.

The legislative activity of local authorities is needed to manage development in a way that is both ecologically beneficial and sustainable over the long term.

The possibilities of the environmental policy's implementation, with respect to, among others, planning of land use, urban management capabilities (including efficiency), creation of infrastructure and such activities, are useful in the preparation of the strategic programmes at the local level.

There is also a big role to play in educating people and increasing their awareness, as well as mobilizing them around sustainable development by the local government. The process of consulting citizens, businesses, industry and ecological organizations is very important for the local agenda to be developed.

Programme: the Green Action Plan

The Green Action Plan for Kraków is expected to define the ecological management and development strategy for the city, using elements from many various projects and plans, that are realized with respect to land use activity, environment and health protection. It consist of two parts: "The Strategy", concerning objectives, aims and the general vision of the ecological policy and "The Corporate Action Plan" – a detailed project concerning the main activities connected with environment and health management.

City/region/country: Kraków, Poland

The City of Kraków, the old royal capital of Poland, is the educational, cultural and artistic centre with a significance reaching far beyond the borders of Poland.

As well as the above, Kraków is a typical example of a central European city now on its way from a communist centrally-planned economy to a free market economy and democracy.

Among the many problems that the city faces the main are caused by the "communist heritage", namely: industrial pollution, deterioration of historic buildings and negative effects of past rapid growth of the city which had not been followed by the creation of proper urban infrastructure.

The transition period provides a chance to improve the situation. The Municipality is working on the reform of local government, making efforts to get information about macro and micro-scale phenomena and is building an institutional and organizational framework connected with health services reform, changes in the insurance system and the monitoring of environmental pollution.

Aims (programme goals, addressed problems):

The main strategic goal of municipal policy is the improvement of the quality of life among the inhabitants of the city and the restoration of Krakow as the well-known educational, cultural and artistic centre, as well as making the city a modern economic and tourist centre.

It is not possible to achieve those aims without satisfying proper ecological requirements.

One of the most important instruments and tools used in the management of the city is the General Land Use Plan and the policies connected with it. These policies not only define general principles of activity, namely spatial development and environmental protection policies, but they also regulate activities in the individual sectors of land use management (sectoral policies), implemented during 1994.

Let' s remember that today's profound political and economic changes in Poland generate the need for radical changes in these fields.

"The Green Action Plan" is a kind of development and annex to the mentioned basic documents. It is expected to be a project that encompasses particular activities that further the main tasks which resulted from the General Land Use Plan, as well as making indispensable initiatives in the non-spatial sphere (legislative, organizational, educational etc.), making the realization of aims possible.

Description of the case:

1. Environment and background

Kraków is situated in a sheltered valley of the Vistula River; its climate is mild and temperate. The winds blowing here are mainly weak, over 65% do not exceed 5 m/s, and in addition windless days have a significant share in Kraków's weather (20%). Such weather conditions and land configuration lead to typical inversive states and result in severe air pollution.

The major sources of air pollution are: industry and the energy sector outside of the city and beyond the country's borders, heavy industrial plants located in Kraków, traditional coal-fired home stoves, local boiler houses and motor vehicles.

The main pollutants are: suspended particles, sulphur dioxide, carbon oxides, nitric oxides and ozone.

Since 1985, the quality of the air has improved significantly, mainly due to industrial recession, but also to the consequent policy of improving industrial technology, some administrative enforcement and investment in the energy sector – mainly by enlarging the district's heating system and by coal to gas conversion.

The state of Kraków's main river – the Vistula – is so bad that the river does not provide drinkable water because of the high content of salt caused by the coal mines of Silesia. Neither can its water be used for industrial or agricultural purposes.

Particles and gases from industry, the low emission of pollutants as well as exhaust fumes contaminate to a great degree the soils and plants in the city. There is much pollution caused by heavy metals such as lead, cadmium and chromium.

In addition, solid wastes accumulated at industrial and municipal landfills also have a serious environmental impact. Despite protective measures, contaminants get into the soil and into the water. The poor sanitary condition of Kraków's municipal landfill, located in Barycz, was the cause of numerous protests and complaints by the local residents. The city is working on reducing its negative impact and has the intention of closing the landfill in Barycz by improving technology and organizing a new system of collecting, treating and recycling wastes.

2. Planning and development process

The Green Action Plan is not an academic exercise. It must be a document that provides information about possible ways and forms of activity. It is very important to ensure that it is well-planned, developed and monitored.

Involved in the Green Action Plan are individual departmental action plans, which have been prepared in relation to the main goals and targets and formulated in the city's environmental policy.

As the Green Action Plan provides activities for all public entities and some framework for all business activities, we divide our programme into three parts:

- educational and promotional for public health and environment;
- city management;
- practical, physical, legal and economical tools and frames for market activities.

For the city of Kraków the basic premise of environment policy is the restructuring of the activities which cause the most negative impact on the environment.

In our opinion they are:

- the energy sector, especially the heating system, which causes soil damage, gas emissions accumulation of waste and water pollution;
- industry, with special regard to steel mill restructuring;
- transport, with noise and air pollution impacts;
- the waste disposal system, first of all an uncontrolled deposition system;
- a sewage system which was not developed properly (without waste water treatment) and that limited housing development.

The main instrument in the field of city management is the federal and local law, which can be used for the initiation of activity as well as putting restrictions on these activities.

The local authority has some competence which can be used to implement general ecological policies. This competence includes:

- physical planning
- local legislation
- authority to restrict the operation of technical installations
- financial regulations (taxes, local charges and fees)
- public budget investment and other public/private partnership and incentives.

The local services, including the health services, the environment management service and other public services, play a considerable part in the city management. Lately, the ecological aspects have appeared as an "auction card" in political life. This is a new phenomenon in our country.

An appropriate social policy should be developed and implemented, to prevent possible deterioration of the urban environment, connected with the transition to the market economy. The insufficient funding of the urban services (such as waste management, drinking-water supply, public transportation, etc.) as well as a potential increase of the poverty problem may result in acute health deterioration in selected segments of the urban population.

3. Realization and implementation

The creation of the Green Action Plan was based on strict cooperation between the municipal Strategy and Development, Health, Environment Protection and Municipal Services Departments.

The interdepartmental working group examined the issues and obstacles, and looked at each department's activity, how it impacted on Kraków's environment and how it improved the ecological situation of the city.

Then, the group prepared two documents – *Strategy* and *Corporate Action Plan*, which defined goals, objectives and detailed projects to be realized through the departments.

The Corporate Action Plan concerns such activities as:

- public awareness and cooperation with ecological organizations
- health promotion
- air pollution
- waste management
- energy
- transport
- water quality
- greening
- sewerage and sewage treatment.

The draft of Kraków's Green Action Plan is expected to be circulated widely amongst: city and state officers, aldermen, ecological organizations, academics and representatives of the public.

All these groups of people will be involved in the preparation of the final version of the Plan.

The Plan will also be submitted to the representatives of the Polish Healthy Cities Association, during the fourth National Healthy Cities Conference in Kraków (May 1995).

4. Impact

Poland is a country undergoing transition on a large scale in the areas of administration, politics and the economy, but also in people's mentality. We are

passing from a centralized state with an overall tutelage to a market orientated, democratic state of self-responsibility of individuals and local communities.

The Green Action Plan tries to encourage people to self-organize for public actions.

Evaluation:

Until now the City have launched several projects within the Green Action Plan:

· waste segregation and recycling;
· sewerage system development;
· health promotion.

The waste segregation and recycling programme has been in operation in Kraków since December 1994. Waste containers are located not only in the city centre, but also in suburban housing estates and residential quarters.

The Municipality has bought 150 containers which are used for the separation of paper, metal and glass.

What we can observe now is that the inhabitants select rubbish, signifying their growing ecological awareness as well as the success of the campaign and the programme implementation.

During the first month of the segregation experiment, 15 tons of glass, 10 tons of paper and 1 ton of metal were segregated, recovered and recycled.

The Polish problem is that such environment-friendly economic activity is treated as regular market one, so according to competition it is rather cheaper to use raw materials than recycled.

The main aim of the health promotion programme is: to increase citizens' awareness with respect to possibilities of proper influence on their own health, to shape a "healthy" life style and in the end, the improvement of Kraków's population's health status.

The methods of influence, in relation to selected groups of people, through promotional and educational actions, are as follows:

· publishing of educational papers (brochures, posters, folders, etc.) with respect to individual preventive programmes;
· cycles of lectures in Kraków's schools (for pupils, teachers and parents);
· didactic activity among the workers of health services in the city;
· organization of competitions of knowledge and competitions of fine arts in schools;
· cooperation with mass media (local press, radio and TV);
· organization of enterprises, connected with "The Anti-tobacco Day", "The Week for Heart" etc.

The main areas of activity are: toxicological prevention (CO intoxication), circulatory system diseases prevention, anti-tobacco actions, cancer prevention and the "School promoting health" programme.

Appendix

Basic data:

1. Staff: officers from the Municipal Departments:
- Strategy and Development   25
- Health   9
- Environmental Protection   22
- Municipal Services   85
  (interdepartmental working group: 15 persons)

2. 1994 budget: municipal budget (state and corporate financing excluded)
- public awareness and cooperation with
  ecological organizations   21 305 ECU
- health promotion   130 000 ECU
- air pollution   229 000 ECU
- waste management   553 508 ECU
- transport   11 510 850 ECU
- water quality   92 300 ECU
- greening   154 375 ECU
- sewerage and sewage treatment   162 500 ECU

3. Sources:

- financial: city budget, state target sources from the Ministry of Environ-
  mental Protection, The Ministry of Health, The National Environment Pro-
  tection Fund, The Voivodeship Environment Protection Fund, Eko-Fund,
  Municipal Fund and other supporting funds (Phare, etc.).
- material: municipal data base and data bases of cooperating institutions;
- personnel: municipal workers and co-workers from cooperating institutions
  (municipal services, scientific environment, etc.).

4. Key contacts:
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Krzysztof Gorlich
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Housing, Energy, Health and Poverty

(Sheffield, United Kingdom)

Geoffrey Green

The case study is of 8 municipal tower blocks of flats in a poor district of the city of Sheffield, United Kingdom. Recently 4 blocks were refurbished (at a cost of $40k per flat) with dramatic improvements in energy efficiency. The health status and degree of poverty of tenants of these improved tower blocks is contrasted with the status of tenants in 6 unimproved tower blocks.

The study covers all 5 issues referred to in the guidelines for abstracts. Our conceptual framework is shown in Diagram 1. Energy efficiency is high on the UK Government agenda following the 1992 Rio Earth Summit resolution to conserve global resources. Reduction in poverty and health gain provide the policy context in Sheffield for the municipality and district health authority.

The study uses a version of the SF36 research instrument to measure health outcomes. Poverty is defined by ability to afford the basic essentials of life including warm and dry accommodation. The study shows tenant's overall income levels constant but a rising standard of living because heating costs have fallen from 30% to 10% of income.

The study is coordinated by The Centre for Regional Economic and Social Research at Sheffield Hallam University and funded jointly by the municipality, district health authorities, the UK government's Ministry of Environment and Sheffield Insulations, a private sector manufacturer of insulation material. It will assist departments and agencies to acknowledge cross-sector benefits gained from municipal investment. The fieldwork survey was conducted in January, February and March 1995.

Housing, energy, health and poverty

This case study is of 10 municipal tower blocks of flats in a poor inner-city district of Sheffield, UK. Investment in energy efficiency has reduced poverty, improved quality of life and appears to have improved health status.

Environment and policy background

Following the 1992 Rio Earth Summit, energy efficiency is high on the UK's national agenda. In 1994 the Government asked municipalities for an energy audit of their housing stock so as to establish the potential for reducing emission of 'greenhouse' gases. The schematic diagram summarizes two other dividends flowing from improvements in energy efficiency – health gain and a reduction in poverty.

At the level of city government, the key executive agencies may agree about these linkages. A common perspective often depends on the success of the local healthy city project. Diagram 2 shows the consensus in Sheffield between municipal politicians, their executive board and the Directorate of Health Policy of

Diagram 1. Housing, energy and health
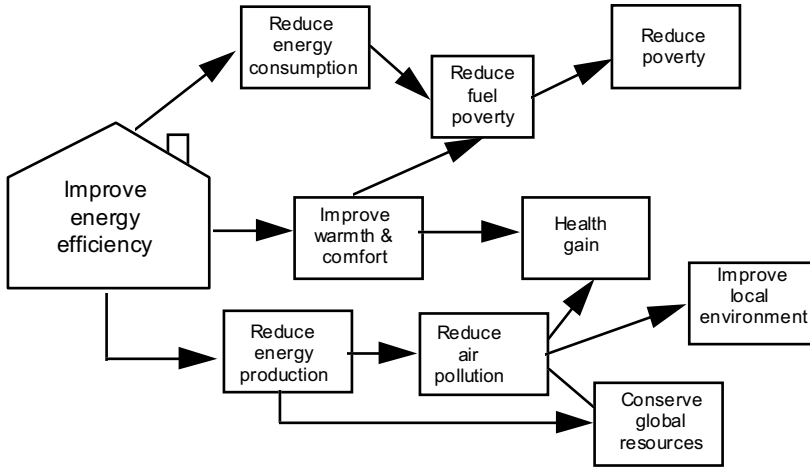
the District Health Authority. By locating the primary causes of ill health in the economic and environmental sectors, their common agenda is more radical than the UK government's (1992) *Health of the Nation* strategy.

Diagram 2.

Response to Sheffield questionnaire	DEGREE OF INFLUENCE ON HEALTH				RANK		
	VERY BIG	BIG	SMALL	NONE	REPS	EXEC	PHD
1.POVERTY					1	1	1
2.UNEMPLOYMENT					2	2	2
3.EXERCISE					6=	5	6
4.SMOKING					3=	2=	3
5.HOUSING					5	2=	4
6.AIR POLLUTION					3=	6	7
7.LOCAL DOCTORS					8	7	5
8.HOSPITALS					6=	8	8
9.REFUSE COLLECT.					9	9	9
REPS = Municipal Politicians EXEC = Municipal Chief Officers PHD = Public health Doctors - District Health Authority					1 = Most important 9 = least important		

In practice most municipalities in the UK have not taken this theoretical agenda into the mainstream activity of their executive departments because of institutional and political barriers. First is the division of political responsibility within UK cities for health and environmental issues. Municipal government has the principal competence for environmental and housing conditions. Central government has the principal competence for the health status of citizens – discharging its responsibilities via District Health Authorities. Party political differences can prevent cooperation between these levels of government. In a period of retrenchment there may also be horizontal barriers when departments focus on core activity rather than cut across boundaries. There

are many successful 'healthy city' partnerships where local agencies have agreed a broad framework for action. However it has proved difficult to incorporate health gain into the business plans of municipal housing and environmental departments. Where this has been achieved (for example in Liverpool) it is difficult to take the next step of specifying health outcome targets.

'City Health Plans' should break through barriers which prevent agencies and departments acknowledging cross-sector benefits arising from municipal investment. At the level of city governance, agencies must agree health targets, acknowledge differing competencies and resources, then move to harmonize budgets and investment plans. In 1994 the UK government moved in this direction by providing local partnerships with a special Single Regeneration Budget. However, initially this initiative is characterized by a collection of complementary local projects where the links between inputs and outputs – between costs and benefits – are compartmentalized within one sector only. Thus housing investment will improve the housing stock; better health services will deliver better health. There is 'cost–benefit' analysis but little 'cross–benefit' analysis.

A second barrier to such intersectoral planning is the limited technical knowledge about precise quantitative connections between housing, poverty and health. Though there is an increasing body of research linking poor housing, poverty and poor health, there is little evidence linking investment in the housing stock with a measurable improvement in health status. This is the focus of research undertaken early in 1995 by the Centre for Economic Regional and Social Research at Sheffield Hallam University. The hypothesis is crudely summarized in diagrams 3 and 4.

Diagram 3. Energy and Health
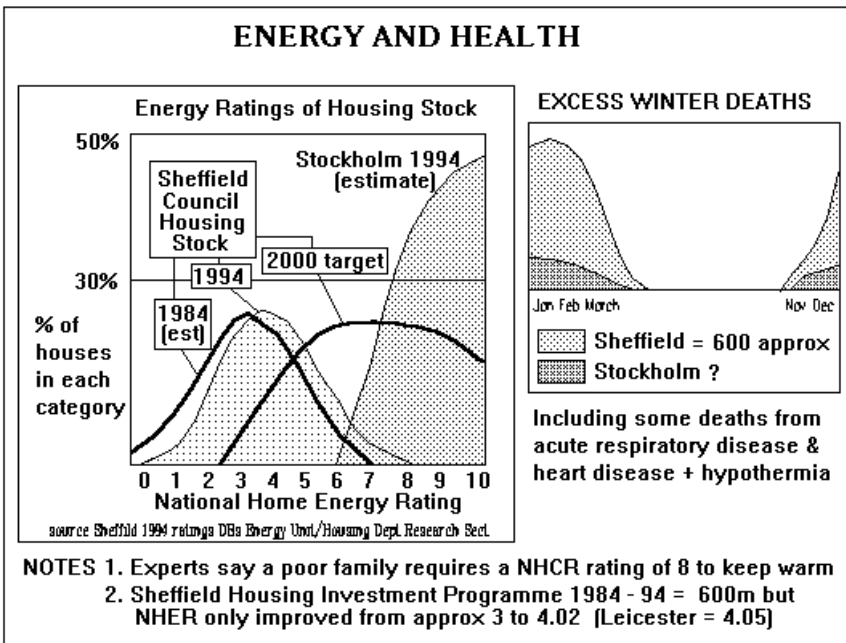
Most city municipalities in the UK own and directly manage a large housing stock. It is now largely residualized as 'social' or subsidized housing for the poor. Government restrictions have in effect limited municipalities from building new houses and redirected capital investment into improving their existing stock. There is political debate about whether housing conditions have improved over the last 20 years, with municipalities claiming an overall deterioration in support of their bid for more investment. They point to a concentration of poverty and ill health on their 'inner-city' estates which encircle the central business district.

The government, on the other hand, is pressing municipalities to demonstrate tangible benefits from their investment. Energy efficiency is now one of their output measures. Generally, municipal performance is poor. Over the last decade the municipality of Sheffield has invested over $950m (£600m) in renovating its housing stock but average energy efficiency rating on the National Home Energy Rating scale of 1 to 10 has increased only marginally from 3 to 4. Brenda Boardman, the fuel poverty expert, estimates that low income families require accommodation with a rating of 8 to live in warmth and comfort (see R. Burridge & D. Ormandy, *Unhealthy Housing: Research, Remedies and Reform*, London,1993). The critical questions are therefore, 'what is the level and optimum investment mix which would deliver this output?' and 'what is the wider impact on poverty/quality of life and health?'. Diagram 3 speculates on how a better energy efficiency profile would reduce 'excess winter deaths' – representing just the tip of an iceberg of ill health. Diagram 4 speculates how differing levels of energy efficiency are linked to variations in health status.

Diagram 4. Energy Efficiency and Health
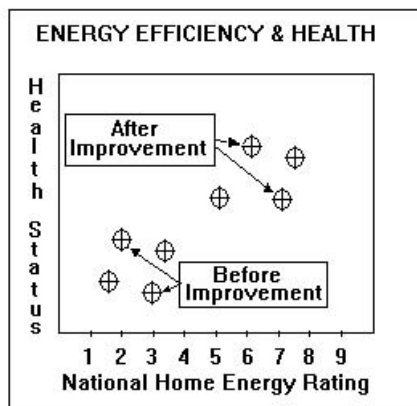
Planning and development

Netherthorpe is a poor inner-city district of Sheffield. Almost all the housing stock is managed by the municipality. Much of it is in poor condition. Much of it was built to low insulation standards in the 1960s when energy was cheap. On a hillside overlooking one of Sheffield's river valleys are seven tower blocks, each 12 stories high, each containing 48 one-bedroom flats. They are of concrete frame construction with electric heating embedded in the floors. The first occupants were a broad cross section of Sheffield's working-class population.

There were few professionals or managers, but most were employed in manual and craft work. The great majority could afford to pay the full rent and heating costs.

By the mid 1980s, a high proportion of the original tenants had retired and many new tenants were unemployed. The underfloor electric heating was dysfunctional or very expensive to run. Most residents received a subsidy to cover their rent but many could not afford to keep warm. The tenants' association campaigned to improve the heating system. Local politicians were involved. The area manager responded positively and went further – lobbying also for higher levels of insulation. There were intense negotiations between tenants and housing officers about the nature and level of planned improvements. However, the level of the municipality's mainstream capital investment programme could not cover the cost.

Then the municipality asked central government for special permission to borrow additional funds under the 'Estate Action' scheme administered by the Ministry of Environment. They presented a cost–benefit analysis of the options: for demolition, transfer of ownership, the status quo and – the tenants' preferred option – improvement. Nearly all the quantifiable benefits were narrowly defined within the housing management sector – reducing repairs, maintenance and management costs plus improving rental income. With encouragement from the Ministry and from the municipality's Design and Building Services (DBS) department, energy efficiency was included as a benefit. The Energy Unit of DBS presented the following calculations.

Average Tower Block Refurbishment

	Before	**After**
Annual Fuel Cost	$1100 (£730)	$520 (£347)
National Home Energy Rating	3.0	9.0
CO2 Emissions (tonnes/year)	9.5	3.2

Realization

Resources of $8.4m (£5.4m) were secured in 1993 to improve 4 of the 7 tower blocks at a cost of $44k (£28k) a unit. Central government approval is simply permission to borrow additional funds: all the capital costs would be funded by the municipality. The design work was undertaken by DBS. It was planned to encase each tower block in 'rockwool' insulation material with an outer skin of rainscreen cladding using an aluminium cassette type system. This would protect the old building structure from the weather and also prevent 'cold bridging' caused by the external exposure of concrete floors. Insulation would be enhanced by enclosing the open balconies with glass. The underfloor electric heating system would be replaced by a small gas-fired district central heating plant with hot water pipes feeding heat to each flat.

Henry Boot, a local building firm, won the building contract and began work in 1993 using insulation materials manufactured locally by Sheffield Insulations. Refurbishment was completed in September 1994. A second phase of building improvements to the remaining 3 tower blocks began in November 1994 and is scheduled for completion at the end of 1995 at a cost of $5.8m (£3.7m) or £26k per unit. The energy efficiency rating for a north facing property improved from 2.9 to 7.2. Tenants control their consumption of energy for heating. Tokens are purchased locally and inserted into a meter in their flat. However to account

for heat dispersed throughout the entire building, each tenant also pays a weekly standing charge of $3.0 (£1.90). To take account of the upgrading, rents have also increased from an average of $33 (£21) a week to $50 (£32) a week. However most residents are in receipt of state social security payments which covers all or most of their rent.

Impact

The refurbishment of the Hillside tower blocks is a flagship project in the North West Inner-City Action Plan for the city developed by the municipality with other key executive agencies. It may pioneer an approach to Sheffield's other 60 tower blocks and provide lessons for other cities. (Liverpool, for example, is considering the future of 56 tower blocks). Yet no overall assessment of the Hillside improvements was planned. The energy specialists were committed to monitor energy consumption but there were no firm plans to systematically measure any improvements in residents' health status and quality of life.

Early in 1995, CRESR secured the commitment of tenants, officials and politicians to evaluate these factors. The study cost $45k (£34k) funded jointly by the municipality, District Health Authority, Family Health Services Authority (which commissions services from primary health care doctors) the Ministry of Environment and Sheffield Insulations – a private company manufacturing insulation materials. To undertake the research and development work, the author gathered a research team from Sheffield Hallam University (CRESR, School of Construction, Survey and Statistical Research Unit) and the Universities of Warwick (Legal Research Institute) and Sheffield (Sheffield Centre for Health and Related Research). The research has five aims:

1. To discover linkages between improvements in the housing stock and changes in the health status and quality of life of residents;
2. To establish if improvements to the housing stock, especially energy efficiency measures, raise living standards independently of income levels;
3. To measure the extent to which health gain and improved living standards are associated with specific levels of investment in the housing stock;
4, To quantify the relationship between varying levels of energy efficiency and health status;
5. To establish whether there is a reduction in demand for health and community care services following property improvements and estimate the value of savings made by the relevant providers.

The methodology creatively combines existing survey approaches developed within separate research disciplines. At the heart of the initial study is a comparison of residents in the 4 improved 'Hillside' tower blocks with a similar group of residents in 7 unimproved tower blocks of similar construction. (Excluded from consideration in this paper is a parallel baseline survey for a longitudinal study which will follow a cohort of residents through the improvement process and provide statistically more powerful results.) A team of surveyors assessed the condition of a high proportion of the flats in each of the tower blocks and a team of interviewers questioned each household during January, February and March 1995. Some key preliminary results from the first 200 households surveyed are summarized below.

First, high-rise living, though contrary to English traditions, is now accept-able to a minority of the population. A majority of residents surveyed, even in the unimproved flats, were satisfied with their housing. However, diagram 5 shows a dramatic increase in the level of resident's satisfaction in the improved blocks.

Diagram 5. Resident's overall satisfaction with housing
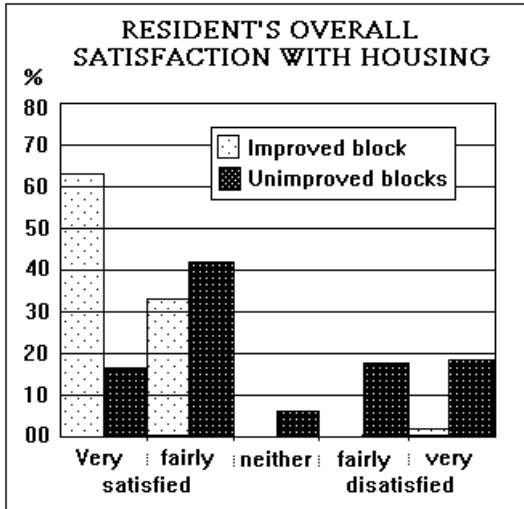
It is not difficult to discover one primary cause. Residents in the improved blocks – enjoying the benefits of an efficient heating system and high levels of insulation – report optimum levels of warmth and comfort.

These improvements in quality of life have been achieved without any in-crease in a household's overall heating costs. Even better, diagram 7 shows the weekly costs of heating the improved property is much less than the cost of attempting to heat the unimproved property. Fuel poverty here has been eradi-cated together with the associated problem of dampness.

Improvements also appear to have had a wider impact on poverty itself. Households were asked whether they could afford 23 items which the UK popu-lation perceive as the basic necessities of life. Similar questions had been asked of populations in Manchester (Manchester City Council, 1987) Liverpool (the City of Liverpool *Quality of Life Survey*, 1991) and Greenwich, London (London Borough of Greenwich, *Breadline Greenwich* Report, 1994) using methodology developed in J. Mack and S. Lansley, *Poor Britain*, London 1985 and Domino Films, LWT, *Breadline Britain*, London 1991.

Preliminary evidence (Diagram 8) from the Sheffield survey is that though overall income levels in the improved tower blocks are similar to those in the unimproved blocks (and much lower than the UK average), the proportion of households falling below a 'basic essentials' poverty line (defined as being un-able to afford at least 3 of the 23 essential items) has fallen from nearly 50% to

Diagram 6. Housing conditions
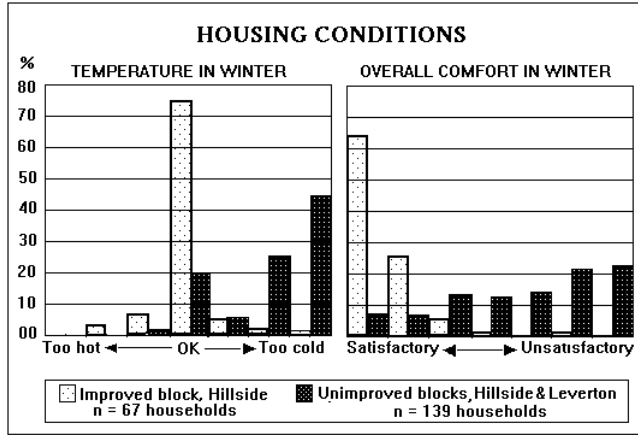
under 25%. Two of the basic essentials are adequate heating and a dry or damp-free home. Many households on the margins of poverty are pushed below the poverty line by inadequate heating (which is one of the 23 basic essentials) and by damp conditions (when damp-free conditions are another basic essential). Equally important, a reduction in heating costs will have enhanced disposable income and may have facilitated the purchase of other essentials, pushing some marginal households above the poverty line. The few higher income families not in receipt of housing benefit report that these savings on energy costs are offset by the rent rise referred to earlier.

Diagram 7. Eliminating fuel poverty
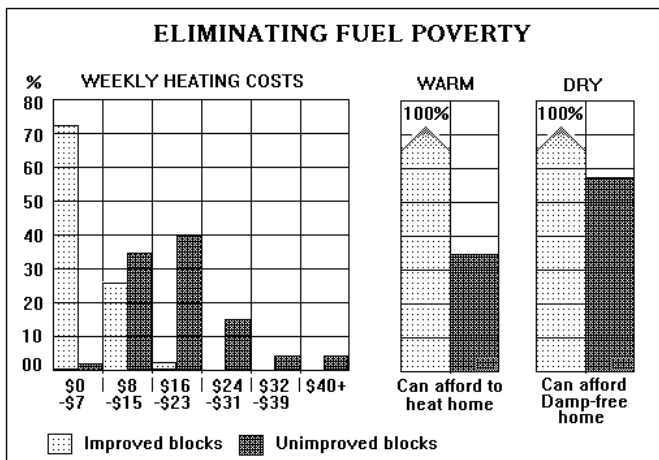
Diagram 8. Income and poverty
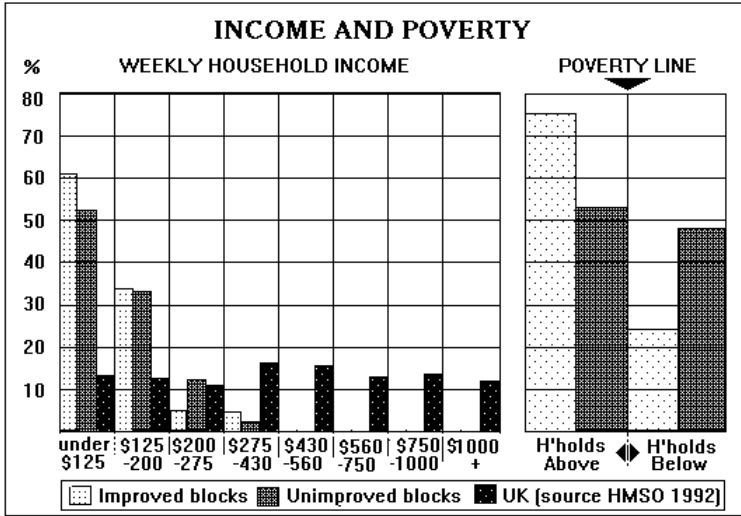
Finally, there does appear to be an impact on health status. About half the residents reported their health had improved following improvements to their property. A more reliable assessment of health outcome can be made when we analyse answers to all 36 questions in the SF36 research instrument included in the survey. The final diagram 9 summarizes the answers to just one of the 36 questions and should be treated with caution.

Diagram 9. Change in health status
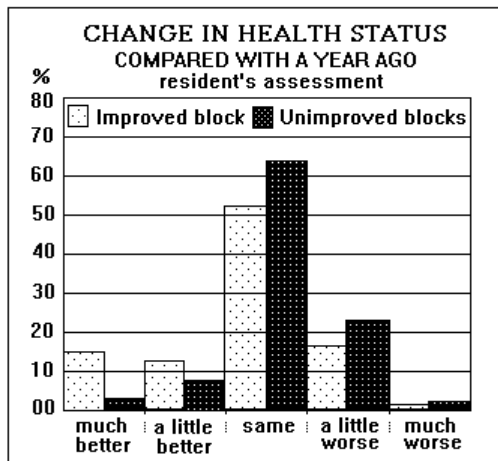
Conclusion

There are lessons from this case study for local and national governments. The geography of poverty and ill health of British cities is closer to North America than continental Europe, with concentrations in the inner city districts. UK central and city governments have sought to regenerate these areas with only limited success. Here in Sheffield is preliminary evidence of a real turn-around in fortune engineered by investment in the environment sector, with far reaching benefits for health and social security.

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A Megacity's Approach: Tokyo Healthy City

(Tokyo, Japan)

Keiko Nakamura, M.D., Ph.D.
Professor Takehito Takano, M.D., Ph.D.

Abstract

Tokyo's metropolitan government, housing a population of 12 million, recognized health promotion as an essential area to achieve a healthy society in its fundamental long-term plan The Third Long-Range Plan adopted in 1990. In accordance with that long-term plan, Tokyo Citizens' Council for Health Promotion was established in 1991 to actualize Healthy City Tokyo by developing a health-promotion movement in close cooperation with the public and private sectors in order that every citizen in Tokyo will be able to live a healthy and active life. Tripartite team work, involving citizens, administrators and academics developed cross-sectoral programmes and policies based on scientific understandings of people's health and the megacity's environment. The Action Plan for Tokyo Healthy City "Towards Healthy City Tokyo – Our Action Plan for Health Promotion" was first adopted by the Council in February 1993. This defined priority areas for actions, the roles of citizens and both private and public sectors, as well as proposing key strategies. The Action Plan encouraged studies relating to health promotion as a key strategy to effectively develop community-based plans and implement health-promotion programmes.

Graphical representations of health and its determining indicators were used to evaluate public health and urban environmental conditions. The Action Plan encouraged the use of mapping for both metropolitan and municipal governments and other sectors. This analysis, evaluating the impact of the urban environment on public health helped people from different sectors to share information. It also helped decision makers to formulate a policy beneficial to community health. The Planning and Investigation Committee of the Tokyo Citizens' Council carried out studies to develop effective health-promotion activities. A study of community-based health-promotion group activities revealed the current situation in Tokyo and suggested strategies for their further development. Another study on health-promotion efforts by the family showed the wide-ranging influence of the family's efforts and suggested key issues to enrich their activities.

Sharing of information obtained by various research efforts is important. Symposia, forums, health fairs and other opportunities were used to disseminate this information. Publications introduced examples of activities and programmes actually taking place in Tokyo were widely used in different communities to better develop their own programmes.

Challenges in a megacity require us to substantially evaluate and carry out research on human-environmental interactions and people's health behaviour. Research efforts continue to serve to help develop effective and efficient programmes for Tokyo Healthy City.

Background of Tokyo megacity

As a result of rapid urban environmental change in a megacity supported by and reliant on high technology, Tokyo has been challenged to formulate mechanisms towards achieving a healthy city. Tokyo metropolis is a self-governing unit of 12 million residents, divided into 64 local municipalities. Each municipality has its own assembly and a mayor, both elected by its citizens. The metropolitan government also has its own assembly and a governor elected by the entire voting population of Tokyo. To pursue the World Health Organization's goals of achieving "Health for All by the Year 2000", Tokyo has developed its own health promotion strategies based on our local needs and resources.

Tokyo Metropolitan Government adopted the Third Long-Range Plan in 1990. This is the fundamental long-term plan for all administrative and financial matters pertaining to the governance of Tokyo from 1991 to the year 2000. Long-term goals and principles of policy are laid out. It includes outlines of numerous specific strategies necessary to achieve those goals. Four urgent strategies and six promotional strategies are given top priority in the long-range plan. The urgent strategies are:

1. Comprehensive development of the housing policy;
2. Development of recycling-oriented urban planning;
3. Innovations to the urban traffic policy;
4. Developing infrastructure that serves community welfare.

   The promotional strategies are:

1. Defence against earthquake and disaster;
2. Lively health promotion initiatives;
3. Creation of comfortable living space;
4. Management innovations in smaller businesses;
5. Creation of the "New Tama Era";
6. Development of the "Tokyo Frontier".

Tokyo Citizens' Council for Health Promotion

Based on this recognition of the importance of health promotion, Tokyo Citizens' Council for Health Promotion was established in November 1991. This is a core organization for the 12 million population. The Governor of Tokyo Metropolis himself is a president of this Tokyo Citizens' Council. The objective of this council is clearly stated in the first article of the council's rules: "The purpose of the Tokyo Citizens' Council for Health Promotion is to actualize Healthy City Tokyo by developing a health promotion movement in close cooperation with the public and private sectors, in order that every citizen in Tokyo will be able to live a healthy and active life."

The council acted:

· to formulate the Action Plan for health promotion and its revision;
· to disseminate ideas and activities relating to health promotion and the enlightenment of the people;
· to support and coordinate health promotion activities;
· to encourage public recognition of effective health promotion activities;
· to develop other programmes designed to achieve the council's objectives.

Membership as of 20 December 1994 was 480. That broke down as follows: 110 citizens acting as community leaders for health promotion from all municipalities in Tokyo; 27 persons from academia; 48 community-based health promotion groups; 206 nongovernmental organizations, including private companies; all 64 of the municipal governments in Tokyo; 6 organizations from the national government; 7 members of the Tokyo Metropolitan Assembly; 10 officials representing different sections of the metropolitan government, the governor and a vice-governor. The following metropolitan administrative sectors are represented: the Office of Policy Planning, the Office of Information, the Bureau of General Affairs, the Bureau of Citizens and Cultural Affairs, the Bureau of Social Welfare, the Bureau of Public Health, the Bureau of Labour and Economic Affairs, the Bureau of Construction, the Bureau of Ports and Harbours and the Board of Education. The president of this council is the governor of the Tokyo metropolis. A team of citizens, administrators and academics developed a cross-sectoral programme and policies based on scientific understandings of people's health and the megacity's environment.

The Board of Permanent Executives and the Board of Executives discuss issues relating to individual programmes and their consequences. Four committees work to support the Board of Executives by conducting individual programmes. They are the Planning and Investigation Committee, the Public Relations Committee, the Organizations Committee, and the Facilities Committee. Each of these includes citizens, administrators from metropolitan and municipal governments, people from nongovernmental organizations and academics.

Towards Healthy City Tokyo – our action plan for health promotion

The action plan "Towards Healthy City Tokyo – Our Action Plan for Health Promotion" was prepared by the Drafting Committee and adopted in February 1993 at the General Assembly of the Council. The Action Plan reflects the hopes and ideas of the citizenry, as gleaned from the results of surveys addressed to all members of the council and from discussions on metropolitan and municipal collaboration which took place at the Liaison Conference for Health Promotion involving the Tokyo metropolitan government and the municipal governments in Tokyo.

Eight priority areas were identified as necessary for preparing a supportive environment for a better lifestyle for Tokyo citizens in the Action Plan.

These were to:

1. Encourage citizens to live a healthy lifestyle;
2. Encourage citizens to set aside enough leisure time and to value communication in their community;
3. Develop environments that promote the health of children;
4. Actualize healthy lives for senior citizens and people with disabilities;
5. Develop community-based health promotion organizations;
6. Prevent the spread of AIDS and eliminate societal prejudice regarding this disease;
7. Have smoke-free areas in every public place;
8. Encourage citizens to have a lifestyle that sustains the global environment.

It also defines the goals of activities from the medium to long-term perspectives, specifies the roles of administration on the one and clarifies the roles to be played by citizens, nongovernmental organizations, private companies, municipal governments and the metropolitan government on the other hand. In particular, it clarifies the collaboration to take place between those entities. In addition, the Action Plan stresses the importance of arrangements to help various self-help, community-based small-scale activities.

Four objectives were specified:

1. Implement health promotion movements so that every citizen can engage in health promotion activities appropriate to his or her age and condition;
2. Develop a social environment that supports healthy lifestyles in communities;
3. Prepare a living environment that supports health in individual communities;
4. Provide effective health-care services.

The roles of citizens, private organizations, companies, municipal and the metropolitan government in achieving individual targets and goals related to each objective were stated.

Health promotion activities for all ages
1. Health promotion in the growth period by ensuring sound physical and mental development;
2. Promotion of people who lead active and full lives by practising a purposeful and effective healthy lifestyle;
3. Health promotion of senior citizens by actualizing independent living.

Healthy lifestyles in communities
1. Health promotion at home;
2. Health promotion in communities;
3. Health promotion at the workplace;
4. Health promotion at school.

Supportive physical environment
1. Healthy and comfortable housing environment;
2. Physical environment supportive of all citizens;
3. Clean air;
4. Protection of water and green areas.

Effective health-care services
1. Medical care systems supportive of health promotion;
2. Effective health check-up systems;
3. Promotion of anti-smoking measures;
4. Actions for alcohol and drug-related problems;
5. Promotion of mental health;
6. Promotion of oral health;
7. Measures to cope with HIV issues.

Seven key strategies were proposed to effectively implement the Action Plan:

1. Encourage citizen participation and the formation of citizen's networks;
2. Encourage administrators to better cooperate with private companies and nongovernmental organizations;
3. Encourage community-based health promotion systems in every municipality;
4. Encourage multisectoral collaboration at the metropolitan government level;
5. Initiate requests for comprehensive environmental regulation by the national government;
6. Encourage citizen participation in health promotion studies;
7. Encourage the Tokyo Citizens' Council for Health Promotion to help develop health promotion plans and to strongly support the development of health promotion movements.

The Action Plan included information relating to health promotion based on substantial data and a list of health promotion projects currently being undertaken by different sections of the metropolitan government. Based on the above mentioned key strategies, various studies to analyse people's current condition of health, the city's environment and key issues to promote community actions have been carried out. In the following section, I introduce three examples of the research efforts relating to Tokyo Healthy City development.

Research efforts

For the planning and development of strategies for a healthy city, particularly in the environment of a megacity, systematic evaluation is essential to have effective and efficient programme work. We have developed an analytical method to provide baseline data and help policy development. This is a graphical representation system of health and its determining indicators named Image-Diagnosis. This system is installed in a small work station and a personal computer is being used to evaluate public health and urban environmental conditions. The Image-Diagnosis includes two functions: a mapping tool and a health level predicting tool. The mapping tool can elucidate health and environmental conditions in a city in a variety of ways and visualizes a clear picture of health and environmental conditions identified by the use of multivariate statistical procedures. The health level predicting tool of the Image-Diagnosis method was developed by using the results of analysis on the impact of the urban environment on public health. This model shows how much improvement of health will be achieved if you have a certain amount of change in health-determinants. Analyses to evaluate the impact of the urban environment on public health offered an opportunity to share information among people from different sectors and to help develop a policy beneficial to community health.

The Planning and Investigation Committee of the Tokyo Citizens' Council for Health Promotion carried out a study of community-based health promotion group activities in Tokyo. The study analysed groups' current activities, their development process, their roles in communities and problems they are facing. It aimed to provide information to work out effective programmes for further development of health promotion actions in communities. The results showed that the majority of these groups started their activities with the support of

local governments and afterwards developed their own managing mechanisms. Important factors for continuing their group activities were opportunity, places for sharing and common goals. People in a variety of groups are using the study results to develop their own programmes effectively.

The Planning and Investigation Committee of the Council carried out another study on the role of family in health promotion by analysing efforts by various families. This study focused on activities relating to physical exercise, eating habits, relaxation, and housing environment aimed at achieving better health. Most of the family recognized health as an important element in their quality of life and so put effort into health promotion activities. The family's activity developed their positive attitude toward health, increased reliance among family members and developed mutual communication with other community members.

Development of programmes

Dissemination of research results supports effective programme development. Sharing information about this research among citizens, administrators, non-governmental organizations and private companies will help collaboration for the common goals. Tokyo Citizens' Council for Health Promotion offered these opportunities in the following ways:

- Holding health fairs for citizens to participate in health promotion activities on the Metropolitan Health Day;
- Supporting a variety of events aimed at health promotion, such as open workshops for health promotion groups, a health promotion forum towards Healthy City Tokyo, a technical symposium on healthy foods and relaxation and many others;
- Publishing and distributing case study booklets by compiling community based health promotion activities in different parts of Tokyo and others.

The Tokyo Action Plan was endorsed in the regional health plans by the municipal governments. Therefore individual municipalities are now implementing their own projects to actualize the Action Plan of the Tokyo Citizens' Council. The progress of the programmes and the movement towards Healthy City Tokyo as well as people's health and urban environmental conditions is constantly evaluated. That Action Plan will be revised according to the progress of the programmes and changes in people's health condition.

Future role of research

Challenges in a megacity require us to substantially evaluate and carry out research on human–environmental interactions. To develop new ideas to improve the quality of health promotion programmes and encourage people's efforts is an important role of research. Such an example is a study on the use of multi-media technologies in a health promotion field which we have explored. In a megacity like Tokyo, the use of multi-media in the health promotion field has a positive effect on the achievement of accessibility to health care, as well as the potential to increase people's quality of lives.

Further research efforts continue to serve to help develop effective and efficient programmes for Tokyo Healthy City by providing scientific information about human–environmental interaction based on our local needs and resources.

Appendix

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Copenhagen City Health Plan

(Copenhagen, Denmark)

Jens Egsgaard

Abstract

The Copenhagen Healthy City Plan 1994–1997 which was endorsed by the Copenhagen City Council in June 1994, presents a wider commitment to prevention of diseases and health promotion in Copenhagen.

Setting out with WHO's ambitious "Health for All by the year 2000" strategy, the plan consitutes the framework for a number of preventive and health promoting initiatives in the city during the period 1994–1997 with perspectives towards the year 2000. The plan consists of targets as well as specific activites for health promotion in various areas and includes initiatives from all sectors in the city.

Introduction

The Copenhagen Healthy City Plan 1994–1997 was endorsed unanimously by the Copenhagen City Council in June 1994. Thus a much wider commitment to prevention of diseases and health promotion in Copenhagen is planned.

Taking the WHO's ambitious "Health for All by the year 2000" strategy as a starting point, the plan constitutes the framework for a number of preventive and health promoting initiatives in the city during the period 1994–1997 with perspectives towards the year 2000. The plan consists of targets as well as specific activities for health promotion in various areas.

The Copenhagen Healthy City Plan has been translated into English, and a popular version, *Healthy City Plan – in a nutshell,* has also been published. Moreover, by request of WHO, a shortened version of the plan has been translated into Russian.

Why a Healthy City Plan?

A plan must always be made to meet specific purposes according to local conditions and traditions. Therefore, different models of planning will be relevant in different cities.

The specific purposes of the Copenhagen Healthy City Plan, which seem also to be relevant to other cities, were that the plan should be instrumental in giving Copenhagen:

- common guidelines and priorities for political approval
- a clear foundation for intersectoral cooperation
- a possibility to switch from short term to longer range planning.

As a consequence, a municipal steering group with representatives from all sectors prepared a proposal for a Healthy City Plan for political decision. The Healthy City Project, based within Copenhagen Health Services, chaired the steering group and also had the secretarial function.

The level of ambition: improving health

The plan's general ambition is that it should make a difference. It should be beneficial to the health of Copenhageners. However, not everything should be included in the plan which could be relevant to the subject. For instance, work in Copenhagen on AIDS was already well on the way, so a plan could not do much to improve this. The same goes for the ambition of reducing unemployment, where the City of Copenhagen is working hard to combat unemployment, especially among the youngsters.

To have a level of ambition to make a difference within a planning period of 4 years meant that we should take up the themes where initiatives could also be beneficial to the health of citizens in the short run.

It was also an ambition to show the scope of health promotion for the city. Therefore, it was found necessary to show a broad range of initiatives in the field.

It was crucial to the relevance of the plan to make an accurate description of the health problems of the city. Therefore, much effort was put into this, including official data on health problems that put limitations on everyday activities and data on health problems which create illness, handicaps and death. To meet this end, a health profile was also made for each of the 14 districts of the city, based on a questionnaire distributed to 25 000 citizens.

The description of the health problems of Copenhagen compared to other cities in Denmark emphasizes the city's alcohol problems and other problems of substance abuse, the relatively weak social networks and the many deaths caused by among other things cancer.

Making priorities

In deciding upon the contents of the plan, five criteria were set up.

The most important criterion is the concern for important health problems in Copenhagen as mentioned above.

The second criterion was that it should be possible to do something about the health problem in question. Usually this means that the health problem should have known causes and that the cause and causality should be well documented. It is equally important to learn whether the preventive work has an effect. Therefore, systematic monitoring of national as well as international experience will be of great importance.

A third criterion is the priority given to activities consistent with health promotion work in progress. This will give greater coherence to the combined efforts and increase their impact.

A fourth and very important criterion is the attitude and interest among the citizens concerning health promotion. A positive attitude in the population is often a prior condition for health promotion. To meet this criterion, and also the principle of community participation, which is inherent in health promotion in Copenhagen, meetings were arranged in all 14 districts of Copenhagen and people were asked to come up with proposals for the Healthy City Plan.

The citizens' proposals were given as an input to the steering group before the steering group made up their minds on priorities and the citizens' proposals have made a significant impact on the Healthy City Plan.

Finally it is a criterion that the expenses of health promotion should have a reasonable relation to the size of the health problem and the expected effect of the health promoting work.

The frame of the Healthy City Plan of Copenhagen

On the basis of criteria of priority it was decided to give high priority to the following themes in the plan:

- **A number of lifestyle issues**

The main emphasis is on the prevention of health damage resulting from alcohol and tobacco smoking. In addition to this there are a number of initiatives on nutrition, exercise, accidents and unwanted pregnancy.

- **Encouraging networks**

This is a question of preventing loneliness and improving the basis for contact among the citizens of Copenhagen.

- **Road traffic and the external environment of the city**

This is a question of limiting air-pollution and noise, reducing the number of road accidents, creating a greener city and experimenting in urban ecology etc.

These themes highlight the technical challenge in health promotion. Equally important is the emphasis on how to put these health promotion themes into practical action by organizational means. In general this is at least as big a challenge for health promotion to work with organizational issues as with the technical side.

Therefore, the plan focuses on four key settings for health promotion to concentrate the city's efforts. These key settings are **the local community, schools, workplaces and the health services.**

It is an integral part of the plan that all initiatives should be evaluated.

The creation of networks is a central theme in the plan, but it is also a central concept for the development of supportive environments for other health issues. This makes social networks a cardinal point of the plan and the special developmental aspect of the plan.

See Fig. 1 for the frame of the plan.

The benefits from making a Healthy City Plan

The benefits from the Healthy City Plan have so far been very encouraging.

Health promotion by means of the plan has now got the approval of the city and is now a real part of city politics. The importance and value of this cannot be overestimated.

Secondly, the interest of the different sectors of the city has much improved. The interest goes beyond mere cooperation and also includes financial aspects and personal resources from the various sectors. This means that the phrase 'intersectoral cooperation in health promotion' is beginning to have a real meaning. Moreover, the back-up from the health services, where the Healthy City Project is based, is steadily increasing.

Fig. 1 Frame of Copenhagen Healthy City Plan

WHO's "Health for all by the year 2000" – strategy		< Targets
Intersectoral cooperation of authorities	Community participation	< Principles for the work in Copenhagen
Health profiles and other documentation		< Health problems in Copenhagen
Networks and health		< Main approach

Local communities	Workplaces	Schools	Health Services

Key settings

Alcohol	To-bacco	Nutri-tion	Physical exercise	Accidents	Abor-tions	Traffic	Urban ecology

Themes

Furthermore, making a plan for the Healthy City Project means that we have a strategy for health promotion in Copenhagen. Being a four-year strategy, it also gives a far better chance to do a good professional job than previously.

Finally, it should be mentioned that the resources allocated to the project have been significantly improved, which gives a much better basis to put political priorities into action.

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The Urban Child Project:
A friendly city for children
(Milan, Italy)

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The deterioration of children's living conditions in the urban environment is a new and alarming emergency that involves both children living in the Third World megalopolis and those living in wealthy cities of the advanced economy countries.

To investigate the situation, since 1989 UNICEF has been running the Urban Child Project focused on this problem under the ONU principles established in the Children's Rights Charter (ratified by the Italian Parliament in 1991).

The project aims to analyse and compare living conditions of children (0–17 years) in some metropolitan areas of the world, to stimulate adequate international policies to mobilize resources, to coordinate energies for the purpose of improving the quality of life for minors and to catalyse public opinion.

The work's first step is a wide investigation of conditions in Kenya, the Philippines, India, Brazil and Italy.

Italy is the only country chosen among the industrialized ones and among the four Italian cities tested, Milan represents the problems of an urban context where widespread economic welfare has on one hand solved some problems but on the other hand has caused new ones.

The Italian Institute of Innocenti of Florence, the Italian seat of the United Nations Agency for Children leads the Project's Italian section.

Three years of investigations have allowed the accumulation of strategic information and the formulation of social policies focused on strategic actions for prevention, cooperation and integration of existing resources. In all these activities the role of children is to participate as future citizens with rights.

The Milanese Administration agreed to join the Urban Child Project and found in the Healthy Cities Project and in its international and intersectoral activities the right organization to be the Project's focal point. The first step was largely dedicated to understanding the situation and collecting information by studying the quality and standards of children's lives, enquiring about policies and methods of intervention as well as available services and concrete intervention and projects.

The research was led, financed and resourced by the Institute of Innocenti with a focal person acting as coordinator. The research outcome showed Milan as a typical example of a national situation. The revealed uneasiness phenomena is typical of an advanced economy and institutional responses were found to be inadequate to face the complex problems that arose, even if we can not deny that initiatives and methods were numerous and varied. Examples of these were: the ever growing tendency to integrate institutional and non-institutional realities, the decentralization of services and the choice of setting specific interventions for specific population groups.

The main problems that affect Milan could be summarized as follows.

There are still social groups living in poverty and in backward conditions who are consequently marginalized in sociocultural terms, a marginalization often particularly severe in the case of children. Some examples: we registered a high rate of third generation immigrant children assisted by municipal services, children's exploitation by criminals is increasing every day, the rate of criminal acts committed by young nomads is very high as reported by the Public Prosecutor's Office and the number of foreigners requiring public assistance is ever increasing.

Social variations such as demographic changes, changes to the family and women's working practices are all structural changes that have turned cities into places of exchange and consumption rather than friendly human places; in this setting new situations and urgent problems are arising.

We are talking about psychosocial deprivation that represents psychosocial risk not only for children belonging to economically depressed families but also for young people in general.

In this kind of psychosocial deprivation we count: solitude, a lack of social relations, families closed in themselves, an increasing number of single parents and the scarcity of services or places for playing.

The increase of psychological problems or problems connected with cognitive activity, with consequent recourse to the appointed services, confirms the above-mentioned situation.

The inquiry into the organization of services and specific programmes for children found the following features:

- At a city level, in the planning phase as well as in the control of interventions, there is very poor coordination among different institutions related to children's problems (such as the Municipality Sections, the Local Education Authority, the Regional County, the Justice Ministry, the Local Health Units) and the other sections of the same body (in our Municipality for example, the Education Section, City Planning Section or the social services). A sectoral vision involves the risk of doubling the intervention rather than integrating all the activities and saving resources, energy and skills.

- At a city level, skills and knowledge on the conditions of minors are disjointed so there is no systematic monitoring of the situations or appropriate control of the emerging problems.

- Again at a city level, there is no methodical census of services and other opportunities that the city offers. Consequently operators do not have up to date information/maps on existing resources that could be the basic instruments for good integrated work. Citizens, on the other hand, have problems in orienting themselves in this market and in getting access to services.

- Even though an effort to change the perspective from charity to prevention has been conducted for a long time, up till now the most energy has been devoted to emergencies.

The attention is concentrated on specific population groups in desperate conditions. There is no policy to solve the problem of children's quality of life in the city. Here again we can note that prevention could be cheaper.

- The Administration planned a network to work at a decentralized level but it is still not fully operating. This means that there is a complex situation characterized by numerous and different problems that affect every case of a child in difficulty and therefore the operator working in a service cannot integrate his skills to those of a colleague working for a different body. Approaching the different aspects of the same problem separately gives rise to an evident waste of energy.

- Private and community resources are underexploited because there is no network that facilitates the collaboration with public services.

- Children's potential and the involvement of family and community are hardly appreciated as real resources for improving community living conditions. In Milan operators and technicians seldom know the methods and strategies that are commonly used to bring about participation and appreciated for their efficiency on a worldwide level.

The first phase project results were discussed at the International Meeting "Today's children – tomorrow's cities" held in Florence in October 1992. On that occasion Mayors, city-planners and social operators from different countries met to compare the polices for childhood and to find both principles and strategies useful to improve children's living conditions.

In this meeting Milan Municipality made a contribution of its technicians and expressed the administration's concern for working for children's rights as they were expressed in the ONU Chart established in 1989 at the New York convention.

At the Florence meeting an International document was written that suggests strategic ways of orienting actions aiming to help children to live in tomorrow's cities.

The innovative contents of this document are:

- a new vision of children, recognized as citizens with the right and power to improve their life in their Community;

- the Mayors as promoters and leaders of the process for improving the quality of children's lives;

- the creation of a Council for the wellbeing of minors, as an institutional reality appointed for the coordination of services and promotion of positive action for children. This Council is composed of representatives of the Municipal sections, traditionally involved in the problem, but it is also open to other sections such as city planning, city police, etc.;

- optimization of resources and investment by improving the decentralized service's network, by promoting integration between public and private bodies, by the development of all positive energies of the Community;

- activation of experimental initiatives in which children play an active part having previously learned the participation strategies as a specific learning process.

This document is the framework for the Project's second phase, the operational phase, that needs to be realized in collaboration with the local administrations.

The city of Milan is the only one chosen by the Istituto degli Innocenti/ UNICEF/ICDC as the right context to develop the further phases of the project. The city has been invited to assume the leadership of the project at a national level, beginning a process aimed at improving children's quality of life. This will be a meaningful example and a new experience for Italian cities.

The Municipality of Milan is involved in activities that imply a political commitment to an issue extremely important for the city and require a limited financial investment. The body responsible for the project at national level – Istituto degli Innocenti – participates in the initiatives by providing the city with their network of experts and with a coordinator.

The role and the tasks of the parties have been defined through an agreement between the Municipality and the Istituto degli Innocenti.

The first and essential step for the start of this phase was the establishment of the "Council for the Wellbeing of Minors" whose main objective is:

- to implement the rights of the child in terms of positive actions and concrete initiatives through the identification of the most urgent issues at local level, the re-definition of priorities, the orientation of the Administration towards ad hoc interventions.

The Council is a permanent structure. The Mayor is the reference person. Its members are technical representatives from the Municipality and the institutions, working with children or in other areas that may influence the children's life.

In Milan, the Council for the Wellbeing of Minors answers the need for inter-institutional and intersectoral coordination by allocating resources and promoting actions in response to the city's needs.

Members of the Council are not paid and each and every one of them acts on behalf of his/her institution during working hours and within his/her institutional tasks.

The Council will be in charge for three years and its members may be integrated on the basis of the activities being carried out. It is structured in specific working committees.

On the basis of the work carried out in the city of Milan, the Council for the Wellbeing of Minors, officially established on 28 November 1994, proposed to start the second phase of the Project. Advanced methodologies will be experimented with, leading to networking and management of the local services, to an emphasis on the existing community resources and to children's participation.

Initially, the experience will cover two city districts (Zona 3 and Zona 20 – Quarto Oggiaro) which were analysed during the first phase of the Project. These were selected because their socioeconomic and urban characteristics make life difficult for children. In both districts a group of promoters responsible for the initiatives was set up. These two groups, consisting of public and private operators from various institutions present in the area, are the local focal point for the Council.

The promoters' groups have the following tasks:

1. They will carry out a survey of all the official and unofficial local resources, collecting information on the type of the service, its accessibility, users addressed, opening hours, etc. and setting up a centralized data base that will be able to cover other districts and to periodically update the information gathered. On the basis of this information, a map of the two districts will be drawn up and distributed to the various services as an effective working tool.

A booklet will be prepared for each district; the information gathered will be illustrated in a simple and clear way. An adequate number of booklets will be distributed in collaboration with the District Council (Consigli di Zona).

2. They will activate innovative methodologies in networking the services, involve the existing official and unofficial resources and foster community participation (implementing initiatives that promote participation by children and by ever wider sectors of the population: parents, elderly, craftsmen, etc.)

3. They will implement initiatives where children play an active role in the analysis of issues and contexts related to their environment, in the planning of process of changes, with specific stress on the environmental issues and to the open spaces in the district.

One of these initiatives is one of participated planning, implemented with the support and collaboration of UNICEF experts. Children from primary and secondary school, in collaboration with their teachers, will:

· single out some urban open space to be reclaimed;
· prepare drawings and plastic models;
· verify feasibility together with the relevant Sectors and Institutions;
· implement changes envisaged (students will work at flower beds, green spaces, gardens, courts, etc. with the help of craftsmen, associations, family members, architects, etc. in the Districts).

4. They will set up an ecological/social centre in each district where documents on the experiences carried out will be collected, where the inhabitants of the district, technicians and politicians may start socializing and discussing the future of the district.

5. They will set up, on the occasion of a local festivity, a photographic exhibition on the works carried out by the children. The exhibition will be carried around the city and a cultural debate (at the Triennale, in collaboration with the Education and Culture Departments and the Director of the Triennale) on the city and its wellbeing will be organized.

Each group will be under a private project leader and a public one with the following tasks:

— coordination of the local promoting group consisting of the operators from the various public and private institutions;

− involvement of all the other district subjects, official and unofficial;

− involvement of the local community in the project philosophy; finding and utilizing the resources necessary to the implementation of the initiatives;

− organization of the various activities envisaged in the project in view of the involvement of children and community members;

In order to provide the conceptual and methodological tools to carry out the activities described above, a training of 5 days is foreseen for 25 participants in each one of the districts as specified in Annex "B". This Annex is an integrated part of the present decision.

The experimentation, specifically oriented on prompting participation, will last two years with the aim of spreading the experience to other districts in the city and most of all of making attention to and respect towards children a part of every political and policy decision.

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Reclaiming a deprived area in Barcelona

The case of Ciutat Vella

(Barcelona, Spain)

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Abstract

Ciutat Vella is the old and inner district of the City of Barcelona. With about 91 000 inhabitants, Ciutat Vella is historically the district with the lowest socioeconomic status. Ciutat Vella's health indicators are historically worse than those for the overall city and other districts. This is seen in general and specific mortality, life expectancy and specific rates of several diseases and prevalence of exposure to main risk factors. Unemployment, prostitution, violence, AIDS-related risk factors, drug abuse, low quality housing and sanitation problems have been big issues in this district for years.

After the restitution of democracy in Spain, the Barcelona City Council started a long term strategic plan to change this environment in a way that is absolutely in line with WHO Healthy Cities orientations. Urban policies worked for the rehabilitation of households, the solution of sanitation deficiencies, to open squares and green spaces and construct cultural amenities. Specific health programmes targeted on historically marginalized social groups addressed the main health problems. Economical and social development programmes began to help people and neighbourhood associations to increase productive and social support networks.

More than a decade on from the beginning, the experience has proved that integrated policies may be highly effective. Dr Casas will show how Ciutat Vella has changed over this period as a result of this approach and will discuss the main advantages and difficulties that have arisen from this experience.

From theory to practice
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Barcelona is a city of about 1.6 million inhabitants, with almost 100 000 living in the old district called Ciutat Vella. After years of deterioration the district became the most deprived in Barcelona. The health indicators have been more negative for this district for years, with higher mortality rates, a higher prevalence of tuberculosis and of AIDS and so on (Table 1).

Table 1. Comparative mortality rate (CMR), potential years of life lost (PYLL) and life expectation of the ten districts of Barcelona. Barcelona, 1992[1].

District	CMR	PYLL	LE
Sarrià-Sant Gervasi	84.3*	74.8*	79.38
Les Corts	90.0*	71.9*	79.18
Eixample	94.5*	88.9*	78.12
Gràcia	95.5	97.3	77.52
Horta-Guinardó	96.8	86.7*	77.96
Sant Andreu	101.5	89.6*	77.52
Nou Barris	104.5*	107.1	76.77
Sant Martí	105.3*	98.9	76.74
Sants-Montjuïc	105.9*	117.2*	75.91
Ciutat Vella	128.8*	199.1*	71.44
Total	100	100	77.2

* Statistically significant

With this evidence, shown thanks to a comprehensive local health information system that has worked in Barcelona for years (mortality statistics at the local level are available since the beginning of the century), the city council decided on a comprehensive strategy to reclaim the district, with actions ranging from urban design to social and medical programmes, with the participation of different sectors and of the community. This is one of the most ambitious programmes of a city that defined its health policy with these points:[2]

·   To know more and in greater detail;
·   To give the whole policy of the city council a perspective of health promotion;
·   To promote a cultural change in attitudes and health behaviours;
·   To adapt the health services to the population's needs;
·   To make possible the organization of the Catalan Health Service.

The objectives defined in this field by the city council were:

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[1]Barcelona Health Report 1993. Department of Public Health, Barcelona City Council, 1992.

[2]Barcelona Health Report 1991. Department of Public Health, Barcelona City Council, 1992.

- To reduce health inequalities;
- To reduce the avoidable causes of morbidity, disability and premature mortality;
- To improve the satisfaction and quality of life as well as personal relations.

And the ways to achieve these objectives proposed by the city council?

- Making health a factor in all municipal activities;
- Enabling healthier environments and behaviour;
- Promoting community participation.

Ciutat Vella: background

After some years of rehabilitation programmes and of special programmes carried out in Ciutat Vella, the Old Quarter of Barcelona, we are able to define the measures to be taken in order to stop the district's process of deterioration. The causes of deterioration range from inadequate urban planning to the lack of a normative and financial framework to maintain and improve the current buildings by the restoration and renewal of those with a more important social component, i.e. the buildings used as dwellings.

In this context, the term rehabilitation is a broad concept that takes into account both the immediate improvement of the quality of dwellings and the promotion of primary facilities and actions to improve the open spaces. The rehabilitation programme aims at restoring but preserving the intrinsic values of this zone by paying special attention to its cultural and historic values. The limited public resources necessitate a rationalisation process so that they are addressed to those areas where the need for improvement of the urban quality is clearer and where a detailed analysis of the situation guarantees the efficiency of the economic and human investment.

The downtown in Barcelona

Ciutat Vella is made up of four different quarters with their own identity, Barceloneta, Casc Antic, Gòtic, Raval and Rivera, surrounded since the 14th century by the "Third Wall". The creation of the Ciutadella Garden in the 19th century and of Barceloneta on the coast in the 18th completed the district and formed its final shape. With such a long history it is a district absolutely identified with the political, urban, cultural and social life of Barcelona.

The planned growth of the rest of Barcelona (Cerdà's Project of the Ensanche) beyond the 'Third Wall' had a negative effect in that the district experienced a chaotic period of growth. For years there has been a serious deterioration of the buildings while its population became older; there has been also a process of social deterioration and a replacement of traditional trades by other inadequate commercial activities. The result was a deterioration of downtown Barcelona.

The reform of Ciutat Vella followed different steps of urban change:

First step: The walled city. In this phase, Ciutat Vella is the whole city. During this phase the renewal of Barceloneta (1753–1759), Sant Miquel del Port Church (1755) and the Cuartel de Infantería (1764) took priority.

Second step: Urban reforms downtown. The creation of la Merce's Church (1765–1775), la Llotja (1769), Palacio Moja (1771) and la Virreina. Another important event is the application of the "Order of Carlos III" concerning cemeteries that resulted in the Sant Just Square and Sant Miquel Square and through a long and difficult process, in the improvement of the streets – with the elimination of small streets and changes to and enlargement of the rest (1802).

Third step: Opening of new streets and squares, Ferran and Princesa streets (1824), Sant Jaume Square (1823-31), the elimination of convents (1835), el Liceu de Garriga Roca (1844) and finally the Plaça Reial (1854).

Fourth Step: Urban proposals in order to adapt the old city to the rest of the new city: the Concurso de la Ciutadella (1868), el Plan Baixeras (1880), the opening of Via Laietana (1908–1911), the Darder Plan (1918) and finally the proposals of Plan Macià and GATPAC (1930–1936).

Fifth Step: The municipal action that starts with the proposals for planning that include the PERI's of Raval, the Eastern Sector and the Barceloneta (1981–1985), always emphasizing the restoration of dwellings in order to keep the residential function of Ciutat Vella. In this process its two main characteristics should be emphasized :

a. The Declaration of an Area of Integrated Rehabilitation, as the basic mechanism of management of the contradictory aspects of the revitalisation policy, requiring a balanced action between the conflicting interests and consensus between agents and institutions.

b. The programme of investments is managed through a mixed enterprise (PROCIVESA), responsible for the effective mechanism of expropriation and work on the infrastructure of the quarters, requiring a comprehensive option of balance between the complexity of the operations and, at the same time, the need for action.

The municipal intervention

In 1979, Barcelona had its first democratic City Council after 40 years of dictatorship. That meant a change to the urban policy of the past. It should be recognized that Ciutat Vella has a lot of problems difficult to solve, but that there are many positive factors that affect its possible transformation – such as its centrality (to Barcelona and Catalonia), activity (administrative/political, commercial, cultural, tourist and hotel), size and diversity, its stable population and quality of life (silence, calmness, communication).

These factors encourage the coordination of efforts in three directions to allow economic, social and urban revitalization. Since the beginning of the 80s, but mainly since 1987, a plan called "Comprehensive Plan of Transformation of Ciutat Vella" has been in place, whose objectives are:

a. To improve living conditions
b. To combat the deterioration of dwellings

c. To decrease the density of population
d. To increase the facilities of social use
e. To promote community participation
f. To attract a new population, especially young people.
g. To re-install people affected by the expropriations in the same district.

To achieve these objective the interventions have been:

· Municipal decentralization giving districts the ability to decide and to act
· Creation of structures of political and community participation
· Creation of the mixed society of Promotion Ciutat Vella (Sociedad Mixta Promoció Ciutat Vella S.A.) in order to accelerate the process of municipal intervention
· Safety and hygiene of public spaces
· Promotion of social welfare through different programmes
· Creation of facilities and socialised use
· Improvement of infrastructures, services and car parks
· Urban change with the execution of PERI's. The Plans of Inner Reform have the objective of determining the deficits of each quarter in the city and to improve the standards and facilities
· Restoration of dwellings.

Promoció Ciutat Vella S.A. is the organism of participation between the City Council and the private sector to promote the revitalization of the District through co-responsibility. The City Council delegates the management of the process in this organization in order to increase effectiveness and efficiency. It is the financial instrument that allows the city to accelerate an investment that, otherwise, would take about 15 years.

The Plans of Action of PROCIVESA for the restoration of the historic downtown consist of:

· Creating new open public spaces in the district to mitigate the deterioration of the district;
· Generating new buildings, promoted either by the public sector or by the private sector;
· Carrying out the rehabilitation of the old buildings where people affected by the urban reform will be re-installed;
· Promoting the private rehabilitation of the buildings and dwellings of Ciutat Vella;
· Carrying out public constructions that improve the communications of pedestrians or vehicles, sanitation and lighting and modernizing the supply networks of the different service companies;
· Promoting the reactivation of economic activity in Cuitat Vella through the modernization of current activities, the creation of new activities both for its population and its visitors taking into account its centrality and its historic value, stressing and promoting the values of the District to be visited.

In summary, acting as the motor of the comprehensive rehabilitation process of Ciutat Vella.

Description of the Project

The special characteristics of the District – plenty of narrow streets and small squares – permits a new urban design through the Special Plan of Inner Reform, taking into account aspects of urban environment (such as type of ground, trees, restoration of historic buildings and façades, etc.) and functional aspects (such as traffic restriction, more pedestrianised streets, paths for cyclists and so on).

The process of renewal requires the demolition of some buildings according to the Plans and the construction, currently being carried out, of dwellings to re-install the same people today living in deteriorated dwellings that either are derelict or do not have the minimum facilities. It is a process that permits the increase of green spaces.

The rehabilitation carried out during these six years has resulted in new public spaces with some pedestrianised streets. The generation of green spaces, strategically located, has reduced population density as well as permitting the building of dwellings, replacing others where the current population has been reinstated.

The whole operation consists of rehabilitating the social and urban context through regulation and urban discipline. Action has been taken to address the mix of uses of the zone and to rehabilitate some places of special architectural value.

This process taking place in Ciutat Vella could be seen as a good example and a pilot experience that follows the orientation of the Green Book of Urban Environment of the EEC. The concentration of so many different uses, the mixture of people with such different socioeconomic status, the renewal of the urban and architectural context make this experience a process of comprehensive urban renewal.

5. Other actions in Ciutat Vella

Alongside this process of urban redesign, with its consequences on the quality of life of people living in Barcelona, other social programmes have been developed in the district. In 1988 the centres of assistance for marginal people were closed and their services integrated into the normal health services in order to effectively eliminate inequalities in health services. The reform of primary care health centres has been completed in Ciutat Vella according to the Alma Ata criteria (it is the only district in Barcelona were it has been finished), so that the health services offer assistance that goes beyond the biological component of health and takes into account its social and psychological aspects.

Other programmes have been developed, some of them new experiences that have been "exported" to other parts of Catalonia and outside:

· the City Council's tuberculosis programme that operated from 1988 to 1992 is now the responsibility of the Catalan government which has taken this successful programme to other cities of the region;
· the programme of AIDS prevention (1987–1990);
· the programme of health agents for drug abusers, utilizing the commitment of ex-drug abusers acting as health agents for current addicts;
· the programme of prostitution also with the commitment of prostitutes as health agents and organizers of health workshops;
· programmes of mother and child health care;

- programme of syringe collection in the district carried out by neighbourhood associations;
- the creation of civic and sports centres;
- programmes to reduce school absenteeism (higher in this district), programmes for older people;
- the creation of coordinators of community associations.

The investment of Funds of Cohesion in the Ciutat Vella Programme:

Central Plan of Raval

According to the Regulation (CEE) 792/93 of the Council of 30 March 1993, where the financial instrument of cohesion was instituted, as well as to the Article 130 R of the Treaty about the European Union (Maastricht, 7 February 1992), the projects to be funded by the Funds of Cohesion should contribute to the achievement of the Community Objectives of Environment and therefore should be commensurate with the Fifth Programme of Environmental Action.

The objectives of the Fifth Programme of Environmental Action are reflected in the priorities of the Programme LIFE (1993), where the programmes of urban environment are considered a priority, mainly those aimed at the reduction of traffic density, the maximization of open areas and the achievement of a mixed use of urban space.

Given that the Funds of Cohesion aims at reducing social and economic inequalities (article 130 D of the Treaty of Maastricht) by financing projects in the sectors of infrastructure, transportation and environment where there are structural deficiencies and limited economic resources, the present project is a fulfilment of those objectives.

Quality of life in the urban environment is affected by aspects of urban mobility and its consequences (traffic jams, pollution, noise, etc.). It is also affected by other aspects such as the lack of green spaces that could emerge if old constructions were demolished. It is also important to build new dwellings; to increase diversity and the density of uses in the same space as a guarantee of stability and the reduction of marginalization; to achieve an improvement in organization and in the complexity of social and economic relations.

The programme in the centre of the Raval, part of the project of revitalizing the downtown of Barcelona, could be applied in other historic centres of Spain. It emphasizes three aspects: a new balance in the mobility of people and energy, a renewal of the urban context without driving out people currently living there and a pioneering mixture and diversity of urban uses in a confined place.

The principles of the reduction of inequalities, community participation and collaboration between different sectors, both public and private, have been in the spirit of this project. So far, after six years, the public administrations have already invested 81 thousand million pesetas (it is probably the most ambitious project of this kind in Europe) and now it has received funds from the Funds of Cohesions, making it one of the examples to be studied when planning urban changes in other parts of Spain or of the rest of Europe.

Final remarks

We would emphasize the need for the commitment of the municipal administration as the motor to carry out actions such as the one described here and as the guarantee of the continuity needed to achieve a definite change. Actions of this kind need more than the hopes that sometimes characterize health promotion strategies that do not plan in the long term, that are based on unreasonable expectations and often come to a halt due to lack of resources, having created false expectations among the community.

This programme shows how health promotion can and must go beyond "ideas". During the past 10 years there has been an important development of the theoretical body of health promotion (we are talking now about the "New Public Health") but perhaps there is now a loss of credibility of health promotion because of the lack, or at least the scarcity, of practical outcomes. The "New Public Health" cannot be built only on theories and bureaucratic organizations. Efforts should be made to show impact if we aim at putting health on the agenda of politicians or citizens who are not used to health issues and are not sensitive to them. Our experience is a good example of an intervention that has showed results, thus contributing to the sensitisation and commitment of sectors other than those related to health and of citizens who have observed how their lives can be changed by an intervention launched by the municipal administration.

The reorientation of municipal health services

(Madrid, Spain)

Dr Simon Viñals
Mr J. Ignacio Echániz
Mr Jesús Bengoechea

Introduction

Many **Public Institutions** with a long history are subject to their own rules, the object of which is self-perpetuation – which does not always coincide with the needs of the citizens they should serve.

Over the years rules, restrictions and paperwork have been created, becoming sometimes like the trees that do not let us see the forest, making the bureaucratic organization itself believe that its purpose is to comply with them – and the citizens are but an annoyance. I am, of course, exaggerating but there is some truth underlying these statements.

These organizations were created to carry out a particular function in a **stable environment. Today's society has changed** radically and the environment is not merely troubled but seems to be getting so more and more.

Our organizations and society as a whole, developed by **specializing** their tasks and therefore their workers.

Since in our society we can see, more and more clearly, the need for many specialized tasks disappearing and these tasks being substituted by others, solutions adapted to new technology or to new demands or interests have to be found.

Organizations must grant themselves the flexibility required to adjust continuously to their environment and must also grant their workers the adaptability required to be useful, efficient and effective.

In this paper we are going to try to present our comments on the best solutions we have found to the problem of giving health services a new direction. We hope the reflection and the exchange of opinions will be useful to all of us.

The special situation of municipalities

The **smaller size** of local administrations and their habit of carrying out actions make it easier for them to achieve a higher level of flexibility.

Their **restricted geographical scope** makes it easier for them to obtain a deeper knowledge of the problems and the implications of their possible solutions, given their proximity to their citizens' world.

They must make the most of this **privileged situation** to satisfy their citizens' needs, either developing their own competencies or complementing those of other institutions – where competencies are shared – making use of their greater adaptability.

Strategic planning

Clearly it is essential to have the information required in order to **analyse the environment**, the current unmet needs and to explore the possibilities each organization has to serve those needs with the resources available to them: situation diagnoses, health diagnoses, health surveys, etc.

All of us also agree that, based on that information, we must establish **guidelines for action and their key or strategic objectives: Strategic Planning.**

Some people have the skill of detecting, with very little effort, the weak points and the strong points of an organization, as well as the ways to minimize the former and develop and make the most of the latter. Some others require a deep and thorough analysis, using the tools they have available, in order to reach those same conclusions and yet some others are unable to make out, in a difficult situation, whether a particular feature is an asset or a liability.

In any of these three scenarios, we believe that the secret of a good manager lies in being able to open up perspectives for analysis and solutions, fostering involvement as much as possible, while, at the same time, selecting the people with the most highly developed analytical skills – something deeply related to "common sense".

Although it may not seem so, and notwithstanding the fact that it is essential in order to avoid serious deviations, strategic planning is not too difficult to develop; it requires a good **information base and strict methodology.** We have had the opportunity to experience how, if these two requirements are met, various groups at different professionals levels, with good information and a correct orientation, reach very similar conclusions.

We have seen how, in short periods of time, **with clear guidelines and objectives, a good propagation of information and the proper involvement** of the people who are going to carry out the plan, this plan can change an organization's "culture" and can coordinate efforts in a progressive way with surprisingly little difficulty.

We agree with the majority that, if those in charge of an organization do not have the time or skills required to carry out a particular activity, they should subcontract it or look for the right people to take care of it, but the activity should never be avoided.

Even if it is subcontracted, it must be developed in a **very participative way** in order to obtain the maximum involvement from those who will ultimately carry it out. It is our impression that a plan generally loses a large part of its usefulness when it is developed by isolated elites or groups foreign to the organization. The decisions taken will not be driven by the plan, but by other extraneous reasons.

When a plan is drafted with an excessively long term in mind, mistakes become too numerous, because reality is **continuously evolving** and information is never perfect.

We believe that, nowadays, service management should grant organizations the capacity to evolve quickly; something which is not achieved just with words, but also with a **constant surveillance of the environment** and of the new needs detected, as well as with the implementation of changes as these needs come up, until the workers themselves adapt to the culture of constant evolution.

Participation

Most health services are carried out through a **relationship between the user and the health workers**. The quality of the whole depends on the addition of many individual relationships. If professionals decide not to offer what managers require of them, they will not do it.

So, to obtain the involvement of the workers it is essential for them to be kept **informed** and to feel more motivated by the decisions that affect their level; then we can make the most of having many people **contributing to the designs**.

We believe that not to offer participation in this sector would be, quite simply, a mistake. It is essential to handle workers' motivation with kid gloves and this is one of the most useful devices.

We understand participation as **the design and development of channels to enable and stimulate any worker to express his or her opinion and to present suggestions to improve the actions he carries out, with the guarantee that these suggestions will receive an answer from the people they were addressed to.**

Participation **is not easy** to achieve and requires constant and exquisite care in order to be maintained. Even if, at the beginning, the staff may seem reluctant to participate and even if the initial efforts not to forget this principle may seem excessive, participation offers the organization a wonderful dynamism, at low cost.

The design of the organization

Once the strategic framework has been established – always following the conventional process – we must now define the **actions** that will be carried out to implement it, the most suitable **structure** to fulfil them and the **information channels** required for the whole unit to operate efficiently.

Although this is the order that is usually established – functions, structure and channels – these elements cannot be separated neither at the design nor at the implementation stage; **they are so closely linked that their design and implementation must be simultaneous.**

It might seem that we should think first of the "what" (actions) and then of the "how" (structure and channels) and no one can argue against this principle.

In order to start designing an organization, the first thing is, naturally, the "**what**" and then the "**how**", but then we must go back to the more specific "**whats**" and to their corresponding "**hows**", and so on and so forth.

It is also essential to find **new approaches** to the first "**whats" and "hows**" in the light of a more comprehensive view than the one that was achieved with the first analysis; thus, at the end, **the whole unit becomes indivisible and must be contemplated and implemented as such.**

As for the **structure of the organization**, in the health sector professional bureaucracy is a solution that has worked very well for decades, and one that would be difficult to replace. Nevertheless, supplying it with structural innovations to make it more dynamic and comprehensive is a challenge to any manager.

It is essential to count on a good design of the **Information Channels** required for the whole organization to work in a coordinated manner, striving to

reach the objectives of the whole, rather than those of the parts; in other words, the functional structure.

We will stress the **horizontal and transversal channels** for their importance as participative devices and therefore, useful providers of dynamism. By horizontal channels we mean both a good protocol drafted by a group of professionals in representation of the basis, as well as an open forum to discuss a particular action; a "task force" with a specific purpose and a time frame for it, as well as a channel permanently open for professionals to present new project or users illustrative suggestions.

A **good design and a patient implementation** of these linking elements are necessary for our specific service sector. Given the fact that health professionals are used to using some of these channels (congresses, clinical sessions, etc.) their implementation is relatively easy. However, we must arrange them and increase their power, as they are very helpful management tools.

The required depth of the changes

We agree with the advocates of **re-engineering** that **changes should be approached with determination and in depth**. Every one of the processes carried out by the organization and coming from previous stages must be thoroughly revised to adapt it to its new function; the argument "it has always been done like that, and it always will" should be banished.

However, the elements or functions of the organization which are its **strong points** or assets should be maintained, **strengthening** them as much as possible to turn them into the seed for the new era.

We are convinced that it is essential to **revise processes constantly** in order to improve their efficiency; not just because this improves their **profitability**, but because it forces the organization to be more **flexible** to correct the deviations detected without the traumas that appear when they become habitual. On many occasions, the most sensible thing will be to **implement changes gradually**, but this does not mean these changes should be less thorough or quick.

The process of the change

Adapting an organization to its new tasks and to improve its former ones is a process that causes **uncertainty and anxiety in its workers**. This negative side effect could have some positive ones as a stimulus, if it is properly directed and for a short period of time, but should be **minimized, given its costs**.

We believe that the process of change should be based on three **basic principles: maintaining** the old, useful activity; **designing** the new activity in a strict manner, and **training** specifically for the new tasks.

The process of change is a **critical** moment for its success of failure and therefore it must be **planned and a functional organization must be designed to implement it**, while at the same time it must be endowed with an **open and flexible** spirit to allow for constant adaptation thanks to the new information.

Specific **Task Forces** set up to design or re-engineer tasks or processes and **made up of the workers who will then have to carry them out**, have turned out to be very useful, in our experience. Not only do they encourage

participation, but they also help to spread information, reduce uncertainty, increase the feeling of involvement and add to the final product.

Naturally, we believe they require **clear guidelines and a permanent demand for rigour**. They should also be open, with clear protocols and suggestions, to contributions from the rest of the people who are going to be ultimately involved in the task.

These tools, used for the change, can **later be used** in a continuous manner (although not excessively, given their costs) to maintain a constant assessment of the processes and to re-engineer the activities – given the fact that we have learned more about them through their implementation, at the same time keeping the flexibility of the structure.

The search for a **leader and a management team** able to develop the process of change, with clear ideas and with enough perseverance and skills, is the first task to be carried out and not always an easy one. However, it is, quite likely, not as difficult as we think; we are surrounded by very able people.

Coordination

In our dynamic and complex environment it is essential to look for **allies with common or complementary objectives** in any sector and especially in the public one.

We view the coordination process as a **complex managerial challenge** that cannot be avoided. Of course, it is essential to prepare the negotiation, **knowing what we must defend at all costs and trying to be flexible on other fronts.**

One the coordination agreement has been reached, the most complex process starts: the **implementation of the agreements**. When these agreements refer to a simple subject, the process becomes easier, but in the case of large organizations with many peripheral centres it is impossible to adapt the coordination to the real situation in every area, while, at the same time, respecting the guidelines. It is also essential to maintain **a balance between stimulus, delegation, participation and control**, which is sometimes rather difficult.

Although it has not been sufficiently tested, we believe it could be useful to create a task force **specifically in charge of stimulating, developing and assessing the external coordination.**

Conclusions

It is difficult to state the conclusions of such a general and brief paper, since the paper itself is a summary of what we take to be the essential ideas.

In a society like ours, **reorientation or change is not just a sporadic need for many organizations, but they should also be provided with assessment and change tools, to improve the process.**

In the municipal health sector, the permanent struggle for **flexibility, participation and coordination** are basic principles for the process.

The search **for the right information, the strategic planning, the re-engineering of the organization and its processes, the planning of change itself and the selection of the right people are the key tools.**

We believe that clear ideas, an open approach and the permanent demand for rigour should govern decisions.

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Implementation of a new public health structure in Madrid

(Madrid, Spain)

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Keywords

Strategic plan. Flexibility. Participation. Coordination. United efforts. Matrix structure. Programme Managers. Horizontal channels. Decentralization. Central Service.

Summary

New legislation and the environment forced us to undertake a radical change in the strategy of action of the Madrid City Council Health Department. We had to design our tasks so that, as far as possible, they met our citizens' unsatisfied needs. We focused our activity on the development of preventative and health promotion programmes.

With the spirit of complementing the job which was the legal concern of other institutions, we were forced to endow our new organization with sufficient flexibility to adapt itself constantly to a changing environment, as well as with processes and attitudes which helped permanent coordination between the Council and other institutions, acting where possible as a catalyst of new coordinated activities which could only be tackled with the resources of different institutions.

At the same time, endeavours had to be unified in all geographical areas where the Plan was to be executed, as a crucial factor determining joint success. The search for mechanisms of motivation was thus essential, as was a change in the culture of the organization.

In order to implement the strategy adopted, it was imperative to make radical changes in the organization and management processes.

The tools which have proved to be most useful are the following:

- The Strategic Plan for the Health Department;
- The almost total redistribution of workers in order to make abilities fit new tasks;
- A permanent pursuit of the organization's participation in decision-making which affects them, together with an adequate delegation of duties and responsibilities;
- The polyvalency of employees, supported by a permanent training system, as a challenge for the management of every implementation/geographical centre;
- The matrix structure of the organization, with persons in charge of geographical areas on the one hand and those in charge of the programmes of action on the other;

- The Central Services, when we felt the necessity to achieve an efficient minimum size for a given activity;
- The creation of information channels, putting the emphasis on developing horizontal ones which help communicate information and the consequent unity of efforts;
- Intra- and inter-institutional coordination.

Background

Before 1989, the law obliged Councils in Spain to develop help and preventative activity for those inhabitants who had few economic resources and lacked health (public welfare) cover and also for emergency services.

From that time onwards, regional and national governments have progressively undertaken actions to provide a health service for the whole population, without discriminating whether people work or not, or have insufficient funds or not.
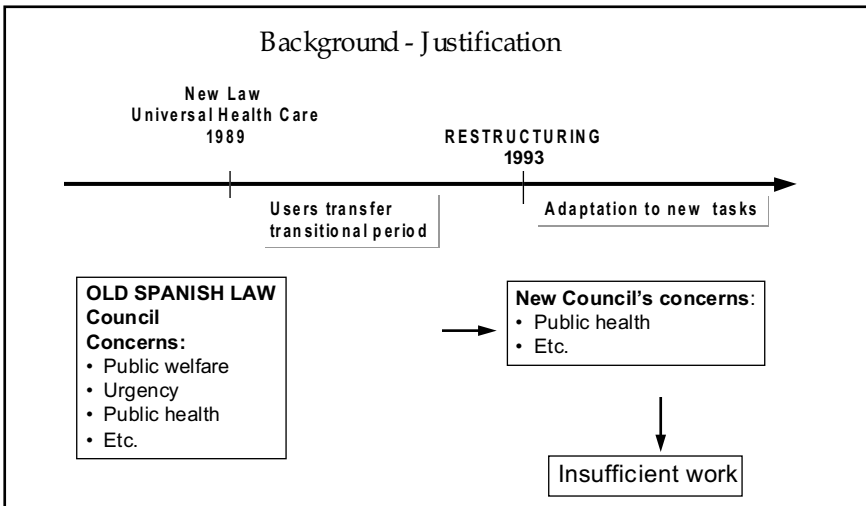
Egalitarian as these measures were, they left the Madrid City Council Health Department without sufficient work. This department was made up of G.P.s, specialist doctors, nurses, midwives, physiotherapists, social workers and auxiliary staff: 1140 professional persons in 28 centres distributed throughout the city.

Meanwhile, the general health services in Madrid, with their new workload, were incapable of offering sufficient preventative and health promotion services to our citizens, creating waiting lists for surgery and for complementary operations and unable to cover the special needs of geriatrics, whilst at the same time a variety of circumstances inhibited the integration of our services into the general network.

At the end of 1992, with no possibility of integration until at least 1995 and with services being given to those parts of the population who were not covered for special circumstances (those marginalized people who have their rights but

Previous Situation

RESOURCES:

28 Centres
1140 Workers

• General practitioners
• Specialist doctors
• Nurses
• Midwives
• Physiotherapists
• Social workers
• Auxiliary staff

NEEDS NOT COVERED
by the general system
but WHICH COULD BE
TACKLED:

• Waiting lists for surgery
• Geriatric services
• Urgency services
• Prevention and health
  promotion services
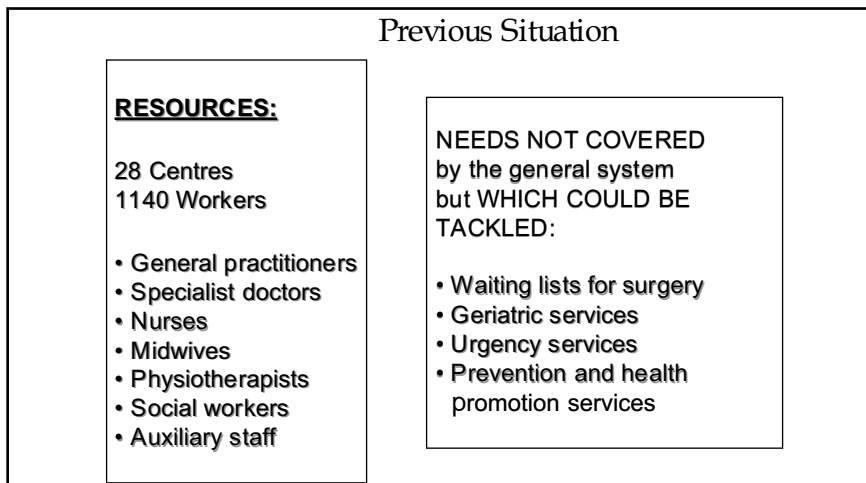
do not use them and illegal immigrants), the Municipal Government took the decision to redirect the services and seek their exploitation in health areas.

In 1993 a new management team was appointed with the task of reorganizing the services in such a way that they covered, wherever possible, the needs of the people of Madrid which were not guaranteed by the general system.

This legal change did not affect environmental, social, urbanistic, health inspection and consumption services.

Preliminary steps

The first task of the new team was to make an **analysis of the situation**, from which it became clear that there was a need to re-structure our services, indicating that preventative and health promotion programmes would become of utmost importance. These shall be focused on below.

Immediately after, the **Strategic Plan** was designed, which clearly explained the new framework of action to the organization and the citizens, plus its aims, strategic activities and the first action programmes.

The **basic principles** of the same were the seeking out of similar activities in other institutions in **coordination** with them; the **open nature** of the Plan; the **management by objectives** and the constant search for both **participation** and **flexibility** in the organization, so that it might become permanently adapted to its environment.

Once the plan had been drawn up and at the same time as the process of change of the organization's culture was initiated, participation was fostered through discussion and proposals to enrich the initial design, something which has been maintained up until now.

On this basis, we designed a **new organizational structure** which was capable of covering both the functions outlined in the plan and the necessary information channels for its development.

Professional profiles were defined for the different jobs which required special abilities and an **examination** for the adjudication of posts in the new structure was initiated.

Preliminary steps

• ANALYSIS OF THE SITUATION
• DESIGN STRATEGIC PLAN
   Basic Principles:
      – Complementing activities with other institutions
      – Coordination
      – Open nature of the plan
      – Management by objectives
      – Flexibility
      – Participation

• NEW ORGANIZATIONAL STRUCTURE.
• DEFINITION OF PROFESSIONAL PROFILES
   Examination for the awarding of posts

Managers were appointed first and whilst the other jobs were being developed, specific training was given to the future heads (management by objectives, solutions for the difficult coordination of a matrix, information channels, etc.)

Implementation

Our original structure was a bureaucracy. We have given a matrix with three dimensions to the new design.

There are **18 centres** distributed throughout Madrid and only 13 heads. The head of each centre undertakes maintenance, internal coordination of the work of the centre and coordination with other institutions in his/her particular geographical area. He/she is responsible for between **35 and 45 workers who carry out between 15 and 17 different programmes.**

Their job is a difficult one. It would be impossible to attempt to have a deep knowledge of each and every one of the programmes undertaken.

The solution: agreement is made between the workers as to which programme they will be responsible for.

Implementation 1

Many Centres
   • Common programmes
   • Importance of joint effort

Many programmes in each centre
   • Only one head
   • Many workers

Management was impossible with such a simple structure!

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┌──────────────────────────────────────────────────────────────┐
│        ┌──────────────────────────────────────┐              │
│        │         Implementation 2             │              │
│        │         Functions.                   │              │
│   ┌────┴─────────────────────────┐            │              │
│   │ Health Centres:              │            │              │
│   │ • Implementation of programmes            │              │
│   │ • Coordination in the geographic area     │              │
│   │        ┌─────────────────────┴──────────────────┐       │
│   │        │ Programme Managers:                     │       │
│   │        │ • Guaranteeing appropriate scientific and│      │
│   │        │   technical resources                   │       │
│   │        │ • Promoting programmes                  │       │
│   │   ┌────┴──────────────────────┐ • Coordination in Madrid │
│   │   │ Central Services:         │ • Evaluation             │
│   └───┤ • Supporting centres and/or programmes  │            │
│       └─────────────────────────────────────────┘            │
└──────────────────────────────────────────────────────────────┘
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Each person will thus be charged with internal and external coordination of a specific activity or programme (with other geographical areas and other institutions) under the supervision of the corresponding head.

If each of the centres had to design the activity and protocol for each of the programmes and coordinate with other geographical areas, they would have practically no time left to implement the task (coordination with other institutions and work with the population).

Moreover, it is essential that there be a **joint effort** from all geographical areas, not only to be more effective and efficient as a whole but also to be able to evaluate the actions taken.

The **Section of Programmes and other central units** has been created for this purpose and it offers its services to all centres and/or all programmes.

A vertical bureaucratic structure would mean that a significant part of the conflicts produced between both sections would have to be judged by the Head of Department, which would not only be a hindrance to everyone but would prevent him or her from fulfilling his/her own obligations.

The solution adopted:
*   Develop a highly participatory matrix structure
*   High levels of delegation for decision making
*   Some very developed and fluid horizontal information channels.

The Section of Programmes, with its different **Programme Managers**, is responsible for promoting programmes, guaranteeing appropriate scientific and technical meticulousness of all activities, designing the contents of specific training, achieving combined efforts by developing horizontal channels of coordination, evaluating each process and encouraging corrections where needed.

The **matrix** has begun to hold its own. Each centre has a head, responsible for internal organization and several workers who are responsible for coordinating the different programmes in the centre and who are the external intermediaries for the same. Each programme has a team responsible in the Section of Programmes which supports the workers of the centres maintaining the unit in the joint effort.

All matrix management has its conflicts, since the heads of the centres seek the greatest autonomy possible, whist the programme managers are each fighting for their own programme. It is a difficult role for both, but given the enthusiasm of the workers of the centres to make joint decisions and offering them more support than control, a harmonious point of balance may be arrived at.
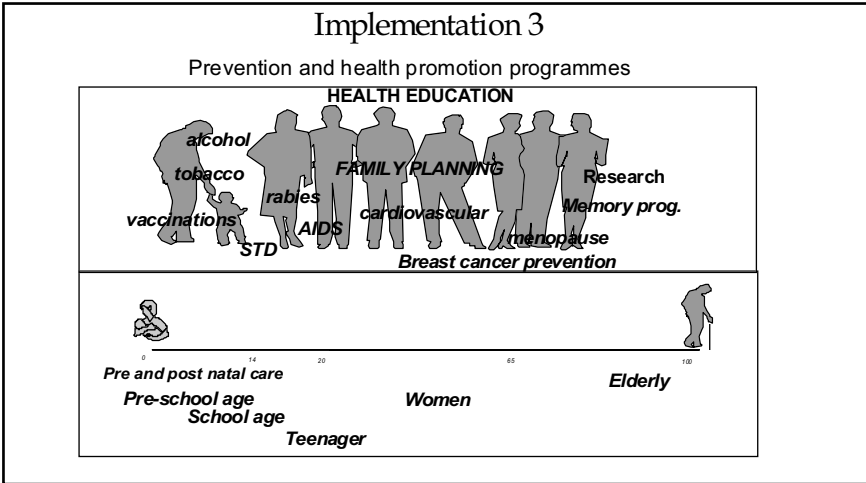
The solution again: the HORIZONTAL CHANNELS AND PARTICI-PATION.

There is a third level in the matrix which complicates it, although it does not cause any additional management problems as it only offers help whilst requiring nothing in exchange: these are the **Central Services**, created for those activities for which each centre cannot achieve sufficient scale. These are:

- The clinical analysis laboratory, which is at the service of the centres;
- The School of Health, which gives support to the programme managers in order to maintain suitable training of professionals;
- The Epidemiology, Statistical and Information Unit, which becomes of great significance as in any other process of re-structuring and offers support throughout the organization;
- The quality control unit;
- Centralized Control of purchase with the Central Store, the nucleus of computer programmed analytical accountancy.

Implementation 5

Health Department

Central Services

Health Centres

Collision of interests

Programme Managers
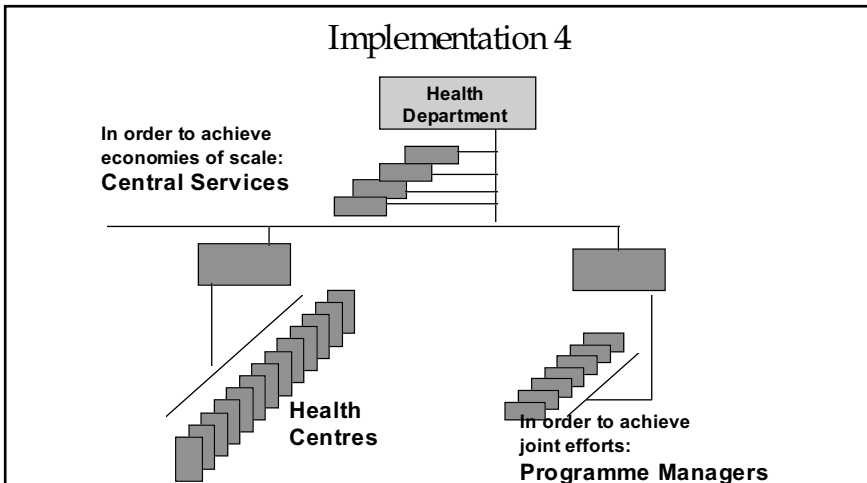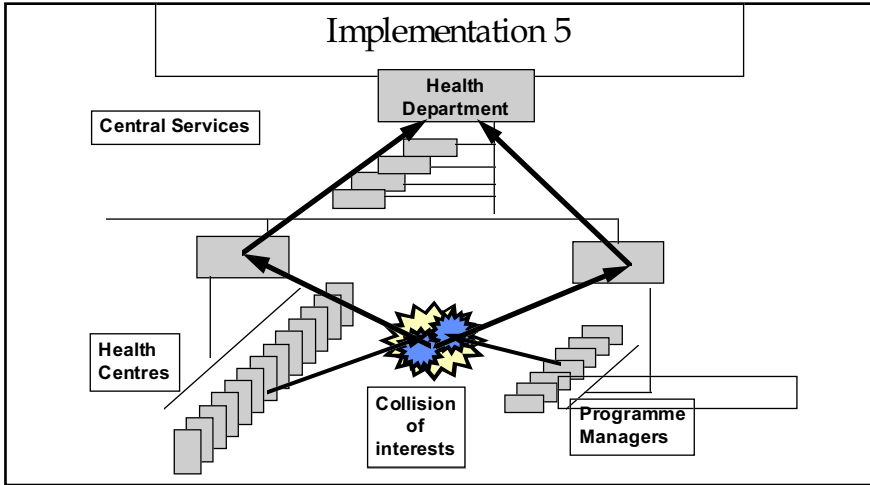
- Administrative Control of personnel.

 This decentralization of decision-making and responsibilities and its distribution throughout the structure demands clear principles of action in order to function correctly and these are undertaken by the different components of the organization, which in turn requires participation and coordination.

 Participation, for us, means creating channels to allow workers on different levels to collaborate actively in decision-making which affects their activity. This is a fundamental mechanism of motivation for professionals. It is closely linked with coordination as a mechanism for development and its constructive nature must be defended.

 In our development, **the organization of internal coordination is very similar to that of the external one and has three levels:**

Implementation 6

Health Department

Central Services

SOLUTION:
• Horizontal information channels

• Delegation of duties and responsibilities

Health Centres

Programme Managers

Implementation 7
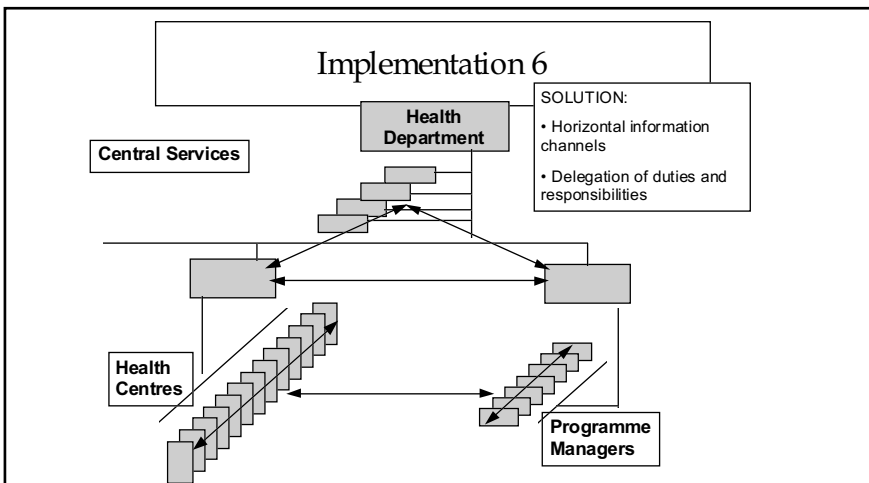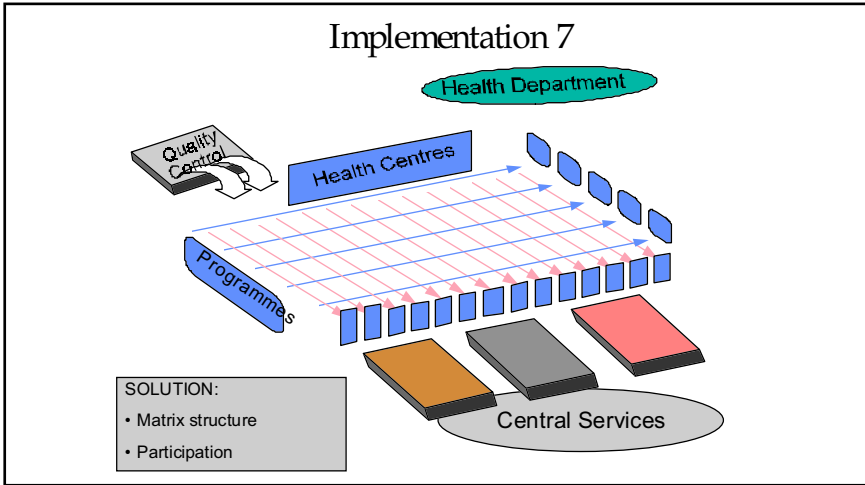
- · The first are the highest levels established:
  - – The general priorities within the organization and their level is evaluated;
  - – The framework of coordination with other institutions.
- · The second consists of:
  - – Working meetings between centre managers and programme managers;
  - – Working meetings of centre managers with the geographic heads of other institutions to adapt the main guidelines for action to the needs of each district.
- · The third is developed according to the organization:
  - – The persons responsible for each programme of the centres with the Programme Manager and his/her team, mainly to coordinate implementation;
  - – The workers of each centre with those of other institutions, with the same end.

Internal discussion is taking place about the **costs of so much coordination**, which occupies one working day per month (almost as much as training) for base workers and may increase up to 50% of the working day for the highest levels or for those people who are most committed to that task. Our opinion is that it is essential and that the benefits, together with the economies made with central services more than compensate for this.

Implementation of the change

Once all the new jobs were engaged and the framework of action defined, we found ourselves in a situation in which the work left over from past times only occupied 40% of the working day. Moreover, it was not equally distributed while one of our principles was to **preserve fairness.**

We needed to redirect programmes which had already been carried out to obtain greater efficacy and develop new programmes which, although their health service use was clear and well documented, were not being implemented by other institutions or had only been partially introduced. In all these cases close collaboration was essential.

Implementation 8

SOLUTION:

• Matrix structure oriented to common objectives
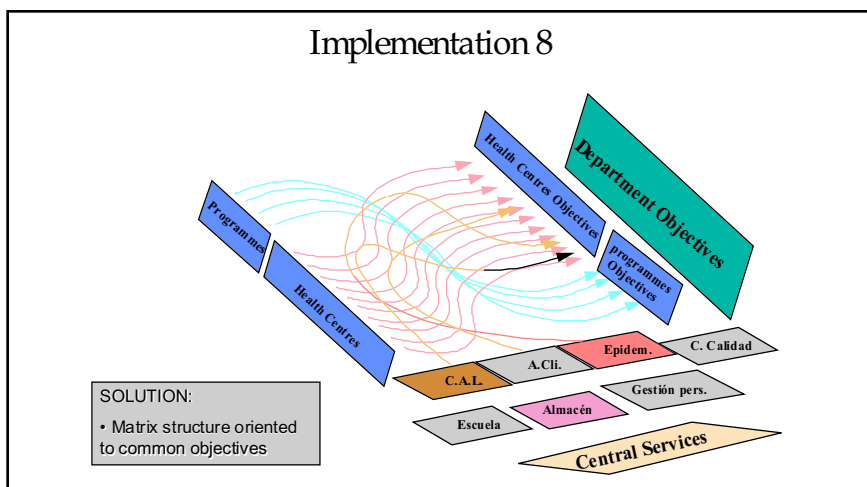
The Programme Managers had to coordinate the design of the same and this was a task for more people than were available in their units. We had more than sufficient numbers in the centres and it was essential to accustom members of the Department to participating until this became a habit in our culture.

The solution which fitted together all the pieces was obvious. The centres maintained their activity whilst their workers spent some or all of their time in designing the different programmes and training courses were progressively developed and adapted to pre-existing abilities.

The only people to object were the Centre managers who protested that they were left without resources. Apart from this the design functioned very well and a participatory system was established which, with a few slight alterations, has remained.

Implementation 9

Health Department

Working groups for each programme
. Distribution of work in each centre
. Participation in decision-making
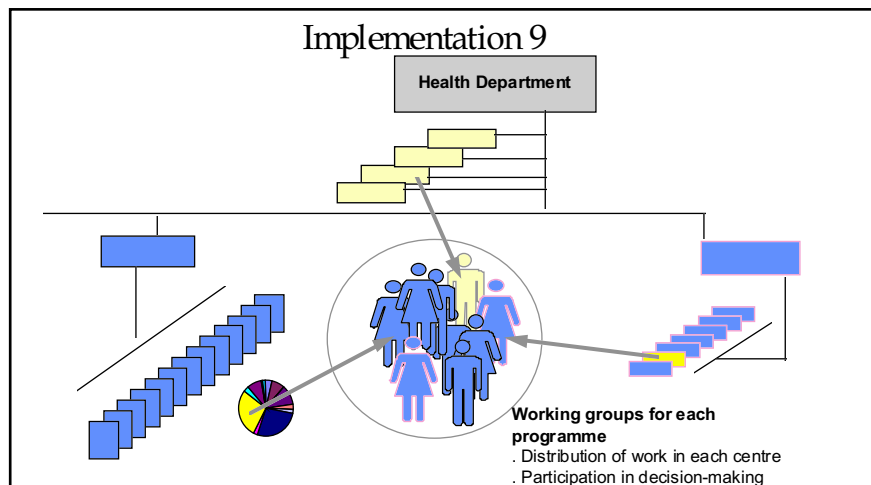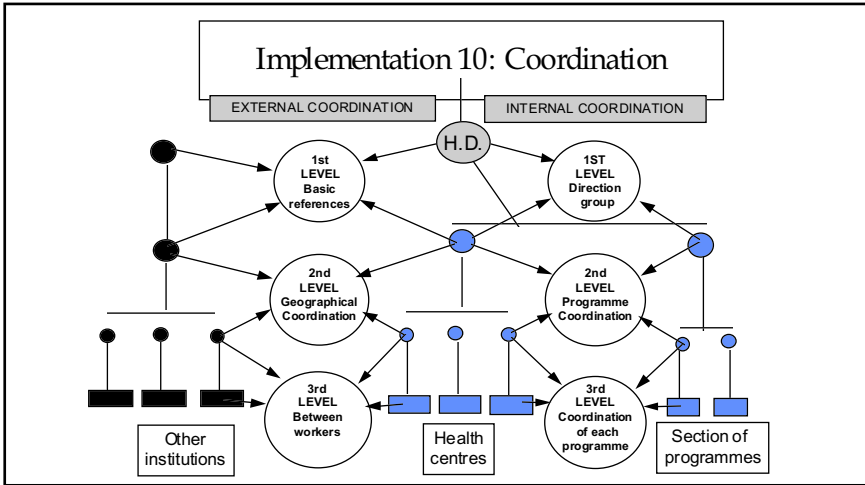
Professionals progressively returned to their jobs and the programmes were put into practice, a process which to some extent will permanently continue for periodic evaluation during months when there is less work. When the majority of programmes had started, we began a **process of management by objectives** which aimed at improving participation and commitment in the different locations.

One of the primary aims was the **linking search for polyvalency** in professionals. Each professional had to be responsible for the implementation of at least three programmes and never less than two, not only to motivate the workers to a greater extent, but also as an essential tool for flexibility, to become accustomed to undertaking different activities without too many costs.

Training periods and experiences have made POLYVALENCY costly, but we had to achieve it so that the organization could adapt to its turbulent environment.

Insufficiencies discovered

Some complementary units were missing, which could not be obtained or which were not thought of in the initial design:

- A unit for stimulating and evaluating **external coordination**, since the internal one was already suitable with the current organization design;
- **A marketing unit and the spread of health information**;
- Automatic mechanisms for **INTERNAL AUDITING** on critical aspects.
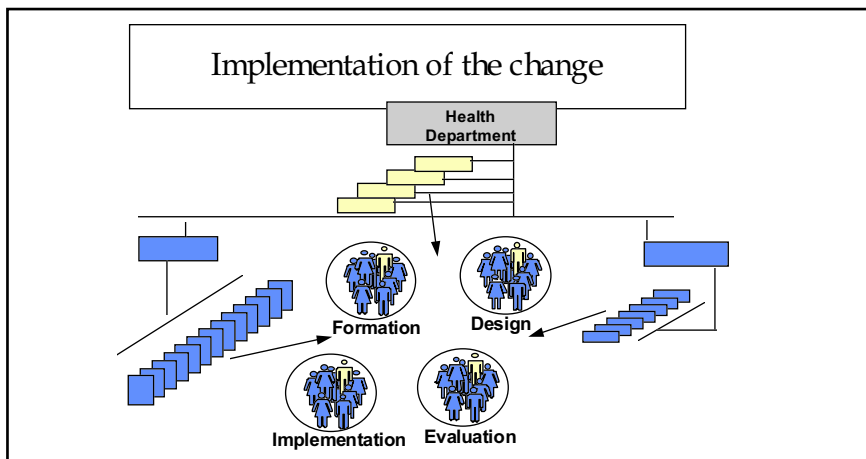
Conclusions

Although this task has been difficult, it has not been as hard as we expected. Participation from workers in decision-making which affects them, together with the creation of Product Managers to lead every programme, has progressively involved the whole organization and changed its culture in such a way that what was only a plan two years ago is now a reality.

We consider clear basic ideas, firm decision-making and an open and participatory spirit, together with the use of suitable management tools to be the keys to success in service management.
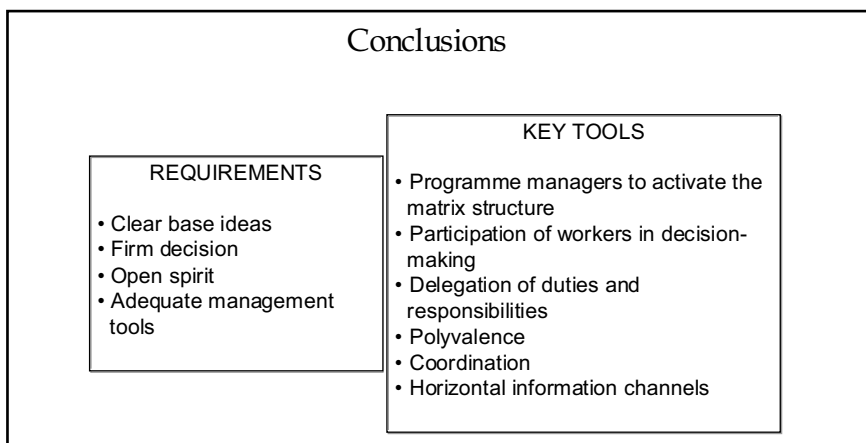
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"Addicted to Health"

Health and Environment promotion project in the primary schools of Pécs

(Pécs, Hungary)

Antonio de Blasio, M.A.
Zsuzsanna Füzesi, M.D., Dr László Tistyán, M.A.

The Healthy City Foundation of Pécs has had young people as the priority for actions since 1991.

The socialization of health and environmental values seems to be most effective if it is started at a young age and also will have a better effect on adults (parents) if such issues are interpreted through the children.

Generally there is an enormous gap between the environment of kindergartens (age group 3–6 years) and primary schools, both in the hygienic and in the natural environment, with kindergartens being in a much better situation.)

The project proposal was the subject of a discussion by various committees of the city council which resulted in an agreement by all sectors that health and environmental issues should have a common approach; it was also decided that the improvement of the hygienic and natural environment of the schools was as important as the health and environmental education programme for these institutions.

When we were planning the project based on the accepted strategy all the sectors which could possibly have any connection with schools were involved.

In the development process and in building up task forces the project was divided into two parts:

a. school hygiene and environment development programmes with a menu of connected activities;
b. games and competitions with the focus on health and environment.

Planning was carried out by a programme committee which consisted of teachers, medical professionals, environmental experts, public health officers, university lecturers, representatives of local industry and city planners (all on voluntary basis). (See Table 1.)

The first action to be taken was to create the image of the project by finding the best logo and the slogan with it. A city-wide call for proposals was announced through every possible local media outlet.

"Addicted to Health" was the winning slogan and the person who proposed it won the first prize as well as the fame for his highly original slogan (all the local media reported it).

When finding the right slogan the first step was to prepare a booklet for all the schools in the city to inform them about the possibilities for joining the project. The project offered an opportunity for schools to apply for financial support to improve their hygienic and natural environment if they could raise 50% of the financing.

*Table 1. The organizational and management set-up of the
Healthy City Foundation*

Board of Healthy City Foundation **(strategical decisions)** Members /jobs: • mayor • chief medical officer • chief executive of welfare dept. of the city • environmental expert • managing director of city health services • public health officer • project coordinator	Project committee **(operational decisions)** Responsible for parts of project Members/jobs: • City Library • Solid Waste Company • Waterworks • Education/schools • Teachers' training/University • Public Health Institute • Medical University/Behaviour Studies

The participating schools also had to take part in health and environmental education programmes (for children) as well as retraining courses for teachers if they wanted to be eligible for the financial support. (See Table 2.)

The schools could make their choice of health and environmental education programmes and materials based on informative presentations organized at the beginning of the school year. The chosen education materials were all provided free to schools in the required number by the foundations. Methodological training courses were also organized on the educational materials.

Teacher retraining round the school year was focused on raising the health and environment consciousness of teachers as well as on the improvement of management and organizational skills.

The "menu" for participating schools contained a programme called "our living space" which offered various topical visits to the local "Waterworks" and

Table 2. The process flow chart of "Addicted to Health"
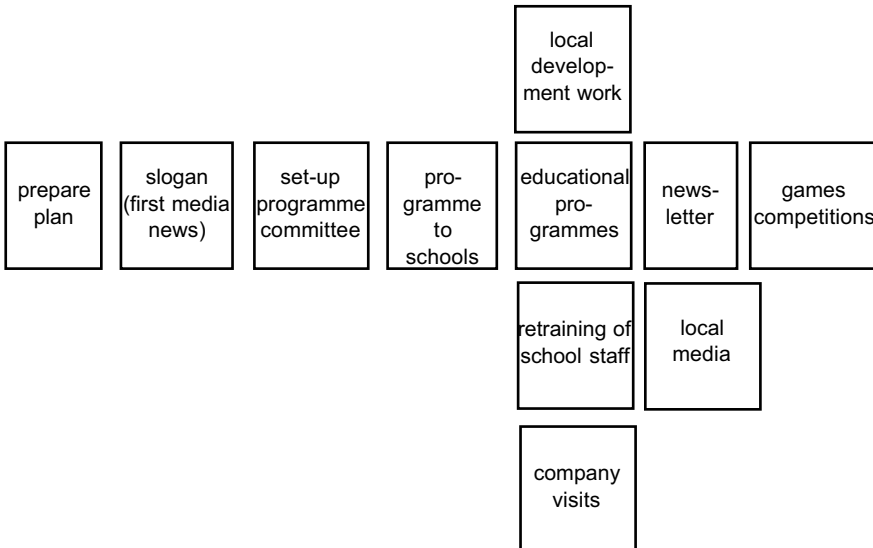
"Solid waste company". These visits were focusing on either water, waste water, water resources, etc. or on waste management, selective collection, etc.

As these companies are both in the outskirts of the city the local public transport company facilitated the free transportation of the children.

The Newsletter of the project was published as part of a local school magazine on health and environment with articles written by the children.

Games and competitions were the most popular parts of the whole project as they were organized in a way that all age groups and every type of interest could be satisfied.

The type of games and competitions organized as part of the school project were as follows:

- A series of health & environmental pools (just like the football pools) 13+1 questions with three possible answers.
  From September until May occurring 7—8 times.
  Participants collect their points and the winner is announced in May.
- "Environment pollution in my neighbourhood"
  A competition to indicate it on the map as well as well as to draw a picture about that particular pollution.
- "Famous people said about the nature, the environment and health" – a collection of sayings and slogans of famous people. The result of the competition was a small booklet with the collected material.
- Health and environmental bibliography for children and adults. Thousand of books and articles were collected and then distributed among the participating schools.

The school year was divided into two and there was a swimming pool day in January/February and a health tour at the end of the school year in June with a lot of fun on both occasions.

Prizes of the competitions were to serve health and environment promotion as well so the children could win sports centre season tickets, zoo entrance fees, fruits, etc.

All the games and competitions were aiming at the involvement of partners and other teachers of the schools.

The project was aiming at a better socialization of health and environmental values mainly in the case of school children but possibly also in the educational sector (teachers) and among the affected parents.

The local media (newspaper, TV, radio) coverage of the project was very wide and followed the project throughout the school year.

The local radio station started a programme with the Healthy City Foundation on health and environmental issues.

Evaluation and monitoring is described in a separate presentation from the same authors.

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Community involvement in soil pollution

(Rotterdam, Netherlands)

B.A.J. Groot, M.D.

Name
Soil

Programme name
Bodemsanering Gasfabriekterrein Kralingen
(Soil clean-up of the former gas factory terrain in Kralingen)

City, Region, Country

Quarter:	Kralingen
City:	Rotterdam
Region:	Province South-Holland
Country:	The Netherlands

Aims
Clean-up of soil pollution

Abstract

Kralingen is a quarter in Rotterdam. In the west part of Kralingen a gas factory was located from 1854 to 1928. The gas factory caused soil pollution with several chemicals, such as polycylic aromatic hydrocarbons, benzene and hydrochloric acid. Local residents discovered the pollution during house construction activities in 1980.

After the initial discovery, individual residents and resident corporations fought for many years to get the pollution problem acknowledged by local and national authorities.

Major achievements were the installation of a project group in which local residents were represented, the judicial decision to grant rent reduction and the cessation of the yearly rent increase from 1988 onward and eventually the acknowledgement of the problem by the local and national government in 1990. A formal organization, including a new project group with a representation of local residents, was created to prepare complete removal of the pollution. The local residents formed their own working group, supported by a social worker employed by the municipality.

In 1992 a new struggle started. In 1990, the costs of complete removal were estimated at US $30 million. The national government pays the major part of clean-ups costing more than US $6 million. There was formal agreement between local and national authorities about the costs until new investigations showed that the polluted area was much larger than expected. Estimated costs of complete removal rose to US $335 million. The municipality then developed a less expensive alternative of US $165 million and started negotiations with the national government. Local residents were neither consulted nor informed and

they had to learn from national television that the minister of the environment agreed to investigate further the Rotterdam alternative. As a protest, the social worker temporarily resigned from the project management group. Approximately a year after the minister had promised to investigate the Rotterdam alternative, a final decision was made. Pressed by local residents, the minister announced his decision to grant the US $165 million alternative at his visit of 26 April 1993.

In 1993 a third struggle began. This was largely held within the group of residents. The polluted site is almost completely inhabited. To enable the clean-up to take place, 110 houses will be demolished and about 2500 people must leave their houses temporarily or permanently. The clean-up will last 5 to 6 years and will cause major disturbances. Having learned about these consequences, many residents started to doubt the feasibility and desirability of the clean-up. A substantial number of residents had always opposed the clean-up of the area, but they had never been very active, because they did never expect approval by the government. Many of these opponents were elderly people with less involvement in the activities of the resident working group. As a result of the decision to grant the clean-up, they became more active. Also the people who had always supported the clean-up started to have their doubts being confronted with the severe consequences. Heated discussions were held to obtain a formal point of view for the resident work group. In the end, the resident working group decided to fully support the clean-up operation and to pass it off as smoothly as possible.

Cleaning up the site began in May 1994. Although it still has its difficulties, all parties are working hard to have it over and done with as soon as possible.

Environment and economical, social, political and cultural atmosphere

Concern about environmental pollution and degradation started in the Netherlands in the late 1960s and early 1970s stimulated by a small group of 'environmental activists'. During the 1970s the group of concerned people remained relatively small.

In 1980, a single event led to widespread general concern and intense political attention. This event was the discovery of ground and groundwater pollution in a small town called Lekkerkerk. A new quarter of the city was built on terrain which had been used for years for illegal dumping of chemical waste. High concentrations of benzene were found beneath and in the houses. Benzene had also permeated the waterworks. The conclusion of the health authorities was that damage to the health of the inhabitants could not be excluded. Therefore they were temporarily evacuated. Later it was found that the original measurements of benzene had been interpreted wrongly. The concentrations were a factor 1000 lower than indicated. However, inhabitants did not feel safe anymore. The ground and grounwater were still polluted strongly. It was decided to have the site cleaned. Costs: US $110 million.

The problems in Lekkerkerk did not only upset local inhabitants. Many people were shocked and realized that environmental pollution is not just a problem for men with beards wearing grey socks made of goat-hair talking about ecological this and ecological that, but that an average hard-working and law-abiding citizen could also become a victim.

Provinces and municipalities made inventories of polluted sites and quickly their number and the accompanying costs of cleaning up rose to gigantic proportions.

As a direct consequence of Lekkerkerk, the ministry of health decided to install a network of environmental health physicians in the Netherlands. In 1986 a specially developed education programme started and the network became operational in 1989.

It was in the early 1980s, with 'Lekkerkerk' shortly discovered, that a local inhabitant in Kralingen read a small message in a newspaper about soil pollution in her own street. Other streets in the same quarter were newly built and inhabitants had seen the polluted soil with their own eyes. A few inhabitants contacted local civil servants and authorities with questions about the soil pollution. Fearful images of Lekkerkerk went through their heads.

Local authorities gave only very meagre information and said there was very little reason for concern. The soil pollution was not very severe, in any case not severe enough to worry about. The inhabitants did not believe the reassuring answers to their worried questions and started the struggle which has been described in the previous chapter.

The first Dutch laws on soil pollution were passed in 1981, shortly after Lekkerkerk. In the following years, two important developments took place.

First, the several inventories of provinces and municipalities brought thousands of polluted sites to light. The necessary amount of money to clean up all polluted sites in the Netherlands was originally, shortly after Lekkerkerk, estimated to be US $600 million. A steady rise in this amount has led to estimates varying from US $30 000 million to US $165 000 million in 1994.

The second rapid development took place in policy issues. Lekkerkerk was solved as a single problem. The extensiveness of the problem demanded a specific legal and policy framework. This framework ranged from rules for investigating sites to rules for allocating the available budget, assessing the urgency of clean-ups and rules for clean-ups themselves. Policy slowly developed (and is still developing) from a wish to clean up all polluted sites completely, resulting in soil similar to that found in uncontaminated natural areas, to a system of removing the most important pollution as efficiently and cheaply as possible. During the development of soil pollution policies, it became an important issue legally and economically. Polluted soil became a burden for owners, because they had to clean it up before they could sell it or because it influenced the prices of purchase or rent negatively.

Policy changes did not go unnoticed in Kralingen and influenced the way of things as described in the previous chapter. The inhabitants used the greater importance given to soil pollution to claim rent reductions, to refuse rent increases and to claim a place in the formal organization which guided the investigation of the polluted site and the preparation of the clean-up.

In 1989 the municipal council member responsible for environmental affairs decided to acknowledge the problem and to prepare for a clean-up. At a national level it had been decided shortly before to restore polluted sites completely, making them useful for all possible functions (nature, recreation, habitation, industry). Extended discussions had preceded the decision to adopt this 'multi-functionality' criterion. The council member also adopted it. The costs of a 'multi-functional' clean-up were calculated as US $30 million.

Concern about and awareness of the possibilities for clean-up operations developed together in the 1980s, in Kralingen as well as in the rest of the Netherlands. Of course, these developments were not the only ones. The involved inhabitants were politically active people, who personally knew politicians in high places and who knew how to present themselves to the media.

From the first actions in the early 1980s until the present day local residents have actively used the media to obtain their goals. Meetings and activities were planned according to their media impact. Pictures of protesting inhabitants often appeared in local and regional newspapers. A national television network made a documentary (RVU 1992) about the struggle of one of the central residents to have the pollution acknowledged by local and national authorities.

After the formal decision to have a clean-up was made by the Ministry of the Environment, an active media strategy was developed by the project group in close cooperation with the resident working group. First, a communication plan was written. Following this, special programmes were developed, like a child action plan. An information centre with a staff of three persons was established in the middle of the polluted area.

Local and state government agendas on Kralingen did not coincide. An important issue of conflict concerned the costs. As described already above, national government pays the major part of clean-ups costing more than US $6 million. The alternative that was eventually decided on cost US $165 million. The Ministry of the Environment has the formal authority to select locations to be cleaned up.

The decision to clean up Kralingen had major implications for the budget for expensive clean-ups in the Netherlands. For five years, from 1994 to 1999, Kralingen would be almost the only major clean-up that could be executed. There were protests from other municipalities with 'large cases of soil pollution' on their ground and also within the ministry where civil servants had doubts about the total cost and the time frame in which it would be spent. A problem with the Rotterdam alternative was that it did not fit into the formal system of the ministry. Their system distinguishes total clean-ups and clean-ups in which pollution is not removed, but isolated. The Rotterdam alternative fell somewhere in between.

It was in the financial interest of local government to have a clean-up as soon as possible. Due to the actions of inhabitants, rent and tax revenues had decreased or had not kept pace with normal yearly increases. As a consequence, millions of dollars were and are still not collected by municipal authorities and services every year. Although a quick clean-up is clearly in the interest of the local government, enabling large rent increases and normal tax incomes after it has taken place, it was also in the interest of local government to keep its own obligatory contribution as low as possible.

The different agendas of local and national government led to extensive discussions about almost all aspects of the particulars of the finances that could be discussed (which were most of them). An extra complicating factor was that the Minister of the Environment had granted the Rotterdam alternative shortly before national elections were held. After the elections, the decision to grant the clean-up had to be worked out under a new minister and partly with new civil servants. Up to the present day, complete agreement has not been reached.

Planning

Several years of extensive investigations preceded the preparation of the clean-up. As with all research initiatives, investigations led to new questions leading to new investigations etc. At a certain point it was decided not to investigate the quality of ground and groundwater further, because research findings had caused delays in the preparation of the clean-up several times.

Next to the extensive ground and groundwater research, some research has been done concerning communication, perception and psychosocial aspects (Eijdems 1992, Noordanus 1994). In addition, books have appeared about the history of the project (Friedel 1994, Pavilons 1994). A commercial film production studio was commissioned to make two videos, one about the history of the project (Het Kader 1994) and another one about the technical aspects of the actual clean-up which has not appeared yet. Several students have written study reports about the clean-up. The project still awaits the first person who is going to write a thesis about the whole process, but the first candidates are expected shortly.

The clean-up is planned to take place in five to six years, from 1994 to 1999. It will be done in 11 phases. At the time of writing this case report, the first phase is almost finished and the three following phases are prepared in detail. Local inhabitants are involved intensively in the preparation of the plans in the formal network as was described already above. In a second stage the resident working group invites inhabitants from the part of the area that is prepared for clean-up to cooperate in the preparation.

The resident group has obtained support for hiring a bureau to perform the environmental accountancy. The bureau will check whether the clean-up is performed according to plan and if no pollution remains.

Realization

The realization of the clean-up has already been extensively discussed in the previous sections. No important aspects can be added in the present section, except for the different opinions about the realization of the project which exist among all interested parties. The involved parties and residents can be divided into optimists and pessimists. The optimists believe the clean-up can be performed within existing time and money constraints. The pessimists have their doubts on the feasibility of the operation. Although every involved person holds his or her personal view, it does not play an important role in their daily work. Everybody acts as if the optimists are right. The future has to show which of the two groups were the realists.

An interesting aspect concerning the implementation of the clean-up is the influence of the risk evaluation in the Netherlands. In the Netherlands a policy has been developed which makes a distinction between the need for, and the urgency of, a clean-up. The need for clean-ups is determined by the degree of pollution. If concentrations of chemicals are higher than pre-determined standards for a specified list of chemicals, a clean-up is necessary. The standards are set on the basis of potential damage to health of people and ecological damage. In the second step the actual risks are calculated on the basis of opportunities for contact, use that is made of soil and possibilities of dispersion into the environment. The outcome of the risk evaluation determines the urgency of the clean-up.

The risk evaluation in Kralingen showed that the health risks connected to living on the polluted ground are very small. Most pollution is found deeper providing very little opportunities for contact. This conclusion was first drawn in 1991 by the environmental health department of the municipal health service in Rotterdam and was maintained over the years. In several circumstances, pressure was put on the people of the environmental health office either to exaggerate or minimize the risks. In confrontations with local residents, on information evenings etc., local administrators and people from the project group wanted to downplay the risks to reassure people and to have a long-term argument before clean-up activities started. On the other hand, in confrontations with the ministry it was in the interest of local administrators and the project group to exaggerate the risks, because they judged it would be easier to obtain funds for a clean-up of a polluted area with high rather than low associated risks.

Impact

The impact on health of the clean-up is expected to be minimal. If there are any health effects, they are expected to be negative. As was mentioned above already, a risk evaluation of the environmental health department of the municipal health service in Rotterdam showed the risks associated with the soil pollution to be very small. The gain in health of removing the polluted ground and groundwater is accordingly very small.

Exposure opportunities are greatly increased during the period of a clean-up. The pollution is located relatively deep under ground level. During clean-up the relatively clean top layer of soil will be removed and the polluted soil will be taken up. Volatile components will disperse into the environment causing some risk of exposure to people living nearby.

In addition, new risks are added like those associated with trucks, shovels, deep wells etc. It is estimated that an approximate 25 000 truck movements will take place during the 5 to 6 years of working. Children are especially at risk and a special action plan has been devised to protect them.

The impact of the clean-up in Kralingen on clean-up policies and practices in the Netherlands is expected to be large. Many people believe that 'Kralingen' is the last extensive project that will be undertaken according to the rules which were developed in the last decade. It is expected that Kralingen will mark the transition from the clean-up of soil pollution to the protection of soil against new pollution. In this new policy, the emphasis in clean-ups will probably lie on removal of components that easily disperse into the environment. Despite these expectations, it is not yet clear exactly which conclusions will be drawn from the experiences in Kralingen. The project is only just under way and many people still have to form an opinion about it.

Evaluation

The clean-up in Kralingen has just started. Evaluations have not yet appeared. However, a project as extensive as Kralingen will not be evaluated after everything is over. The whole clean-up is, as was remarked before, divided into 11 phases. Each phase will be evaluated separately.

At the time of writing this case report, the first phase is almost finished and will therefore be evaluated formally within the next months. A more informal

evaluation has already resulted in a modification of the organization and some procedures.

Appendix

Basic data

Staff

The project bureau is staffed with 6 persons, the project leader and two assistants for the bureau itself and three communication workers.

Budget

The total costs for the project was in 1992 estimated as US $165 million. The national government has to pay approximately 90% of this and Rotterdam the remaining 10%.

The major part of the costs are meant for the clean-up and its accompanying aspects (relocating people, purchasing houses and ground etc.).

Administrative costs and costs for research are not calculated separately. Of the total costs, approximately US $35 million is estimated to cover the accompanying costs mentioned above. The rest (US $130 million) is for clean-up; 80% for the execution of the actual work itself and 20% for the remaining costs (preparation, costs of the project bureau, costs of the tens of civil servants working for the project etc.)

Sources

The total budget is shown above.

Next to the staff indicated above, two social workers are hired full-time to support local residents and tens of Rotterdam civil servants are working for the project either full-time or part-time.

Key contacts

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Telefax: (entry code) 31-10-2130293

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Municipal Health Service of the Rotterdam area
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Telefax: (entry code) 31-10-4339343

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4. PAVILONS E. *Alles overhoop*. Projectburo Bodemsanering Gasfabriekterrein Kralingen, Rotterdam, The Netherlands, 1994.

Videos

DE ZAAK VLINDERBUURT
Documentary of the RVU network in the series "Dossier weerwerk"
(April 1992).
Colour, 25 min.
Can be ordered from:
RVU-educatief omroep, Vreelandseweg 44, 1216 CH Hilversum
Tel: 035-240551.

EEN OUDE GASREKENING
Made by 'Het Kader' productions, in commission of the Projectburo
Bodemsanering Gasfabriekterrein Kralingen, Rotterdam, The Netherlands
(1994).
Colour, 18 minutes and 30 seconds.
Can be ordered from:
Het kader audiovisuele produkties BV, Ungerplein 2, 3033 BR Rotterdam,
Tel: 010-4660544.

Perception of Environmental Health by Children in Cities

(Liège, Belgium)

Dr Christiane Gosset

Abstract

Children's (10–12 years old) perception of Health and Environment in 10 cities of Europe (8400 consulted children)

The majority of the children of our European countries are living in a city. They appropriate the "city-space", but not really in the way expected by adults!

Therefore we decided to set up an investigation with the objective of studying the children's representation of their city, their perception of health and environment as well as their conception of a healthy city.

The Healthy Cities Project appeared to us to be the ideal way to get children's opinion. Our 'multi-city' investigation took place from mid 1993 to mid 1994. The total number of children consulted was more or less 8400, all over Belgium and France (in 10 towns). The majority of the children feel themselves to be in good or very good health (80%). This degree of positive self-evaluation decreases when moving from schools located in districts considered as very privileged to schools located in very unfavourably affected ones. It is interesting to note that in the 10 participating cities, "to be in the very best of health" is the children's first priority. To work well at school and to have a lot of friends is in the second position and this is similar in each city.

In children's minds the conception of the environment seems to be very closely connected with the natural, vegetable and animal worlds, but conditions for health and life in towns or districts also feature. This environmental perception in children's minds seems therefore to be very close to the "Healthy City" concept of the WHO.

Children think that drugs, tobacco and alcohol are agents that damage health. Air pollution is also considered to be damaging, though to a lesser extent.

On the other hand, the environment's physical side plays a leading role in their idea of a healthy city: a town where the air is not polluted and where it is clean, with many green places. Leisure locations (sports and pleasure grounds and woods) are the children's favourite places, while they dislike places where they feel insecure (dangerous or ill-frequented places, or where drug use takes place).

If they had to improve the environment in general, the children would propose not only ecological but also social solutions, such as helping deprived people, reducing unemployment and securing peace.

Perception of environmental health by children in cities

Children are living in three main environments: family, school and extra-family or extra-school times. These three life environments are very variable according to what can called the *socialization universe*. This latter notion covers geographical spatial conditions, as well as the sociological, economical, institutional and cultural conditions which go to create the urban cell. The place reserved for children results from a combination of these different dimensions.

The majority of the children of our European countries are living in a city. This "space" is an essentially social one but, at the same time, it includes a physical dimension. The child appropriates this city-space, but not always in the way expected by adults!

So the child moves from some places, created to a certain standard, in order to go to some others, where it will possible for him to create **there** an environment corresponding to **his** idea and **his** measure!

Therefore we proposed to set up an investigation with the following objectives: to study the children's representation of their city, their district, their perception of health as well as their conception of a healthy city.

Healthy Cities of the French-speaking network seemed to be the ideal places for consulting children.

This consultation was realized by means of a four-page questionnaire given to children in their last year of elementary education. This questionnaire was realized by means of "closed questions", in order to make easier the final utilization of data, but "open questions" were also used in order to collect spontaneous answers, in that way avoiding the social desirability phenomenon induced by adults.

Our multi-cities investigation took place from mid-1993 to mid-1994. Up to now, 10 cities have participated in this investigation: 3 Healthy Cities of the French-speaking part of Belgium and 7 French cities:

Belgium:	Huy
	La Louvière
	Liège
France:	Amiens
	Angers
	Montpellier
	Nantes
	Poulnoy
	Rennes
	Villeurbanne

The total number of children consulted was more or less 8400 across Belgium and France. The majority of the children were between 10–13 years old. Boys and girls were equally represented.

The following results are, at the present time, essentially descriptive, but collected data will make possible, in time, a more precise analysis.

One of the first questions was related to the child's perception of health.

Do you consider your health as very good, good, medium, bad, very bad?

The great majority of the children (85%) considered their health in a very positive way: feeling *good* or *very good*. Less than 2% declared they were in bad or very bad health.

Fig. 1 shows these answers for each participating city.

Best results were obtained in Huy in Belgium (87.8%) and in Rennes, in France (87.7%). Even the lowest result obtained by the representatives of Montpellier city (80.7%) remains very significant.

Fig. 1
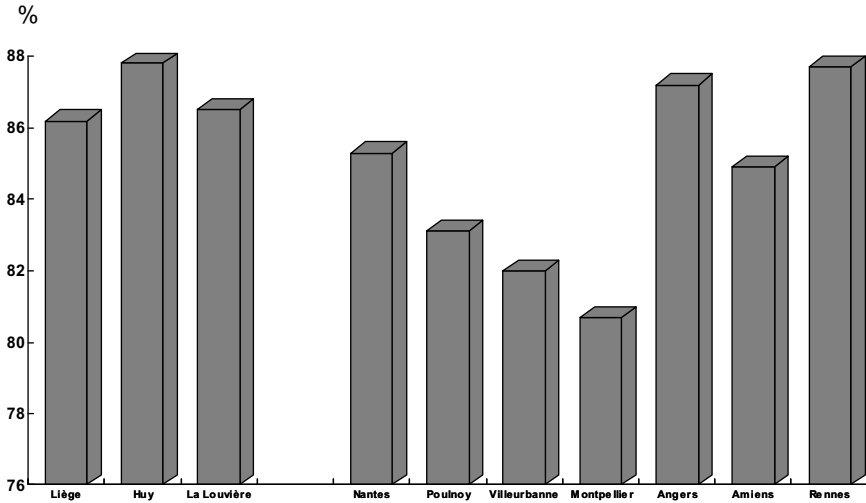
This self-evaluation was identical for boys and girls in Belgium and a little higher for boys in France (Figure 2).

Fig. 2
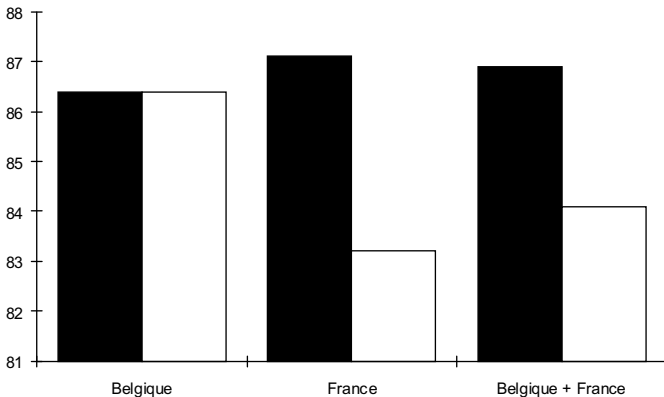
Does health appreciation change according to the kind of district where schools are located? (The assessment of districts as more or less privileged has been made by the Board Authorities of each Healthy City).

In Belgium, we observe a small but definite decrease in the favourable perception of health when "moving" from a very privileged to a deprived district.

In France, in contrast, only districts very unfavourably affected are distinguishable from the others.

How do you estimate your health?
Very good and good (per kind of district)

	Belgium	France	Belgium + France
very privileged	87.6	86.2	86.7
rather privileged	86.6	85	85.4
rather unfavourably affected	85.5	84.9	85.1
very unfavourably affected	84.6	85.1	85.1

The next question is related to priorities in the children's life. We observed, everywhere, exactly the same answers to this question : **"to be in the best of health"** is the children's first priority. In second place: **to work well at school** and **to have a lot of friends**. These three answers represent between 65 and 77% of total answers, depending on the cities (Fig. 3).

Fig. 3
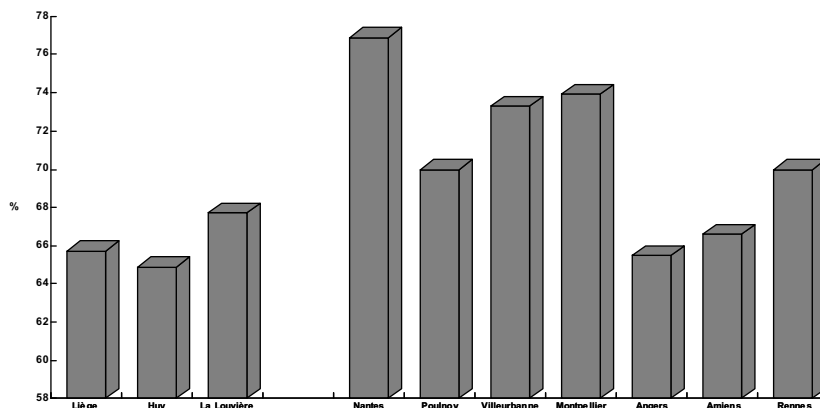
How do children consider the environment ?
The following notions appear in the children's answers:

		Number of answers
1.	nature	3866
2.	cleanness – no pollution	2653
3.	pollution	1287
4.	vegetable world (wood, vegetation)	1239
5.	environment	906
6.	health, welfare	606
7.	city, district	595
8.	water, air, atmosphere	591
9.	animal world	569
10.	protection of and respect for nature	440

In this "hit-parade", we observe the predominance of "nature", increased still further if the natural, vegetable, animal and physical worlds are considered together as well as the physical and vital elements such as water and air. In addition to this, it is interesting to note that the aspects relating to conditions of health and life, represented by the district or the city, are correlated with the aspects related to environment.

This perception of environment in the children's minds is in accordance with the concept "healthy city " of the WHO. Thus the physical aspect of the environment plays a leading role. Social ideas such as employment and health care are secondary. We previously introduced the idea of child's socialization levels. We will now consider it again, analysing the children's opinion about the district where they are living (Table 1).

Table 1. Your district is rather ...

	clean	nice	merry	quiet	silent	not polluted	safe	green	rich	smelling good	where you live in comfort
Liège	72	80	74	53	50	61	62	58	77	80	94
Huy	87	92	78	66	60	74	71	74	78	86	98
La Louvière	74	82	74	57	48	62	59	59	69	79	96
Belgium	**74**	**81**	**74**	**54**	**51**	**62**	**63**	**59**	**76**	**80**	**95**
Nantes	70	79	70	49	49	66	63	60	74	77	93
Poulnoy	89	91	81	64	70	78	83	81	82	91	95
Villeurbanne	69	77	69	44	43	51	63	56	66	73	92
Montpellier	62	75	71	45	39	60	57	69	66	77	92
Angers	75	82	73	53	51	70	67	58	72	81	94
Amiens	63	71	64	43	41	59	54	52	66	69	83
Rennes	80	84	79	47	47	69	73	70	75	82	94
France	**70**	**77**	**70**	**47**	**46**	**62**	**63**	**58**	**69**	**75**	**91**
Belgium & France	**71**	**78**	**71**	**49**	**47**	**62**	**63**	**59**	**72**	**77**	**92**

We can observe that in Montpellier, the total number of children living in a district they consider as "rather clean" is the lowest one; in Huy, the total number of children considering their district as rather nice is very high. The districts considered as the most polluted are to be found in Villeurbanne and as the most insecure in Amiens.

Is the district an "easy" one for different people to live in: children, foot passengers, handicapped people, adults, old people? You will find in the following table (Table 2) the reasons explaining their positive and negative answers.

Table 2: Reasons put forward to explain their answer to the question
"Is your district an easy one for the children to live in?"

Positive answers
* leisure
* green spaces
* friends
* many children
* road safety
* quietness
* school
* likeable, kind people

Negative answers
* road traffic
* few or no leisure spaces
* feeling of insecurity
* not enough activities
* few children
* pollution
* noise

The child has now (after evaluation of his close environment) to criticize, in a general way, the city where he goes to school (Table 3).

Table 3. Your city is . . .

	clean	nice	merry	quiet	silent	not polluted	safe	green	rich	smelling good	where you live in comfort
Liège	19	69	71	10	7	15	19	21	75	36	70
Huy	42	89	80	15	11	24	37	31	89	59	88
La Louvière	37	77	81	6	3	23	15	16	89	47	73
Belgium	**23**	**72**	**72**	**10**	**7**	**16**	**21**	**22**	**78**	**39**	**72**
Nantes	58	87	83	16	14	37	42	52	87	61	90
Poulnoy	79	92	88	48	59	70	78	87	87	92	93
Villeurbanne	63	82	79	24	21	35	56	47	79	64	89
Montpellier	55	88	81	11	16	41	9	57	85	64	94
Angers	78	92	89	23	23	55	60	67	89	80	96
Amiens	63	84	80	21	16	39	43	50	81	71	84
Rennes	80	92	90	22	22	51	57	66	89	76	95
France	**65**	**87**	**83**	**20**	**18**	**41**	**48**	**56**	**84**	**63**	**90**
Belgium and France	**53**	**83**	**80**	**17**	**15**	**34**	**41**	**47**	**83**	**60**	**86**

Liège appears as the less clean city, the less nice, the less merry in contrast to Rennes. Poulnoy seems to be the quietest city, the less polluted, the most safe, the most green, that smells good, contrary to La Louvière. Angers appears as a very nice and wealthy city, where the quality of life is the best.

What kind of places do children more appreciate ?

Table 4. Places that children most appreciate
(in % of identified answers)

1.	entertaining or educational places	28.5%
2.	green places	27.2%
3.	city centre	14.6%
4.	shops, restaurants	9.7%
5.	cultural inheritance (museum, castle...)	7.0%
6.	district	5.8%
7.	house	4.9%

What kind of places do children least appreciate?

Ill frequented places and places where you feel insecure appear in first position (Table 5). When observing in fifth position "leisure spaces", it may be asked whether it means that children do not want to go to appropriate places specially arranged for them by adults!

Table 5. Places that children least appreciate
(in % of identified answers)

1.	ill frequented and dangerous places	12.3%
2.	city centre	10.7%
3.	district "Le Pigeonnier" in Amiens	8.0%
4.	polluted places	7.2%
5.	leisure places	6.7%
6.	school	6.5%
7.	high traffic	6.2%
8.	shops, markets	5.6%
9.	dirty places	5.5%
10.	block of buildings, workmen's garden city ...	4.1%

In answer to the question: *If you had to better YOUR environment, what would you do*? children often propose solutions related to cleanness and extension of green places (Table 6).

Table 6: percentage of identified answers to the question
"If you had to better your environment, what would you do?"

1.	take health and cleanness measures	26.0%
2.	extend green places	21.6%
3.	reduce the causes of pollution	7.7%
4.	extend leisure places	7.6%
5.	reduce car traffic	7.0%
6.	measures related to town planning	6.5%
7.	better health (tobacco, alcohol, drugs)	3.1%
8.	help unfavourably affected people	2.5%
9.	disciplinary measures (fine, tax...)	2.3%
10.	removal	2.3%

We observe quite the same proposals when asking this question for the environment in general. Nevertheless, we observe a decrease of the importance noted for the *leisure places* and an increase of that noted for proposals related to more general political problems: to help unfavourably affected people, reduce unemployment, peace.

One of the underlying objectives of the present investigation was to lead children to think about environmental problems related to their city and to encourage environmentally aware behaviour. The spontaneous remarks they made about the open questions clearly indicate that children have many suggestions and ideas in order to better, not only **their** environment, but also **our one**. Therefore, in conclusion, we now show you some illustrations.

The Global Project of Cienfuegos
(Cienfuegos, Cuba)

Dr Alfredo Dario Espinosa Brito

Abstract

What is a healthy city?
Lessons from Cienfuegos

The city

Cienfuegos City is the capital of the Cuban province of the same name, located in the central and southern part of the island. It has a population of 140 000 inhabitants and because of its natural beauties – among them a large bay of 88 km^2 – it is called the **Pearl of the South**.

The town was founded in 1819 by a group of French settlers, who came from Louisiana. The **cultural traditions** of the city have been remarkable and they are an example of the splendid Caribbean mixture, where the historical roots of **Taínos, Spaniards, Africans and French** are combined.

The citizens of Cienfuegos are well known all over the country for **being proud of their region** and by the existence of **excellent relationships** among different sectors and groups of the community.

Besides being one of the most important Caribbean harbours, Cienfuegos has seen **economic development** based on industry, tourism, fishing, agriculture and cattle.

The Global Project of Cienfuegos

In 1987, a detailed health profile of Cienfuegos was presented and discussed at the Provincial Health Division of Cienfuegos and at the Ministry of Public Health. This study showed that Cienfuegos – as the whole nation – exhibited a **health pattern similar to those of the most developed countries** (*1*). That is, low crude mortality, very low infant mortality, high life expectancy at birth and ageing of the population. The main causes of death, disease and incapacity were Non Communicable Diseases (NCD); deaths due to infectious and parasitic diseases were very low. This picture, without obvious variations, remains the present situation in Cienfuegos.

As was expected, high figures of prevalence were found for the main risk factors related to NCD in Cienfuegos, particularly smoking, hypertension, unhealthy diet, obesity, lack of exercise and stress, which in the majority are consequences of specific unhealthy behaviours of our citizens, for the most part, learned.

In 1989, after creating a favourable climate of opinion and based on the assumption that **traditional medical approaches cannot solve the**

problems described above – because they are not, at root, medical, they are social and lifestyle-related – the Provincial Government decided to run the Global Project of Cienfuegos. Then the axis of the project moved **from the Health Sector to the Local Government**. During all these years, we worked together with the **Cuban Ministry of Public Health which** provided advice and help and the **Pan American Health Organization** which provided expert assistance.

As distinctive characteristics, this Project includes: a) a **highly qualified individual intervention** ("individual risk approach"), based on primary care and b) an **intersectoral intervention of the population** ("population risk approach" or "community intervention") (*1–3*), in which every community sector or group suggests and carries out activities with its own resources, in a coordinated way, directed by the Local Government through a Core Group to achieve healthy living conditions for all the people. Its general goal is to enhance health, quality of life and wellbeing in the community through a long-term project.

The global project of Cienfuegos and the Healthy City movement – our approach

The recognition of the potential of the Healthy City Movement (*4–11*), meant that the GPC found **new ways to obtain the active participation of all citizens in the solutions of our health problem**s, understanding health as a most important value, which requires promotion and care from all sectors and the whole community. Within the scope of Healthy Cities, the framework of the GPC was enlarged and it has become a starting motor of this movement among us, because it has identified and faced the main health problems of our population and brought new strategies to deal more easily with them in the **city's daily life**, without the artificial impositions that only produce immediate but transient changes.

Officially, Cienfuegos announced its **commitment with Healthy Cities** through different presentations at the Symposium on Urban Challenges and Healthy Cities/Healthy Municipalities: Bridging Europe and the Americas, in Sevilla, Spain, in September 1992 (*11*); at the First Latin American Conference on Health Promotion, in Bogotá, Colombia, in November 1992 (*12*) and at the Healthier Communities Award, in San Francisco, United States, in April 1993 (*9*).

In our city, this movement has been understood as a facilitator of the local health system and its leadership, encouraging, at the same time, the commitment, cooperation and participation of all community sectors and persons.

From our point of view, a Healthy City (or healthier community, or healthy municipality, because we think it is not a problem of name but of conception) (*10*), is one where authorities, institutions and associations, executive and workers, people and families, dedicate **permanent effort to improve their own living, working and cultural conditions and – as a result of all these actions – their health status**.

In practice, a project of Health City supports the ways and conditions for health to be more evident in the political and institutional agendas *(10).* Even in a highly organized public health system as ours, it seems good to **get outside**

the ordinary channels to encourage people to make healthy conditions and better lifestyle choices *(9)*.

Collaborative partnerships and model of leadership – the implementation

Medical care services by themselves lack the capacity, resources and political mechanisms to fulfil a comprehensive programme for the promotion of healthy living for all. (*2*) C**ollaboration and communication between sectors, institutions, groups and persons**, especially with those who design public policy and programmes is required. Also essential is the creation of **social and economic conditions** which help and encourage people to make healthy choices (*13*).

But the **health sector must be the leader in** promoting and organizing healthy public policies (*1*). It provides a framework for the integration of risk factor reduction activities and bridges the gap between health promotion, disease prevention and clinical approaches (*13*). Furthermore, health services should provide qualified resources and carry out research about prevention and control of disease. It is important to maintain an appropriate equilibrium between curative and preventive actions. In Cienfuegos, these ideas have been put in practice during the last seven years.

The constitution in 1991, as early as it was possible, of a **Core Group** in our city, which represents a coalition of health workers, educators, social communicators and different community leaders, facilitated the implementation of the above ideas. This group has the **responsibility to programme and coordinate the main activities** and to develop extensive and interconnected social support networks (*1,2*). In our city this group should be the executive board to achieve the goals of the general protocol of the GPC – approved also in 1991 – to advise on policies, to choose strategies and to evaluate implementation activities.

It is important that many "partners" join the community and necessary to make alliances among all levels of the government: health professionals, educators, social communicators, mass media, research workers, associations and all formal and informal leaders. It is essential to look for **real and independent partners** and not for dependent persons who only participate following the recommendations that emerged from the health sector but not on their own initiative or in their full capacity. The increasing process of medicalization in present societies, where many individuals think that all health related problems have to be solved by medical doctors and the health sector, is a barrier against these aims.

The ultimate success of health promotion programmes depends on **community support and commitment**. Community advocacy may be required for many decisions in the health road. Other reasons for community involvement are to develop a **sense of ownership** – and thereby **sustainability of the projects** – and to increase the relevance of projects to local values and perceptions (*13*).

The creation of **multi and interdisciplinary groups**, mainly **intersectoral** ones, in 1990–1991, enable many persons to work together on specific strategies in special target areas. After this process it was easier, in 1992, to constitute

different projects that were called **"Specific Projects"** (SP). From that time on, the SP have been the primary means by which the GPC operates (*2*).

Each SP has its own "specific protocol", its leaders and participants – persons and institutions – goals, plan of activities implementation, educational actions and evaluation. **Relative independence** is a characteristic of each SP, but several of these projects overlap in practice. So, they have to maintain closed relationships among them, always under the **umbrella of the GPC**.

A Healthy City is something alive and life is not like a film, where at first you have the script and then you have the complete film following the original script. Here, you have the "plan", but you have to make many changes in order to put it into practice. There is an overriding need to seek **innovative solutions** and the GPC includes SP that respond to the main strategies of the Project, through interventions in: **education, social communication, environment, food and nutrition, physical exercise and medical guidelines.** Other SP are oriented to particular groups in the community, such as: **children, youth, women, the elderly and the disabled.**

Yet the task of **maintaining and increasing motivation, information and relationships** among all partners and the SP of the GPC is one of the most difficult challenges that face any Healthy City Project. A lot of innovation is needed in this process.

Research in a Healthy City Project?
Yes or no?

It is not necessary to debate the inclusion in a Healthy City Project of **"classical" components** of: health policy such as education, social communication, nutrition or environment – because all of them are practically essential in the conception of a Healthy City. However, there is not a complete agreement about the necessity of a research component in a project of this type. So, the ideas that have emerged in Cienfuegos will be discussed here.

As part of a community based health project, if you do not monitor and evaluate the actions, you never know if "this project" works in "this specific community" (*10*).

Although a Healthy City Project could be possible without a research component (because it can be said to be a community and not a research movement (*9,10*), it is obvious that the **outcomes will be enriched** by the involvement of universities, research centres and workers and other community professionals of science. This can permit more confident results and the feasibility of the project can be scientifically proved. In other words, you can deal with a real **intervention–action (or research–action) project** (*1,2,10*).

Moreover, research related work, besides improving the prestige of a project, could **involve many qualified people** that live in the same community that they are studying and dealing with. High level and motivated partners are always good for all human business, also for health.

However, it is important to distinguish between a "pure" community based or oriented demonstration project in health (*3,14*) and a Healthy City Project. In the first a research component is compulsory; in the second, definitely not. If the inclusion of a research component is possible, so much the better. Again, it will depend on circumstances.

In Cienfuegos, because the GPC started as a community health project, a research plan was included from the very beginning in the general protocol of the Project – **mainly for monitoring and evaluation.** Through this, random sample epidemiological and **baseline survey** of the health risk factors, awareness and knowledge of health and lifestyles issues and specific risk behaviours were conducted among the adult population of the city, in 1991–1992 (*15*). This survey will be repeated every five years ufor 20 years. (*1*)

Other research work deals with **monitoring and evaluating** GPC components and its SP. Final results of these investigations have been published, (*15,16*) or presented at many local, national or international scientific meetings.

So, **appropriate information is desirable**, not only for the planning and evaluation of a project, but also to secure political support for it through the instruments of advocacy and legislation.

Relationships between Healthy City Projects and national health systems

Existing health promotion and public health programmes should be integrated – and enriched – in Healthy City Projects. So, it is necessary to apply the existing knowledge and resources of the National Health System in order to develop local expertise that allows communities to address pressing health issues (*10,13*).

In Cuba, the **Family Physician Programme in primary care** is a qualified and powerful network that supports health promotion and disease prevention activities. (*17*) A doctor – with his/her own nurse – working, living and caring for an average of 600 persons, guarantees the fulfilment of these actions for 100% of the population. In our project, the family physicians are the main actors in the Health Sector. It is not that other medical doctors, especially at the hospitals, cannot work actively in the project. Their actions are also important, but at different level. How to balance both levels requires more than scientific knowledge and practical know-how.

In 1992, the Cuban Ministry of Public Health announced the new **"Objectives, Purposes and Directions to improve the health of the Cuban population in 1992–2000"** (*18*). This document represents **a call for action** and **it encourages local initiatives** for facing the new challenges of Cuban Public Health. According to this, the GPC could be considered as a modest effort, in order to put in practice these national aims in a concrete locality.

Final comment

Fortunately, there is a growing recognition that **health can make a decisive contribution to sustaining social and economic developments**. Countries are accepting that this requires: a new way of thinking about the organization of the health services, involvement of many sectors and commitment to goals for guaranteeing equitable access to services.(13)

A better balance is needed between the resources available for treatment and those available for prevention and promotion. Compared to the cost of treating NCD – the major cause of death, disease and incapacity by

far among us – the resources to implement health promotion and disease prevention projects are very small (*13,18*).

C**ommunity based or oriented health projects** – especially those dealing with NCD – are a means and a good platform for the formation of a **comprehensive health partnership**, where the government and all sectors of society – through the leadership of the health sector but together with the active community – make **fruitful alliances for health, that is for the well-being and happiness of all in a Healthy City**.(*10*)

The Global Project of Cienfuegos is travelling in that direction. **In our people we trust**.

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WHO Healthy Cities
Towards an interregional programme framework
(World Health Organization)

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Introduction

The implementation of Healthy Cities Projects in metropolitan areas around the world has emerged as an effective means for improving urban health and the urban environment, particularly for low-income dwellers. The designation of a Healthy City signifies that new initiatives are being undertaken or planned, which through a new coalition of government and community organizations address priority urban health and environment problems. To date the development of Healthy City Projects or activities has taken different paths in different regions. In Europe, where the Healthy City approach was first developed and promoted by the WHO Regional Office for Europe, a structured Healthy City Programme is in place, whereas in other regions the Healthy City approach is yet to be organized, strengthened and structured to provide for a more lasting and systematic development.

The WHO initiated discussion on the promotion and development of the Healthy Cities approach as a major interregional programme on urban health and environment for the years to come. Its particular strength is its ability to address the major policy orientations of the WHO's General Programme of Work, namely: integrating health and human development in public policies, ensuring equitable access to health services, promoting and protecting health, preventing and controlling specific health problems. The approach is an important component of the WHO global strategy for health and environment that was endorsed by the World Health Assembly in May 1993.

While the Programme may focus on the priority health and environment issues, it will also address other urban health problems, in accord with regional priorities. To this end it may be a truly "inter-programme" activity of the WHO, that will enhance the coordinated programme delivery of many health programmes at the city and local level.

Important benefits of strengthened WHO Regional Healthy City programmes might include:
· greater effectiveness for WHO programmes in the key city health arena;
· a stronger linkage between WHO and the many existing Healthy City initiatives that aim at improving urban living conditions in all regions;
· a more effective approach to the WHO objective of integrating health and human development in public policies and thereby contributing to sustainable development;
· development of the WHO's capacities in supporting local and city level public health policies and programmes.

The purpose of this paper is to summarize the current status of Healthy Cities work in the different WHO Regions and to outline possible directions for an Interregional Programme. The concept of Healthy Cities is briefly explained in Appendix 1 and examples of the types of activities undertaken through the Healthy Cities approach are presented in Appendix 2.

Regional situation

Regional Programmes

The total number of Healthy Cities is not known with certainty. In the European Region it is estimated some 600 cities are currently conducting Healthy City type activities, with 35 receiving WHO "designation" (see below for the explanation of "designation"). In the American Region the number may be 100 cities, in the African Region it may be 30, in the Eastern Mediterranean Region it may be 30, in the Western Pacific Region it may be 30 and in the South East Asian Region it may be 10. At present an adequate reporting system (or office to coordinate networking) is lacking in all regions with the exception of the European Region.

African Region

A network of Healthy Cities in Francophone countries has been established, including Brazzaville, Congo, Dakar-Medina and Rufisque, Senegal, Niamey and Dosso, Niger, Port Bouet, Ivory Coast, and a coordinating office for this network has been set up in Dakar Senegal. Support for this network has come particularly from the Canadian Government and the Quebec network of Healthy Cities, as well as WHO/African Regional Office. There is a WHO Collaborating Centre at the Centre for Urban and Regional Planning, University of Ibadan, Nigeria, that has undertaken work in Nigeria, including the organization of a national Healthy Cities Conference in 1991 and a local Healthy City project in Ibadan. A new WHO Collaborating Centre for Urban Health in South Africa was designated in January 1995 and staff of this centre are active in a well-established Healthy Cities project in Johannesburg. Collaboration between this Centre and the Healthy Cities coordinator in the African Regional Office will support the development of a regional network of Healthy Cities. Other project cities in Africa include Accra, Ghana, and a new project supported by UNDP/ LIFE that has commenced in Dar es Salaam Tanzania. The African Regional Office, in collaboration with Germany, sponsored a major regional conference on urban health in Harare in 1993.

American Region

In the American Region, city-orientated activities following in essence the Healthy City approach have been underway for over 5 years. In Latin America and the Caribbean, the movement is based on the concept of the municipality as the basic political and administrative unit which is the model approach in almost every country. This means that the scope of the initiative in the countries goes beyond the limits of urban areas, since rural and suburban areas are included with the municipal boundaries. There is no single specific structure for technical cooperation on Healthy Cities. The Health Promotion and Protection Division (HPP) is supporting the countries and providing technical cooperation The main strength lies in the country offices which are organizing functional

teams with the group of consultants from the different technical programmes and Divisions especially Health Services (HSP), Health and Environment (HPE), and HPP, to support national projects and especially to strengthen the Network of Healthy Municipalities Movement within countries. In different countries they are identified differently. For example, in Costa Rica there are "local cantons", in Mexico "healthy municipalities", in Chile "Healthy Cities", and in the Caribbean "healthy islands". The total number of cities/islands taking part is estimated at 50 to 100. In addition, there is a network of healthy cities in the USA in Indiana established and coordinated through the University of Indiana School of Nursing (also a WHO Collaborating Centre), as well as a Californian network, and a Quebec Healthy Cities and Towns Network. A total of 6 cities participate in the Indiana network. A number of major conferences on healthy cities have been held in the Region. The UNDP/LIFE Healthy Cities Programme is supporting a project in Managua Nicaragua.

The work on Healthy Cities in Quebec provides an interesting model for future work and the Quebec network office is becoming a WHO collaborating centre on Healthy Cities.

Eastern Mediterranean Region

Healthy Cities activities in the Eastern Mediterranean Region were started in 1988. In 1990, the WHO Regional Office convened a Healthy Cities conference in Cairo which formulated a general strategy for the region, which was to concentrate on improvement of health and environment in cities through integrated environmental management. The Conference was instrumental in expanding Healthy Cities activities in the Region. Such activities are now under way in Iran, Pakistan, Egypt and Tunisia. Cyprus recently initiated a project in the City of Paphos, and Kuwait, Oman and Egypt are in the process of developing activities. A second Regional Conference on Healthy Cities was held in Tunisia in June 1994 and a regional development plan for Healthy Cities has been prepared. Tunis is the Coordinator of a Maghrebin Healthy Cities network, that includes four Healthy Cities in Algeria. The First Healthy Cities Conference in Gulf States was held in November 1994, in Dubai and is expected to lead to a Gulf Healthy Cities network. At this Conference it was noted that the city of Dubai has a Healthy City Project and that Oman is running a "Healthy Villages" programme. New projects supported by UNDP/LIFE have commenced in Fayoum Egypt and Quetta Pakistan.

The Regional Office is proceeding to establish a regional programme (network) on Healthy Cities. A focal point and an eleven member Task Force for the programme has been established and has had its first meeting; a work plan has been prepared. Regional and national initiatives were part of the agenda of EMR Healthy Cities Coordinators meeting, held during the WHO/UNEP Intercountry Meeting on Supportive Environments and Healthy Cities in Manama, Bahrain in September 1995.

EMRO plans to develop pamphlets and media materials and to support promotional events such as a Healthy City Week. World Health Day in 1996 will be used as an occasion to launch new projects in those cities wishing to join the EMR Network.

One of the leading institutions in the Region in the field of urban health and environment may be designated as a WHO Collaborating Centre on Healthy Cities.

The European Region

The first WHO Healthy Cities Project involving 30 cities from 16 countries was successfully implemented from 1987 until 1992. A second Project was started in 1993 involving 42 cities from 23 different countries. Many participating countries have developed national networks of Healthy Cities and so there are now hundreds of cities associated with the Project. A "network of European networks" (EURONET) has been established with a coordinating centre in Toulouse, France.

Healthy Cities has become an important strategy to implement city level sectoral health programmes of the European Region, often using the approach of the "multi-city action plan", where a number of participating cities may decide to collaborate closely with each other in addressing a common health problem, eg AIDS, diabetes, accidents etc. Each city simultaneously starts its own programme, while sharing information on the situation analysis, strategies, progress in implementation etc., with other participating cities. Healthy Cities serves to integrate many diverse programmes at the city and local level, allowing for more coordinated programme delivery.

One feature of the programme in the European Region, not currently implemented in other regions, has been "designation" of each participating city as a Healthy City, after the city makes certain commitments or achieves certain criteria. Only a small proportion of the cities that participate in Healthy Cities in Europe are designated cities (approximately 35 out of 600), and the non-designated ones are considered to be part of a "movement" rather than WHO project cities. The WHO project cities presumably get a greater share of WHO's resources (staff inputs, inputs from various WHO programmes, limited financial support, etc.). It appears Mayors value the designation highly and make political capital from it.

In Europe a number of Collaborating Centres for Healthy Cities work have been established. They include the City of Rennes in France, University of Limburg in Maastricht, Netherlands, Nottingham School of Public Health in Bristol, UK and University of Geneva in Switzerland.

South East Asian Region

In response to Healthy Cities initiatives in several countries, including Bangladesh, Nepal and Thailand, the WHO Regional Office is developing a Healthy Cities programme, which will be a collaborative effort of the Environmental Health Programme and the Programme on Health Promotion and Protection. Bangladesh has been able to use funding from the WHO "Countries in Greatest Need" facility to support projects in Chittagong. A new project in Cox's Bazaar Bangladesh has recently secured funds for a project from the UN Development Programme "LIFE" programme and from the Netherlands; implementation will be monitored and supported by country UN Development Programme staff, as well as by WHO. Collaboration with the urban infrastructure programme of the Asian Development Bank has been arranged for implementation of the project in Cox's Bazaar. A Healthy Cities Project has been initiated in Nepal which will cover three municipalities and relate directly to the World Bank Metropolitan Environment Improvement Programme (MEIP) for Kathmandu. A major feature of the Healthy Cities work in Bangladesh and Thailand is the detailed evaluation that is being undertaken in cooperation with the London School of Hygiene and Tropical Medicine and South Bank University London. A

project costing study of the Bangkok Healthy Cities Project has recently commenced that will have important implications for fund-raising and replication of projects in additional cities in Thailand.

Western Pacific

In this region, considerable work in urban health has been undertaken by the Environmental Health Centre (EHC) and the Regional Office and there is an increasing demand for urban health work of the Healthy Cities type, for example by China, Malaysia and Viet Nam. An urban health workshop for several municipalities was held in Viet Nam in October 1994 and urban health activities will be initiated to link up with the MEIP plans for the Hanoi-Haiphong region. There is a recently established task force on urban health in the Regional Office. EHC has established links with the Urban Management Programme of the World Bank/UNDP/UNCHS, which has a regional office in Kuala Lumpur and also MEIP. While there are long-established Healthy Cities programmes in Japan, Australia and New Zealand, it is anticipated that the newly developed programme in several Malaysian cities (Johore Bahru, Kuching) may become a model for the Region. A WHO Regional Workshop on Urban Health and Environmental Management in Johor Bahru Malaysia in May 1995 demonstrated good progress in Healthy Cities work in a number of cities and also improved co-operation between various external support agencies working at the city level including Habitat, UNDP, WHO and World Bank.

Headquarters

Major foci of HQ work have been fund-raising, provision of regional and country level support, development of Collaborating Centres and promotion of the concept of Healthy Cities to other development agencies, including the principle that health should be an integral part of all types of urban development activity by development agencies. There is a continued effort to improve the concept and practice of urban health, through participation in workshops and research with leading practitioners in this field, for example the Bellagio Conference on Urban Health in October 1995. The WHA Technical Discussions on urban health in 1991 provided a valuable boost to urban health activities throughout the Organization and this event was supported by the preparation of technical guidelines on key urban health issues (housing and health, surface water drainage, insect and rodent control, health aspects of the indoor environment, health in urban planning, solid waste management etc). Support to various country level activities has included participation in many city health consultations to initiate new projects and the development of municipal health plans. HQ has supported a series of workshops in various regions on urban health. Current priorities include support for the development of regional networks and programmes on Healthy Cities, the development of a global monitoring system and database for Healthy Cities and the development of a stronger institutional base at all levels for this work.

Links with other organizations

Many activities designed to improve the capacity of municipal government to manage the urban environment and improve living conditions in cities have taken place in the wake of the United Nations Conference on Environment and

Development (UNCED). In addition to the WHO Healthy Cities Programme and UNDP's LIFE Programme, the UNDP/World Bank/UNCHS Urban Management Programme, the ILO Labour Intensive Public Works Programme, the Metropolitan Environment Improvement Programme and Metropolitan Development Programme of World Bank/UNDP, the Sustainable Cities Programme of UNCHS, the CITYNET/Asia–Pacific 2000 Programme of ESCAP/UNDP, the Megacities Programme, the Metropolis Programme and various international organizations concerned with local government, are major initiatives at the international level.

While cooperation has been successful in several instances, (for example, the WHO–Metropolis links on air pollution) much more effort is required to establish links with others. In WHO collaboration with these agencies, a principle is emerging that urban development activities of many kinds (housing, industry, infrastructure etc.) present not only hazards to health – if health and environment impacts are not considered – but more importantly they offer health opportunities. These "opportunities" may include introduction of worker training, safe practices and pollution control in industrial developments, primary health care and health education associated with house upgrading programmes or water and sanitation improvements etc. For example, air pollution monitoring and control activities implemented under the WHO/UNEP programme, GEMS/AIR, are directly linked with programmes such as the Sustainable Cities Programme of UNCHS in Dar-es-Salaam and the URBAIR workshops of the World Bank's MEIP in Manila and Kathmandu.

Healthy Cities may be a "stand-alone" project in a given city, or it may be a health component of a larger urban development effort that involves urban infrastructure, land management, municipal finance, industrial development etc., with the city health plan being an integral part of the wider development plan for the city. Examples of such links include the joint Healthy Cities and Sustainable Cities Program in Ibadan (where a city health plan is integrated into a wider development plan for the city) and the joint effort on Healthy Cities and urban infrastructure development about to be implemented in several secondary towns in Bangladesh by WHO and the Asian Development Bank.

The WHO links with several of the above agencies have helped to reduce overlap and avoid the confusion of local partners. Stronger links with WHO may help ensure that the municipal planning exercises that are common to all (involving situation analysis, consultation with community groups and local institutions, development of partnerships, mobilization of resources, development of action plans) place due emphasis on the protection and promotion of health. The links with UNCHS Sustainable Cities and UNDP LIFE programme involve joint implementation of projects. As of 1995, UNDP LIFE programme in cooperation with the Netherlands is participating with the WHO in the implementation of Healthy City Projects in 5 countries (Egypt, Pakistan, Nicaragua, Bangladesh and Tanzania).

Programme development

An interregional programme for Healthy Cities might have the overall developmental objective to improve urban health and environment through regionally constituted and operated networks of Healthy Cities. It would seek to develop and maintain a strong inter-programme base in HQ and Regional Offices to

promote the active participation of all relevant programmes in HCP. And it would facilitate the coordination of HCP activities in individual cities with other environmental and health related programme activities.

Possible strategies and activities

1. Maintain a regionally-oriented flexible approach, so that HCP could be developed differently in different Regions and on a different time schedule.

2. Establish WHO Collaborating Centres to provide support to the Programme.

3. Continue to develop and disseminate guideline material relying increasingly on successful case study examples of existing Healthy City projects.

4. Mobilize extra-budgetary support for programmes as a whole and for regional networks and individual city projects.

5. Promote the expansion and strengthening of the Programme through exchange of information, technical support through networking and city "twinning" arrangements, conferences, newsletters, etc.

6. To develop a global monitoring system for Healthy Cities, that includes a database on individual city projects.

7. To undertake strategic research on Healthy City Projects, for example to develop a methodology for costing the implementation of a project in a given city and to develop methodologies for assessment of the impact of a project on the operation of local government in participating cities.

8. To use prominent health-related events, such as "World Health Day", for health promotion activities in all participating cities.

9. To prepare an interregional conference on Healthy Cities, to promote and develop the above objectives on a worldwide basis.

10. To use the event of HABITAT II in June 1996 to promote health in housing and Healthy Cities.

11. To establish and maintain close coordination with international local government associations and with urban programmes of other international agencies, an important objective being the establishment of cooperation with UN Development Programmes at the country level.

12. To provide advisory services and other support to individual Healthy City projects, relying on the particular strength of the WHO in its ability to provide in-depth technical support from its comprehensive range of programmes covering virtually all health and environment aspects.

13. To foster linkages between WHO's environmental health activities on the "brown agenda" (for pollution control, water and sanitation etc.) and the Healthy Cities Programme at the individual city level and in the networks.

Appendix 1

Key Healthy City concepts

There are perhaps two key concepts that help define the Programme: intersectoral collaboration for health and supportive environments.

1. Intersectoral collaboration for health

A focus of the Programme is the development of urban policies and management practices that attach importance to health as a goal of sustainable development at the level of city and local government. All agencies concerned with energy, food, agriculture, macroeconomic planning, housing, land-use, transportation and other areas, are required to examine the health implications of their policies and programmes and adjust them to better promote health and a healthy environment. This activity is often termed "intersectoral collaboration for health", or ISC. A key weakness of earlier efforts on ISC was the failure to define "who is to do what", the failure to define whether (and how) the health sector was to be involved and to develop political support for ISC. It now seems clear that ISC requires at least 3 elements to succeed:

(a) the measurement of the health impacts of various development activities, an effort that requires carefully designed and executed activities to link health problems with environmental and social conditions, which may take place by health authorities in collaboration with universities;

(b) an analysis of both the adverse impacts on health of various development activities and of the potential opportunities to enhance health that almost every development activity presents; as a result of this analysis the health sector may for example develop a policy on health in housing, on health in the workplace, health in schools etc.; and

(c) advocacy by the health sector in relation to each implementing ministry/ agency, to implement the health-related policies and an appropriate programme of health promotion.

ISC is enhanced by political support. Mayors/municipalities may commit themselves to a Healthy City process, that will involve formulating and adopting a municipal health plan and developing solutions to problems on a community-wide basis, involving partnerships of municipal government agencies (health, water, sanitation, housing, social welfare etc.), universities, NGO's, private companies and community organizations and groups – the partnership approach.

2. Supportive environments

The idea of a supportive environment and the "settings" approach has turned out to be a powerful and valuable one for the promotion of health in many countries (Box 1). The home, the school, the village, the workplace, the city are the places where people live and work. The health status is determined more by

Box 1

SETTINGS THAT SUPPORT HEALTH

**Improved health requires making these "settings"
more supportive of health**

HOME, VILLAGE, NEIGHBOURHOOD

SCHOOL

WORKPLACE

CITY AND DISTRICT

---

the conditions in these settings than by the health care facilities that we can provide. These are settings where health may be maintained and indeed created, by engaging all participants and authorities that operate there, in activities to create a supportive environment for health.

In relation to the settings of neighbourhoods and cities, the local/municipal government may examine the health implications of its work and develop a municipal health plan, with participation of community organizations, local institutions etc. In relation to the school setting, the parents, school principal and education authorities must together develop a plan to install in the school adequate water and sanitation facilities and a good safe playground and perhaps allow the children to participate in these activities. WHO now has examples of these comprehensive health development approaches (which usually have titles like "healthy villages", "healthy schools", "healthy workplaces etc.").

Appendix 2

Examples of Health City activities

In all countries the Project has drawn national attention to health and environment crises in the cities. Some examples of specific projects that have developed are:

In **Teheran**, the Project has led to an upgrading of housing in a low-income areas of the city.

In **Lahore**, the Project has focused on improving environmental and sanitary conditions in crowded informal settlements, using a partnership between the city corporation, local residents and other agencies.

The Project in **Rio de Janeiro** has mobilized human and financial resources to provide drainage of a neighbourhood, stopping the seasonal flooding of low-lying areas.

Healthy City Project partners in **Chittagong**, Bangladesh, have agreed on a programme of action covering seven main areas: slum improvement, literacy, water and sanitation, drainage and sewerage, health care and nutrition and town planning.

In **Accra**, training of municipal government staff responsible for environmental services in the city in concepts and practice of health education and promotion has been implemented, so they may undertake health promotion as part of their community level work.

In **Johannesburg**, the project has developed a comprehensive health and housing programme for townships in the vicinity of the city, with improvements already achieved in areas such as water, sanitation, solid waste management, neighbourhood safety etc.

The PAHO/WHO experience:

Healthy municipalities in Latin America

(Pan American Health Organization)

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Introduction

The macroeconomic, political, demographic, and sociocultural changes that have taken place in Latin America in recent decades have led to a highly complex health situation – one that is typified by problems that cannot be approached solely from the perspective of traditional medical care. The health services are being called upon to redirect their curative efforts, not only toward more effective and efficient recovery but health promotion and effective preventive intervention.

The achievement of **equity** in health remains the paramount concern of current public health activities in the region. Hence, the strategy of health promotion, in which the fostering of health as a social good is broadly deemed to be the responsibility of governments, institutions of all kinds and the citizens themselves as the best option for the developing countries. The Pan American Health Organization has consequently assumed this responsibility by including technical cooperation for its Member States within its broad policy lines.

The Healthy Municipios strategy is an opportunity for the health sector to integrate its efforts with those of other social and economic sectors in the interests of greater equity in health, primarily to take action on the true determinants of health rather than the consequences of disease. In the final analysis, the important thing is to help effect a transformation in the living conditions of the people and this can only happen through intersectoral action and community participation.

The Healthy Municipios movement in Latin America coincided with two other phenomena that have no doubt shaped its current image: the rapid development of **health promotion linked to equity**, which has supplied it with goals and operational tools; and the growing trend toward **decentralization**, which has given impetus to local action in all the countries.

It is important to remember that in most of Latin America, legal and administrative political power at the local level falls to the municipalities whose governments – usually elected by popular vote – are responsible not only for the urban areas that house the seat of government, but also the surrounding urban and rural areas to which their jurisdiction extends. The trend toward greater municipal authority is very strong, reflecting decentralization, delegation of authority and the strengthening of democracy.

At the present time, the Healthy Municipios movement in Latin America has already chalked up five years of experience. The social, economic, political and cultural differences both within and among countries have posed a new challenge for implementation of the Healthy Municipios strategy, initially designed to promote health in the urban areas of the more developed countries (*1*).

This document seeks to summarize what has been learned to date from some of the activities that the PAHO/WHO Division of Health Promotion and Protection has promoted in Latin America and that by no means constitutes the sum total of projects undertaken in the Region of the Americas.

The Healthy Municipios movement in Latin America has already taken on a life of its own and has been nourished by the pioneering experience of Canada and several countries in Europe (*2*). The Latin American experience may even be able to provide feedback for similar movements in other continents (*3*).

Definition

The definition of Healthy Municipios is based on the definitions that have been put forth since the 1980s to define the concept of Healthy Cities (*1,2*). Time and experience have imposed a natural selection process, retaining those that have best reflected the image associated with healthy municipalities, although, as Hancock and Duhl have noted, the concept is something that most people understand intuitively, without the need for further explanation.

Perhaps the first definition that was well received was the description of a healthy city as one that creates and/or improves its social and physical environments and deploys the community resources necessary to help its citizens to develop all aspects of their lives to their maximum potential through mutual assistance (*1*).

Another very widespread definition described the healthy city as one in which political and civil authorities, public and private institutions and organizations, property owners, entrepreneurs and workers and society as a whole constantly strive to improve the living, working and cultural conditions of the people, establish a harmonious relationship with the physical and natural environment and expand community resources to improve community life and promote solidarity, community action, cohesiveness and democracy (*4*).

These definitions, however, require an indigenous dimension in the Latin American context. To begin with, the term "healthy municipalities" instead of "healthy city" better represents the Region's political and administrative structures, as explained above, and moreover, takes into account the current processes of delegating authority to the municipalities. Urban health is also a priority in the current context of the Region, given the rapid urbanization that is presently under way, for example, in Mexico City and Sao Paulo, where projections for the year 2000 designate them the most populous cities on earth (*5*). The municipalities includes not only urban areas, but rural areas, which in 1995 are estimated to hold 25.4% of the entire population of Latin America (*6*). Many of these rural populations lack basic infrastructure and their inhabitants live at minimum subsistence levels.

The municipalities, then – rural and urban – are better adapted to the purposes pursued by the Healthy Cities movement on other continents and have more resources to fully develop health promotion. The same concept is applicable

to other legal administrative divisions that are equivalent to the municipalities in some countries, such as Costa Rica, where they are called "Healthy Cantons".

For practical purposes, PAHO/WHO considers that **municipalities begin to be healthy when their local organizations and their citizens assume the commitment and institute an ongoing process of improving the health conditions and wellbeing of all their inhabitants.**

The first aspect of this definition is the explicit commitment of the entire municipality, through its representatives and natural leaders, to make health a priority objective in its plan of work. To avoid the temptation to seek only the political benefits derived from the designation of healthy municipalities, the definition includes the requirement of instituting the process and continually improving it, which implies tangible actions and outcomes.

It is interesting to note in the definition of healthy municipalities that the process of improvement is more than the end result and impact. Some definitions have preferred to refer to goals, setting targets for the programme action. The definition with which PAHO has worked is geared more toward the process than its final outcomes. A municipality is already healthy, regardless of its point of departure, if it establishes mechanisms to generate progressive gains in its level of health. Far from aiming at a distant utopia, this definition seeks to make operational the motivational concept of the healthy municipality in its current reality, even if it still has a great deal of ground to cover before it can enjoy optimum indicators of health.

The motivational concept of healthy municipalities, in turn, coincides in many of its purposes with other PAHO/WHO strategies to achieve the same goals of equity and social development – particularly the strategy of strengthening local health systems (*7*), conceived as a means for the transformation of the countries' health systems and a contribution to political and administrative decentralization. The promotion of environmental health is another strategy that is closely linked to the healthy municipalities and local health systems' strategies.

A municipality that seeks to be healthy should optimize its community resources – material, human, and organizational. For this purpose, a common front based on a consensus on goals must be constructed, in which the resources are managed jointly and in a manner that is planned. It is essential to form intersectoral and inter-institutional alliances that will achieve the development desired and for this purpose intersectoral committees are commonly set up. The experience in Latin America shows that the intersectoral committees for healthy municipalities tend to be more inclusive than exclusive. It should be emphasized, nevertheless, that a minimum number of players must always be involved.

Finally, the definition of healthy municipalities encompasses the concepts of equity and community participation in calling upon the contributions of all its inhabitants. In the Latin American context, the Declaration of Bogotá on Health Promotion and Equity (*8*) pointed to this commitment to equity in health as a fundamental goal in Latin America.

Experience

The Healthy Municipios movement was launched in the early 1990s. Since then, the strategy has continued to make progress and has become a substantial mobilizing force in the Region.

For PAHO, the movement has constituted a singular vehicle for implementing the mandate of the Governing Bodies with regard to the Strategic Orientations and Programme Priorities approved for the period 1991–1994 (*9*).

It has also served as a powerful vehicle for the countries in fostering decentralization and building citizenship, both necessary steps for reactivating development. Many countries in Latin America are still burdened by clumsy centralized structures inherited from the past. Social regulation requires a redefinition of the relationships between public authorities, social institutions and citizens. The search for formulas that will make it possible to harmonize these democratic processes with other economic, social and political factors has intensified the need to provide a further impetus to political and administrative decentralization (*4*).

Fortunately, most of the countries in the Region are moving toward representative and democratic systems that are committed to greater civil and political freedom and to opening the way to increased citizen participation. Such an environment provides more favourable conditions for improving the health of socially disadvantaged groups while efforts are under way to promote comprehensive development of the municipalities (*4*).

From the standpoint of the health sector, the strategy of healthy municipalities has made it possible to include priority health problems in the political agenda. The health sector is being called upon to work with other social and economic sectors in carrying out activities to promote health in the interests of equity and broad-based citizen participation. The Healthy Municipios strategy provides an opening for the health sector to team up with governmental authorities, other sectors and the citizenry and take action to promote health locally within the concept of local health systems.

The health sector is in a privileged position to serve as a "good partner" for other sectors also committed to social and institutional change and at the same time can act as a mediator between the institutions and the citizens by contributing its experience and resources. This is how the initiative has been understood by the countries and is what has inspired them to welcome it with such enthusiasm.

Healthy Municipios projects have not been formulated in isolation but rather, represent a local expression of the postulates on health promotion set forth in the Ottawa Charter (*10*) and reaffirmed in the Declaration of Bogotá by most of the Latin American countries (*8*) and in the Caribbean Health Promotion Charter (*11*).

The Healthy Municipios movement has evolved towards the establishment of networks to improve its operations, thereby strengthening and expanding the movement while at the same time serving as a vehicle for mutual learning. The networks, moreover, facilitate the delivery of technical cooperation by PAHO, which would otherwise lack the means for providing support to thousands of municipalities. This has been fundamental in the discussions about experiences both inside and outside the Region of the Americas. The networks facilitate coordination and unity among localities, make it possible to share proven programme models and inspire replication of the movement, leading to the discovery of common interests and the identification of situations that require mutual support or joint approaches. Finally, the networks strengthen the movement by publicizing achievements and satisfying the needs of other international

groups and may become a primary vehicle for regional and interregional integration (*4*).

When PAHO began promoting the strategy, thought was given to monitoring closely the experience in every concerned country so that each could serve as a project demonstration model for subsequent extension. However, the dynamics of the movement have shown that these initiatives replicate rapidly under their own steam and that real movements ultimately evolve naturally into networks.

At the present time, several projects are in operation, all sharing the following characteristics:

– they originate in local initiatives with a strong political commitment at that level;
– they have an intersectoral organizational structure;
– they generate widespread community mobilization and participation;
– they initially emerge as a means of finding solutions to problems of a diverse nature (environmental problems, action to combat risk factors related to cardiovascular and other noncommunicable diseases, reduction of accidents and violence, improvement in the living conditions of the most disadvantaged sectors, etc.);
– they have an easily recognizable leader.

The launching of each project has required a series of technical cooperation activities and joint efforts with leaders in the health sector and local political representatives. The appeal to mayors and members of the municipal councils has been the most decisive element in launching the projects. Although PAHO has not proposed preconceived mechanisms to ensure the desired flexibility in undertaking these initiatives, the European instrument known as the *Twenty Steps for Developing a Healthy Cities Project* (*12*) has proven very useful in the initial stages.

One of the most outstanding characteristics of this incipient movement in Latin America is its great wealth of creativity, variety and political strength. This creativity is fundamental for the development of a positive culture of health that enhances the value of health as a social and personal good. In like manner, PAHO has conceived of Healthy Municipios as a process in which the situation of each country is unique. The role of technical cooperation has been to promote the use of methodological instruments, scientific and technical information and exchanges between countries so that they may develop their own models. A description of some of the most significant experiences is presented in Appendix 1.

The following are a few examples of some approaches taken by the various municipalities.

In the matter of health-oriented policies, some municipalities have described persistent refuse collection problems and their improvement subsequent to regulation by the municipal government and the joint contribution of material and human resources by community institutions. Another example of a health-oriented public policy is the case of a municipality that regulated the use of public advertising space to include public service announcements concerning health and wellbeing.

In another municipality, a farmers' cooperative was faced with problems of erosion and degradation of the soil bordering a river. After discussing the problem

in its intersectoral committee, it decided to promote beekeeping among some of its members as an ecological solution that would also provide additional food to combat serious malnutrition problems.

In some municipalities, emphasis has been placed on prevention in the health services to improve the situation with respect to cardiovascular diseases, cancer, and diabetes. As part of the dynamics of the Healthy Municipios movement, the health services systematically assume an advocacy role in expanding their disease prevention and health promotion functions.

In addition to providing assistance in the difficult goal of promoting healthy policies, the intersectoral committees in healthy municipalities constitute an important step in citizen participation. In localities where such organizations have been set up, the population has participated in decision-making and in implementing the agreements reached. During the cholera epidemic, the intersectoral committees were where the negotiations that led some town councils and/or municipalities to contribute materials and the population to contribute manpower were conducted.

As an example of personal skills development, several healthy municipalities have organized programmes conducted in school study programmes by health, education and police teams on topics such as traffic accidents.

The creation of healthy environments is a very important part of the experiences to date. Use of the local approach makes it easier to identify the mutual interaction of man and his environment. Housing, the workplace, the neighbourhood and the city are the immediate surroundings of human beings. The experience of a municipality that created a project called *Adopt a Block* is highly demonstrative of the potential of these initiatives for improving both physical and social environments.

The Healthy Municipios strategy has provided a laboratory for demonstrating the fundamentals of health promotion and some of its achievements are already being documented. Nevertheless, a great deal remains to be learned. PAHO is committed to assisting the countries by facilitating flows of information and the sharing of experiences, providing training in health promotion and mass communication and giving technical support to the joint development of health and welfare indicators that will make it possible to monitor and assess the impact of the actions taken. An attempt is currently being made to identify the most appropriate intervention models, in addition to simple, valid, reliable and feasible indicators for application at the less complex local level (*13*).

Any local, national, or regional Healthy Municipios movement will be subject to continuous modification in accordance with the overall political, social and economic progress achieved as well as the advances made in the internal restructuring of the movement itself. These external and internal variables do not generally exhibit random behavior. Despite their uncertainty, it can be anticipated that they will present both opportunities and constant threats. To a certain extent, this uncertainty can also be controlled through strategic planning. As public speakers well know, there is no better extemporaneous remark than one that has been carefully rehearsed.

Developing health programmes at the local level imposes new technical and administrative demands, especially in the training of local human resources, who will have to assume greater technical responsibility to identify the needs of the population, as well as managerial responsibilities to provide quality services consistent with well-defined priorities. Furthermore, government authorities

above the municipalities level must also adapt their resources and roles to provide effective support for local management.

The experience of healthy municipalities in Latin America has already made it possible to identify some of the opportunities and challenges that should converge in their development (Table 1).

The warm international welcome currently given the Healthy Municipios movement is probably associated with factors such as the continuing evolution of the concept of health, the search for effective strategies to enable the countries to achieve the goal of Health for All with equity, the increased risks associated with lifestyles and environmental conditions whose solutions require a variety of interventions, the organizational and financial crisis of the health systems, the untenable increase in health care costs, recognition of the limitations of traditional health services in light of modern-day health problems and the legitimate right of citizens to participate in solving their own problems (*4*).

Conclusions

1. The Healthy Municipios strategy in Latin America is helping promote new social pacts in the search for solutions to the problems affecting health and wellbeing, strengthen the principles of solidarity and above all, find the means of achieving equity.
2. Through these movements, the health sector is bolstering its leadership capability by including health on the political agenda. These movements, moreover, help improve the organization of the services.
3. The formulation and implementation of healthy public policies is being fostered, an area that has previously received little attention in Latin America.
4. Contributions to building a culture of health are being made through support for its values and the promotion of healthy lifestyles.
5. Contributions are being made to strengthening democratic processes and building citizenship.

The challenges to maintaining the commitment required for continuing to move forward and to mobilize wills and resources are great indeed; at the same time those who are opposed to initiatives that they themselves have not proposed, or have doubts about them, must be faced. Technical and administrative demands will surely extend beyond the capacity of the municipalities; nevertheless, there is firm confidence in the potential for these experiences to make a true contribution to the development of health and an improvement in the quality of life in the Region.

*Table 1. The most important opportunities and challenges to the
Healthy Municipios strategy in Latin America*

Opportunities	Challenges
Among the few strategies available, Healthy Municipios is an effective one for influencing local health policies.	The municipalities' lack of financial resources for carrying out their plans with tangible results in the short term. Unlike the Healthy Cities movement in Europe and North America, a considerable portion of the healthy municipalities in Latin America must continue to strive to meet the basic prerequisites for health: nutrition, housing, employment, drinking water and sanitation services, education and even peace.
The organized participation of all social players maximizes the utilization of whatever resources are available and ensures the commitment of all to carrying out the actions proposed.	
Experience shows that the Healthy Municipios movement opens the door for the discussion of general health considerations. The point of departure often consists of environmental problems that affect the population directly, such as drinking water, waste disposal, vectors and parasites, housing and road infrastructure.	The formation of alliances inside and outside the health sector. Inclusion of the Healthy Municipios project under the umbrella of health promotion, which is still assigned low political and budgetary priority in comparison with other programs.
The growing decentralization of the State toward local management levels. The municipalities constitutes a appropriate administrative and geographical setting for simultaneous intervention in all possible health promotion mechanisms.	The need to provide experience and training for local resources in the management of general plans of work and to work together rather than separately by sectors. Both the local politicians and the professionals who provide technical support require basic training in the strategic planning for Healthy Municipios.
Healthy Municipios is a motivating force that has proven highly attractive to both citizens and politicians. Propelled by this force, health has the potential for gaining visibility through favourable publicity in the communications media.	Research on Healthy Municipios should be conducted in the countries' schools of public health and communications. It is urgent to launch a cycle of research-education-advisory services in the academic world to guarantee the technical support this movement demands. Indicators and information systems should be developed that will make it possible to monitor and evaluate progress.
Healthy Municipios has emerged as a health strategy based on municipal government and combined social sectors. The health sector should consider the Healthy Municipios strategy as an opportunity to achieve progress, especially with respect to its objectives of promoting local health policies and attaining more effective levels of citizen participation. Health professionals are invited to play a major role in the organization of Healthy Municipios movements.	The movement is just beginning in Latin America. A common denominator for the various municipalities has yet to be defined that will provide an image of this strategy. Support for bulletins, publications, conferences and other activities in information exchange will help foster a line of work that will have repercussions both inside and outside the movement.

Appendix 1. Healthy Municipios in Latin America

The Division of Health Promotion and Protection, together with the other Divisions in PAHO, has supported the Healthy Municipios initiatives in the Region since the time they were first proposed. Although a wide variety of Healthy Municipios projects are already in existence, PAHO has concentrated its limited resources on certain initiatives in their initial phases in the hope that they might evolve into demonstration projects from which lessons could be learned first hand.

Identifying the pioneering Healthy Municipios projects in Latin America is no easy task. While some rather poorly organized attempts had been made to launch such projects in Brazil and Colombia prior to 1991, since that time the projects described below have clearly appeared on the international scene as part of the Healthy Municipios movement:

1. *Global Project for Cienfuegos, Cuba*

Cienfuegos was the first municipality in Latin America to adopt the Healthy Municipios strategy. The population of Cienfuegos is 140 000 and because of its natural beauty, which includes a large bay, is known as the Pearl of the South. The project originated in a proposal made by the health sector to the Provincial Government of Cienfuegos in 1989. The epidemiological profile of Cienfuegos showed an increase in chronic noncommunicable diseases (NCD), which led to a proposal to address the problem by including all sectors of the community in the solution. In September 1992, the local government internationally proclaimed its commitment to Healthy Cities in the Americas–Europe Encounter on Healthy Cities and Municipios in Seville, Spain. Its activities included the preparation of medical guidelines for the prevention and diagnosis of NCD, the development of educational programmes at the preschool and primary levels, the preparation of a mass media project, activities to improve food and nutrition by including the food industry in the production of more nourishing and healthy food and specific actions to improve the environment. The Cienfuegos experience has already been extended to eleven additional municipalities in Cuba, which now possesses a national network of healthy municipalities.

2. *Healthy Manizales, Colombia*

With a population of 382 748, the Municipalities of Manizales, capital of the Department of Caldas, is beset with health problems that have been exacerbated by heavy immigration from the rural areas. The strong political commitment of the local government to the strategy of health promotion activated the process in 1991, leading to the Declaration of Healthy Manizales in 1993. Manizales had succeeded in consolidating a network of basic services using the local health systems strategy. Activities are under way in the areas of mass communication and public information, geared towards: strengthening healthy and safe behaviour models; providing educational activities for schoolchildren and adolescents; carrying out intersectoral activities for the wellbeing of the elderly; improving environmental health conditions; adopting healthy lifestyles, especially with regard to diet, smoking, alcohol use and drugs; protecting those who live in high-risk areas for landslides and improving streets and parks

through the *Adopt a Block* programme – all of this, as part of the creation of a new culture of health.

Colombia has also had other productive experiences in healthy municipalities – for example, in the Municipality of Cali, which has been a pioneer in developing community participation and primary care projects that have achieved a significant increase in health service coverage, and, more recently, in developing the comprehensive DESEPAZ project to reduce violence, based on strategies for development, safety and peace. Health promotion has also been generated in the Municipality of Versalles, whose greatest wealth lies in its community participation.

Finally, mention should be made of Law 100, promulgated in Colombia in 1991, which has substantially strengthened political and administrative decentralization and the allocation of resources at the municipalities level. This experience may make Colombia one of the leading countries in Latin America in the formulation of health strategies from the local level.

3. The Network in Mexico

Mexico has intensively promoted a movement known as "Municipios for Health". Although Zacatecas had already been working in the area of health promotion and on interventions to reduce NCD, the broadest and most dynamic movement in this sense was launched with the political support provided by the Health Promotion Department of the Secretariat of Health, which succeeded in gradually extending the idea to 11 municipalities in 1993 and to some 150 by the end of 1994. Mexico was the first country in Latin America to set up a National Network of Municipios for Health after the signing of the Commitment of Monterrey in November 1993. The network incorporates municipalities with varying approaches and priorities. Some have centred their activities on the local health systems, others in environmental health. One of them, Zacatecas, has focused its attention on chronic diseases and accidents. Nevertheless, all are characterized by their aim to promote the social development and wellbeing of the population through the shared responsibility of the different social sectors.

The work that they have undertaken includes the essential components for an accessible, sufficient, and complete diet; basic sanitation and improvement of the environment; the search for optimal conditions for employment and work; improvements in housing and urban development; the promotion of healthy lifestyles; the safety and protection of the population; promotion and improvement of educational levels and the provision of medical care to vulnerable segments of the population such as children, the elderly, and indigenous and socially disadvantaged populations. Since the end of 1994 state networks have been set up in the states of Michoacán and Sinaloa.

4–5. Baruta and El Hatillo, Venezuela

Venezuela was the fourth country to respond to the appeal for Healthy Municipios in Latin America. The first initiatives took place in the municipalities of Baruta and El Hatillo in 1992. The strategy of Healthy Municipios was initially proposed in response to the growing incidence of cardiovascular diseases, cancer and other NCD and actions have largely been centred on the lifestyles and risk factors associated with these diseases. The level of development attained so far is still limited, the principal challenge

being the consolidation of intersectoral structures. Meanwhile, the municipalities of Barbacoas in the State of Aragua, Guigue in Carabobo, and Puerto Cumarebo in Falcón have organized a movement that is now on the verge of becoming a national network characterized by strong health promotion components geared toward transforming living conditions.

6. *Valdivia, Chile, a Healthy Municipality*

Valdivia is the capital of the Province of Valdivia, in the southern part of the country. It has a population of 120 706, essentially in the urban area. Valdivia, a Healthy Municipality, was born as a health promotion pilot project. It was officially inaugurated by the President of Chile in April 1993, on World Health Day. From the start, it has enjoyed the full backing of the municipal government, in addition to a special team for its implementation. The project was oriented towards verifying the effectiveness and efficiency of the grass-roots and multisectoral strategy for health promotion and the prevention of risk factors for NCD, particularly with regard to the serious problem of traffic accidents. The communication and school education programmes are among the most developed, although activities related to labour, support from the health services, and environmental protection have also been carried out.

7. *San Carlos Canton, Costa Rica*

Several comprehensive local projects have been undertaken in Costa Rica for health promotion and development. However, it was only recently that a healthy municipalities or canton project was initiated. San Carlos Canton, which has developed a substantial agricultural and livestock production system, has a population of 91 658, making it the largest cantonal unit in the country. Its population is young and has a high level of social development. The project is multisectoral, assisted by the participation of civic and community organizations, in addition to the Municipalities President, a Council of Aldermen and the health sector through the Costa Rican Social Security Fund. Mention should also be made of the conceptual and organizational development of the social workers who have encouraged efforts to generate health promotion activities.

Other Examples

The foregoing does not constitute an exhaustive description of the Healthy Municipios/Communities movement in the Region. There are many more individual experiences that have originated in various human and social development projects. In essence, they combine the same elements of local political commitment, the intersectoral approach and community participation and empowerment, stressing prevention activities and protection for the population and not solely the treatment of disease. The most important common denominator is the search for equity in health in the interests of social development.

The recent interest that the strategy of Healthy Municipios has aroused in Brazil is worthy of note. An outstanding example is Campinas, where the commitment of the Mayor has been exemplary in spearheading civic mobilization of all public and private institutions. Owing to the leadership assumed by certain mayors and governors, the experiences in other states in the northeast and south (Fortaleza, Curitiba, and Santos) have also been significant, and comprehensive projects for health and wellbeing are being implemented that are achieving significant community mobilization and participation.

A line of projects known as "Salud, Medio Ambiente y Lucha contra la Pobreza" (SMALP), supported by Italian cooperation, is being implemented in Colombia, Peru, the Dominican Republic, Argentina and Brazil. These projects are also characterized by a comprehensive approach to improve the health of the populations in the most socially marginalized areas. Italian cooperation is also assisting in carrying out human development projects for migrants as part of the Development Programme for Refugees, Repatriates, and Displaced Persons (PRODERE) in Central America.

A variety of local level projects in the area of environmental health are in operation, such as those in Mexico, for example, implemented with the support of the Spanish Government.

In Central America, several Healthy Municipalities projects are being consolidated in Panama (San Miguelito), Guatemala (Cuilco), El Salvador (Santa Ana, Metapán, and Ciudad Barrios), Honduras (Comayagua, Tocoa, Villanueva, Atima, and Choluteca) and Nicaragua (León and Nandaime). In addition, the ministers of health in this subregion have formulated a joint action proposal, known as "Fronteras Saludables", distinctly committed to health promotion. A project is also being proposed for healthy municipalities on the border between Peru and Chile.

Finally, mention should be made of Safe Communities as one of the new mechanisms that PAHO – and especially the Division of Health Promotion and Protection – is supporting. Based on the political commitment to municipalities, both are working to reduce accidents and injuries, with the subsequent extension of their approach toward broader proposals for creating cultures that will reduce the problem of violence of all kinds. These projects are most developed in Argentina and are beginning to spread to other countries in the Southern Cone.

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The Expanding World of Community Environmental Auditing

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Abstract

Achieving the best relationship between mankind and the environment requires that attention is given to at least two basic elements. We must improve our knowledge and expand our awareness about this relationship. But we also need to devise the most appropriate structures and policies to adjust that relationship where needed. This paper is mainly about a particular type of attempt that is being made to get the second of these two basics right: achieving improved structures and policies. It is concerned with 'environmental auditing' as practised by local authorities.

The paper outlines the main findings of a recent research study carried out for the European Foundation on environmental auditing (or, as it is sometimes called, eco-auditing) among local authorities. The research has been looking at the current use of environmental auditing by local authorities across Europe and has focused on three individual case studies of municipalities that have been among those at the vanguard of innovation in this field – Sundsvall in Sweden, Kirklees in England and Igualada in Spain.

Introduction

Environmental auditing is part of a new approach to environmental protection that has been emerging over the past few years. The traditional approach, which focuses on having government agencies that regulate private concerns and which has separate systems of environmental regulation for each of the environmental media (land, air, water, nature) is gradually being replaced by one that stresses:

- the need for a more holistic approach to the environment, which recognizes that controls affecting one kind of environmental medium (for example, air pollution controls) may lead to spillover effects onto another medium (e.g. land), giving rise to unwanted side effects.
- the importance of information, awareness and shared responsibility amongst the whole population, its institutions and organizations (households, companies, authorities), not just government agencies.
- the role of market mechanisms (e.g. voluntary mechanisms, fiscal instruments) in addition to and often to replace traditional instruments of regulation.

For local authorities in Europe environmental auditing is a relatively new concept and in the early stages of development. Largely following the lead given by private companies a number of local authorities have, however, started to experiment with its use. Interest in and support for some kind of environmental auditing is on the increase.

Environmental auditing in the private sector has been around for some time. However, it received something of a boost in 1990 when the European Community announced that it was going to draft legislation to introduce a scheme of 'environmental auditing' to cover industrial companies. At first the Commission's plans were rather ambitious: the scheme was to require that all of the organizations covered by the legislation were to audit the environmental performance of their plant and installations. Environmental auditing was to be made mandatory.

Perhaps not surprisingly, the scheme generated a good deal of opposition, mainly from the industrialists who would have been directly affected by it – they feared an increased workload and extra costs without commensurate benefits – and in the end a voluntary scheme (the EC Eco-Management and Auditing Scheme – EMAS) was introduced instead. But importantly and perhaps by way of consolation, the net of the scheme has been drawn more broadly, so as to include the possibility of non-industrial, service sector, organizations, including those in the public sector, being involved.

Since that time a number of public sector organizations – and especially municipalities – have indeed started to experiment with environmental auditing of one kind or another. Indeed, there has undoubtedly been mounting pressure and a gradual build up of enthusiasm for the introduction of environmental auditing. Some foresee a time, in the not too distant future, when there will in fact be a compulsory scheme in place, affecting a wide range of enterprises in both the public and private sectors, perhaps in much the same way as has happened with Environmental Impact Assessment.

So now it is perhaps timely to take a look at the experience there has been to date with this particular innovation, to see what lessons have been learned.

So what is environmental auditing?

Providing an exact definition is not easy, for several reasons: although used increasingly the term environmental auditing is not used consistently. Organizations – both municipalities and private companies – that say they are carrying it out actually use the term in different ways and include within its remit varying activities. In particular, environmental auditing tends to be viewed differently in the private and public sectors. Until these difficulties are ironed out, an all embracing working definition, which is broad enough to cover all or most of what goes on under the name of environmental auditing, without losing an overall internal coherence, is probably the best we can do. My particular working definition, cobbled together from a number of different sources and relating only to environmental auditing in local authorities, goes like this:

> *the formal and rigorous review and evaluation of the municipality's environmental performance, as measured against established goals, objectives and targets for the environment, with a view to improving that performance. [The review/evaluation should be periodic, systematic, objective and documented and the municipality here can refer to the local authority organization itself (or an individual department or section within it) or the wider community for which it works.]* See Box 1.

BOX 1: ENVIRONMENTAL AUDITING, A WORKING DEFINITION

REVIEW and EVALUATION
of the
MUNICIPALITY'S ENVIRONMENTAL PERFORMANCE

1. Environmental conditions
2. Policies and practices
3. Compliance with environmental regulations

in a way that is
PERIODIC
SYSTEMATIC
OBJECTIVE
DOCUMENTED

N.B. 'Practices' include:
- working arrangements, procedures and routines
- division of responsibilities and management structure
  training and education
- equipment, materials, manufacturing processes, waste disposal
- purchasing and storage

SYSTEMATIC
- management understanding, support and commitment
- proper definition of scope (geography, activities, organization) and aims
  of the audit
- proper and adequate organization of staffing for the audit
- independence of the audit team
- quality control mechanisms
- investigates all key environmental issues e.g. air emissions, waste
  production, storage, disposal and recycling, noise generation, etc.

One of the keys to understanding the concept of environmental auditing is the notion of environmental 'responsibility'. In the new world of environmental protection that has begun to emerge over the past decade or so and in the context of Local Agenda 21, all parts of society – companies, other organizations, local people – are seen to have responsibility for protecting and improving the environment, not just government regulators. Environmental auditing provides a tool with which each organization or member of society can take their share of this responsibility for the environment, by looking closely at their own individual contribution to it.

But perhaps the best way to understand what environmental auditing is all about is to see what tasks are actually carried out when it is practised.
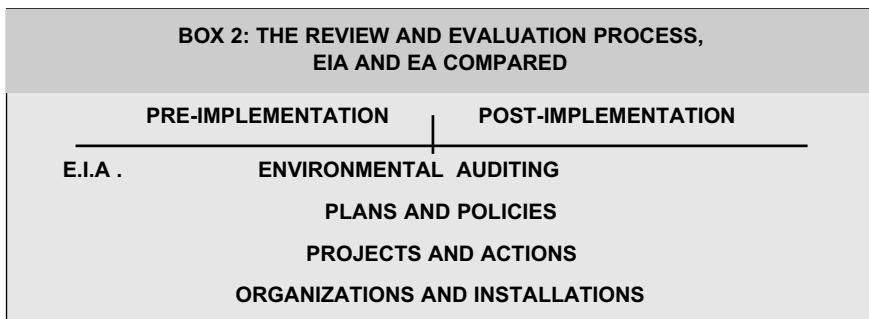
The components of environmental auditing

Although the practice of environmental auditing among local authorities is a fairly recent development and there is still much confusion over the words used to describe auditing, two basic strands or types) of environmental auditing have started to evolve and they have done so in fairly typical or standard ways:
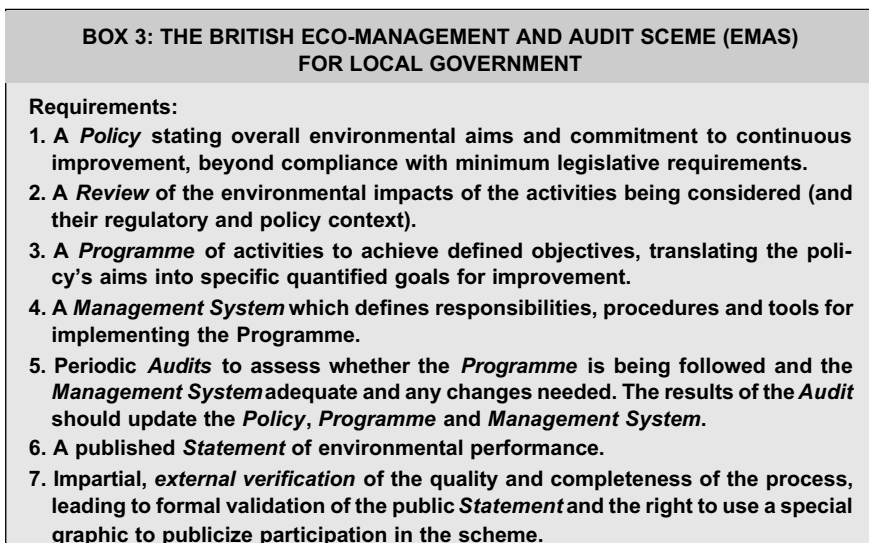
    i. internal auditing of the municipality;

    ii. external auditing of the community.

Different names are used from country to country to describe these two and their constituent parts but the basics are often very similar. Internal audits seek to assess and respond to the organizational impacts of the local authority upon its immediate environment – they seek to review and evaluate in a rigorous way the environmental performance of the local authority. External audits on the other hand, review and evaluate local environmental conditions and resources more generally – they seek to review and evaluate in a rigorous way the environmental performance of the local community.

One way of conceptualizing internal environmental auditing is perhaps to compare its role with that of environmental impact assessment. See Box 2.

BOX 2: THE REVIEW AND EVALUATION PROCESS,
EIA AND EA COMPARED

PRE-IMPLEMENTATION	POST-IMPLEMENTATION

E.I.A .   **ENVIRONMENTAL AUDITING**

PLANS AND POLICIES

PROJECTS AND ACTIONS

ORGANIZATIONS AND INSTALLATIONS

A good example of a well developed system of internal auditing is provided by the British EMAS scheme for local government (see Box 3), which has tried to adapt the EU's voluntary scheme for industry to the rather different circumstances of local government, although other schemes of a similar nature have been devised. Of the case study authorities Kirkless and Sundsvall had been practising some form of internal auditing.

BOX 3: THE BRITISH ECO-MANAGEMENT AND AUDIT SCEME (EMAS)
FOR LOCAL GOVERNMENT

Requirements:

1. A *Policy* stating overall environmental aims and commitment to continuous improvement, beyond compliance with minimum legislative requirements.
2. A *Review* of the environmental impacts of the activities being considered (and their regulatory and policy context).
3. A *Programme* of activities to achieve defined objectives, translating the policy's aims into specific quantified goals for improvement.
4. A *Management System* which defines responsibilities, procedures and tools for implementing the Programme.
5. Periodic *Audits* to assess whether the *Programme* is being followed and the *Management System* adequate and any changes needed. The results of the *Audit* should update the *Policy*, *Programme* and *Management System*.
6. A published *Statement* of environmental performance.
7. Impartial, *external verification* of the quality and completeness of the process, leading to formal validation of the public *Statement* and the right to use a special graphic to publicize participation in the scheme.

As far as external auditing is concerned good examples are provided by the German Environmental Status Reports and the Belconsulting approach in Belgium. Among the case studies, external auditing was carried out at Igualada and Kirklees.

The form that these two approaches has taken has emerged out of a number of key influences (see Box 4). The first (internal auditing) follows most clearly from the practice of financial auditing in the private sector, industrial world. In a sense, it seeks to apply the rigour that has come to be associated with financial auditing to reviewing and evaluating the organization's environmental health or performance, against its objectives or against imposed regulations.

BOX 4: KEY INFLUENCES ON ENVIRONMENTAL AUDITING

- **PRIVATE SECTOR:**   **FINANCIAL AUDITING**

- **PUBLIC SECTOR:**   **LAND USE SURVEYS AND PLANS**

The second (external auditing) stems more from the well-established and quite traditional experience of local authorities themselves in carrying out land use surveys when preparing to produce land use and development plans. There has been a long tradition within physical planning of Survey – Analysis – Plan or Diagnosis and Prognosis in relation to improving and protecting the physical environment. External auditing very much follows on from this, though with the exception that it is not confined to land use and development concerns.

From the financial auditing 'model' environmental auditing has been seen very much as a managerial tool, largely characterized by a top-down hierarchical approach to decision-making and decision-taking within the municipality, centred on the needs of management, dominated by experts and with a corporate-wide remit. More practically it has borrowed the notions of having standardized auditing procedures and work routines, auditing protocols and the view that auditing is largely a task for external, professionally independent, 'auditors' who report back to management by way of a written, often confidential, report.

From the land use survey 'model' on the other hand have come comprehensive surveys of environmental conditions and problems, using specified environmental indicators and monitoring systems for measuring changes in environmental resources in the local community. These are used as a basis for diagnosis and then prognosis (or analysis and then the production of environmental policy statements and action plans).

The distinction between internal and external auditing is not an exact one, it has to be said. In practice the boundaries do tend to get blurred. Local authorities that embark upon external auditing, for example, tend to review their current policies and practices towards the environment to see how effective they are or indeed whether they may in fact be a contributor to their environmental problems. However, such reviews usually focus on policies and practices that impinge mainly on outside organizations and individuals (e.g. the population as a whole) and so, as a broad generalization, the distinction is a reasonably useful one to make.

Some typical auditing 'ingredients' of the two broad types of environmental auditing are listed below (see Box 5), though not all of these are to be found in the instances where auditing is practised:

BOX 5: THE INGREDIENTS OF ENVIRONMENTAL AUDITING

I. INTERNAL AUDITING:
- **environmental policy and action plans;**
- **internal policy audits to assess whether the policies are being followed and having the effects desired of them;**
- **internal practice audits to assess whether office and work practices comply with environmental regulations and policies;**
- **monitoring of environmental data and indicators;**
- **an environmental management system which defines responsibilities, procedures and instruments for implementing environmental policies and plans;**
- **external accreditation of the quality and completeness of the internal auditing process.**

II. EXTERNAL AUDITING:
- **environmental status reports or state of the environment reports; (e.g. environmental atlases or environmental 'thermometers';**
- **environmental diagnostics;**
- **environmental accounts;**
- **environmental policy and action plans.**

Apart from the first and last of these for each type of auditing, each 'stage' in the auditing process can be carried out either by personnel from within the municipality or by outside consultants (the first and last are usually carried out in-house and by independent outsiders respectively).

Why audit?

But what role does environmental auditing perform for local authorities? Those who advocate environmental auditing suggest it may serve a number of different but complementary purposes (see Box 6). We come back to whether in fact it has these benefits later on:

BOX 6: REASONS FOR AUDITING

- **identifying environmental problems and risks/liabilities – for the municipality and the local community;**
- **establishing the comparative performance – of the local authority's practices and policies or the community's environment;**
- **evaluating current compliance with environmental regulations;**
- **evaluating current environmental performance of policies and practices (to sift effective policies and practices from ineffective);**
- **raising environmental awareness, helping to re-order priorities to favour environmental concerns and producing better informed policies;**
- **generating ideas for policy improvement;**
- **generating ideas for practice improvement – to lead by example;**
- **'green accreditation' to improve the status of the municipality.**

New styles of environmental auditing

Of course any kind of environmental auditing is something of an innovation. It is not yet so widespread that it may be called commonplace, though some parts of the total environmental auditing package are much more common than others, especially in certain countries (e.g. environmental status reports). Where auditing is being practised the conventional models of environmental auditing noted above have become well embedded: if not in the practice of auditing then certainly in the rhetoric and theory of it. However, the field is still in a state of flux. New and different styles of auditing have been emerging, especially as environmental auditing has been experimented with more and more. Many of these innovations are a reaction to the perceived inadequacies with and limitations of, the inherited approaches, though others have been more by way of developments of them. Local authorities have adapted and tailored their own styles of auditing to the particular circumstances of environmental policy and of public sector organizations (see Box 7):

BOX 7: INNOVATIONS

1.Corporate wide internal auditing
- **Very often linked with an Environmental Management System e.g. the British EMAS scheme, the Kirklees internal audit.**

2. Bottom-up approaches
- **Spurred on by Local Agenda 21 e.g. environmental education and participation. See e.g. Sundsvall's Miljöbokslut (Environmental Balance Sheet), in-house seminars, environment days, environmental newsletters.**

3. Self-auditing and 'exchange' audits
- **e.g. Sundsvall and Kirklees.**

4. Environmental accounts
- **'green' equivalent to the financial auditor's 'profit and loss' and balance sheet. See the Sustainable Development Records system of Katrineholm, Sweden.**

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1. Corporate-wide internal auditing

Following on from the private sector auditing model, most of the early internal auditing was of particular departments, facilities or installations within the local authority – especially those that were thought likely to generate significant environmental controversies or problems (e.g. a waste treatment or district heating plant – see, for example, Sundsvall). However, the trend has been to audit the whole of the municipality – including each and every department or agency associated with it and thus including departments and facilities not usually associated with environmental concerns. Very often this is linked with the development of a comprehensive Environmental Management System. A good example is provided by the British EMAS scheme. In our case studies Kirklees was adopting such an approach: each and every department within the municipality is asked to draw up an environmental action plan and follow this up every third year to assess the extent of any implementation difficulties.

2. Bottom-up approaches

Environmental auditing does not have to be top-down in character, though most of the experience to date tends to have been in this mould. Auditing need not

simply be the province of experts and managers but may involve, not merely in an administrative capacity, a much broader range of interested parties. Spurred on by Local Agenda 21 more and more local authorities are looking to attract greater feedback (both negative and positive) on their policies and practices from the general public and from operational level staff and are doing more to involve them very directly in the auditing (evaluation and review) process. This means greater use of environmental education and further encouragement to participation. In our case studies whilst Igualada was very much in the traditional managerial mould Sundsvall was particularly noteworthy for its 'bottom-up' approach with, for example, in-house seminars, environment days, environmental newsletters and a Miljöbokslut (Environmental Balance Sheet – a booklet produced for public consumption, available in libraries, schools, etc., showing what progress had been made in improving the environment, what initiatives were being introduced, their success and what remains to be done).

3. Self-auditing and 'exchange' audits

Auditing does not have to be expensive and grandiose and one way municipalities have tried to make auditing less expensive and more accessible has been to reduce their reliance on the services of highly qualified professional, independent, auditors: training up their own staff or staff they have borrowed from a 'sister' organization for the auditing task. In the case studies, the approach adopted in Igualada and Kirklees to their external auditing has been to use outside consultants but in Sundsvall and Kirklees internal auditing has been much more 'in-house'. Such approaches attract the criticism that they tend to compromise the independence of the audit – a basic feature of the auditing approach – but there are the offsetting advantages (of cost savings) if this is done with care.

4. Environmental accounts

Although there has been very little experience of this to date a few local authorities have prepared what might be termed environmental accounts and budgets, a sort of 'green' equivalent to the financial auditor's 'profit and loss' and balance sheet. These go beyond the usual survey reports of environmental conditions: assigning monetary values to environmental resources and/or identifying both stocks and flows over time of environmental resources (both renewable and non-renewable). An exploratory example is provided by the Sustainable Development Records system of Katrineholm, Sweden.

Does it work?

The most important question of course is, has environmental auditing made any difference? Does it work? Or has it meant just another layer of bureaucracy? There are certainly dangers of this and the British EMAS scheme, for example, has certainly been criticized along these lines.

In the research we asked our case study municipalities to tell us about the lessons they and others feel they had learned as a result of their experience with environmental auditing. See Box 8.

BOX 8: SOME LESSONS

Much depends on successful implementation:
- **Need for corporate-wide and management level commitment – can be encouraged by strong and clear executive mandate and a separate environmental initiatives budget.**
- **Auditing as a marketing or public relations exercise will not be sufficient.**
- **Emphasis must be on output rather than on process. Clear, simple and measurable targets and benchmarks need to be set.**
- **Self auditing may be less costly and provide low key image but there are dangers. The audit needs to be seen as an objective exercise. Audit swaps may be a suitable low cost alternative.**
- **Competence of auditors is very important.**
- **Inertia may mean a role for central government.**

Potential advantages for local authorities from environmental auditing:
- **Stronger and cost effective self-control mechanisms for environmental protection.**
- **Generates environmental initiatives. Helps to raise consciousness about 'soft' issues.**
- **Raises awareness among unsympathetic groups.**
- **Serves a useful coordinating function.**

Much clearly depends on how successfully the auditing enterprise is implemented – not always easy to achieve:

- Much depends on the degree of corporate-wide and management level commitment to the scheme – relying on a single 'Environment' Department, by giving it responsibility for seeing the auditing process through, will not be enough. Greater corporate commitment can be encouraged by the central executive body giving a strong and clear mandate for environmental improvement and by setting up a separate environmental initiatives budget.

- Using environmental auditing simply as a marketing or public relations exercise will not in itself be sufficient to convince clients and staff that corporate thinking has undergone a radical change.

- The emphasis must be on output (to the client) rather than on process. The belief that getting the 'production' process right will inevitably lead to a better product is too simplistic. Clear, simple and measurable targets and benchmarks need to be set and evidence provided at regular intervals that they are being worked towards and achieved.

- Although self auditing may be less costly and may give the auditing process a lower key image there are dangers. The audit needs to be seen as an objective exercise if it is to yield a full range of benefits and there is a danger of bias and impartiality if there is no external checking of the auditing process (or no use of an independent auditor). External auditors can more easily point to strengths and weaknesses and suggest areas for improvement. Audit swaps may be a suitable low cost alternative.

- The competence of auditors is very important. It is a demanding task requiring a whole host of different (and multidisciplinary) skills.

- The inertia that prevents municipalities from taking on new tasks may mean that there is some role for central government in prodding municipalities into thinking in different and innovative ways.

There are no quick fixes in the world of environmental auditing. On the contrary, commitment over the long term is necessary. 'The environment has to be in the organization's blood'.

On the positive side, there are clearly a number of potential advantages for local authorities that have resulted when environmental auditing has been introduced, particularly when the main purpose of the environmental auditing task is seen to be that of raising the quality and the profile of an authority's environmental work:

- Internal auditing in particular helps to strengthen the municipality's own self-control mechanisms for environmental protection. And it does this in a way that does not necessarily have to be high budget.

- There is evidence that the auditing process does help to generate environmental initiatives that would not otherwise have emerged. In particular it helps to raise consciousness about the importance of so-called 'soft' issues e.g. attitudes, knowledge, organization and the division of responsibilities. Green purchasing and clean office projects are frequently linked with and came out of auditing experiments. In this respect auditing of a bottom-up style has some strong arguments to recommend it. Ideas for performance improvement are as likely to come from operational level staff and the general public as from the executive.

- There is also evidence that auditing does help to raise awareness among departments and sections of the municipality, that traditionally may be unsympathetic to environmental concerns or at least have shown little interest in them (e.g. economic development departments or units). Local authority staff are of course busy people and as a result tend to be focused on the essentials of their own terms of reference. Environmental work and auditing can appear a luxury and an unwanted intrusion into the work of more well established service orientated departments. However, most of the evidence suggests that a properly and sensitively run environmental auditing procedure can break down such barriers.

- Whilst audits may not reveal anything new – there is no golden rule that they will – in the sense that they may not discover things that someone in the organization does not already know, the audit can produce an overall, collected picture which any one individual or group cannot. It has in this sense a useful coordinating function.

Conclusion

Environmental auditing is a new and developing area for local authorities. At the moment it is a little like an incomplete jigsaw: the boundary lacks a straight edge and there are some missing pieces in the middle. But things are changing quickly. The environmental auditing jigsaw is gradually being pieced together.

Indeed, so steadfast has the maturing of environmental auditing been that considerable pressure has built up for some kind of professional status for those

employed in its practice. As an integral part of this there has also been a strong move to try and standardize the auditing approaches that are used. In the long run there is a real risk that this will lead to the bureaucratization of auditing, reducing the flow of new innovation. However, at the moment the impetus for refinement and development is still sure. It is difficult to be certain about what the future will bring but there seems little doubt that environmental auditing is here to stay.

Internal auditing comes mainly at the REVIEW stage (with the implication that this may produce feedback and change goals, objectives, targets, plans and practices).

External auditing comes mainly at the SURVEY and ANALYSIS stages (with the implication that it will help identify problems and better policies, practices, plans).

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Transportation and public spaces:

The connective tissue of the sustainable city
(Perugia, Italy)

Dr Fabio Maria Ciuffini

The vital relationship between public spaces, city and society: a cultural heritage that is nourished by history and daily life

Every city is made up of private spaces which are lived in by individuals and public spaces, which are used by society. Based on this distinction, the urban fabric has an "inside" and an "outside". The inside of the city may not be familiar to most of its citizens; the outside – its streets, squares, public parks and the facades of buildings that border them – is a resource used by all the inhabitants of the city. Public spaces furnish the "external" image of a city, the one most of us see in our lifetime.

The quality and extension of public spaces give a strong indication of the quality of life in a city, since they are places where an individual interacts with society. This is true not only because, if public space is not livable and attractive – or worse, if it is squalid, unhealthy or dangerous – then our private spaces become places of forced confinement, an obligatory refuge rather than a choice.

Public space should always offer something that cannot be found inside a home or even in the best office: a chance to mingle, to share, to coexist with others, a place where the unexpected can take place, an opportunity for sensations we cannot get inside our homes. When public space is not like that and nowadays it often is not – the entire social life of a city suffers: the quality of life diminishes, despite all the statistics attesting to material growth.

The need for public space is confirmed by the fact that projects to close certain areas of city centres to traffic are almost always met with the enthusiasm of the public. The thousands and thousands of people who use these "reclaimed" areas are proof that there is an unsatisfied need to restore the original purpose of those spaces.

The notion of "public space" must be broadened to include not only surface areas, but also the space surrounding the façades of buildings and the underground areas which house major channels and more and more frequently, parking areas. That this 3-dimensional approach is valid is confirmed by the fact that the U-configuration has a specific effect on the air circulation and effluents produced within such areas (canyon effect).

Another aspect to be examined concerns underground public spaces: they are recent additions to "classical" spaces and are created when mass transit abandons external public spaces and goes underground, in part relinquishing the view of the city. These are the public spaces of "modern times".

The main reason for the loss of public space in our cities has been the gradual prevalence of mechanized transport – mostly automobiles – over all other means

of transport. In fact the most common model of movement today is the transfer from one private space to another private space, in which we remain wrapped in the cocoon of our cars. In many cities, most public spaces have been reduced purely to a space for transfers. The very term "door to door", which expresses the highest aspirations of the car owner, means that we live without that mediation between living alone and living in community that is offered by adequate, attractive public spaces, even if we use them only to walk to the nearest bus stop.

Let us look for a moment at some aspects that will help us understand the purpose of this study.

Within public spaces, we can make distinctions based on the kinds of use for the transfer of people and things. There are spaces destined for pedestrian mobility, spaces for mechanized public transport and those for mechanized private individual transport – automobiles. This means that public space (in the 3-dimensional sense too) must be considered a scarce resource.

For a long time, these spaces were equally balanced. Today, public space is heavily weighted toward the third use – for private cars. The result is that traffic has exceeded the geometric capacity of roads and cars have begun to hinder one another and to interrupt the flow of public transit. The answer has been to devote more and more public space to cars, through the construction of still more roads.

Paradoxically, as we will see, if measures are taken to reduce the number of cars in circulation, the remaining cars will be able to move in a way to cause the least possible environmental harm and traffic problems: all traffic could flow freely, at moderate speeds.

How can we deal with the problem of mobility? For years we have followed the practice of adapting the city to the car. Today mobility is often little more than auto-mobility! And currently, mobility cannot be increased without producing more disadvantages than advantages. Moreover, individual vehicular mobility cannot increase any further without the creation of new road surfaces. But urban space is limited and must be conserved; every new road we build would also create new environmental damage.

In the city, the increase of mobility due to a car does not increase accessibility to the city, but actually worsens it. Therefore it is necessary to take measures to reconcile mobility and accessibility within an urban space and this must be done through a reduction in the number of automobiles and an increase in alternative, non-mechanized transportation. In other words, to preserve mobility, our cities must offer service that is comparable to, or better than, the use of the private car.

Figure 1 shows that the city-automobile relationship has gone through at least three phases: a first phase, in which automobiles gradually filled the large urban spaces inherited from the city "before the car" and in which this brought many advantages and few disadvantages and the current phase in which the accumulated disadvantages have surpassed the advantages. Between the two phases there is an intermediate one, generally short-lived, which can be placed at twenty or thirty years ago – in which the apportionment among automobiles and other means of transfer was at an "optimum" in terms of advantages/disadvantages.

Fig. 1. Diagram of the new plan for circulation in the city of Geneva
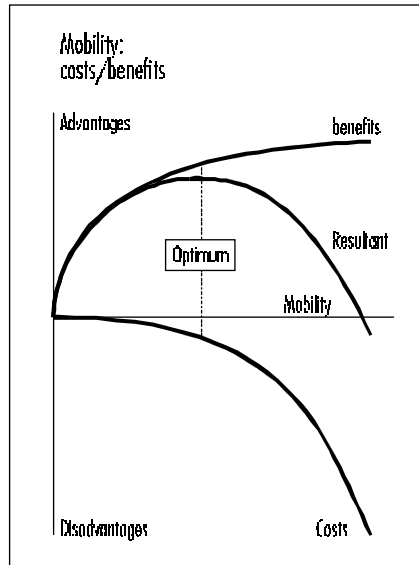
It is clear that every use (and every earmarking) of the scarce resource of public space must be based on principles of equity and produce advantages and disadvantages that are, at least, balanced. Otherwise, as we said above, you do not have a fair apportionment of space, you have only a "fair" apportionment of disadvantages.

One of the most worrisome facts about the imbalances in the use of public spaces is this: the imbalance itself contains the seeds of its own aggravation. Many examples demonstrate that the more that "auto-mobility" contributes to the degradation of life in public spaces, the greater is the need for them. A vicious circle that must be broken!

Today some cities have better levels of mobility than others. They are the ones in which mass transit functions well, where most citizens can be transported without cars. They are the cities in which the transportation system has been adapted to the city and its society, rather than the city to the car.

To demonstrate the possibility of this theory, we propose the projection of a model "in the extreme": a car-free city.

The model of a car-free city

Do without automobiles? When all the forecasts based on pure extrapolation of current trends say the exact opposite? Yet past and recent history demonstrate how the entire social phenomenology can contain discontinuity and the modification of acquired trends, every time there is a change in values and the interests at stake. "Car-free city" is a projected scenario, traced in what today appears to be an extreme condition, a pure case of study, which however can be used to verify what would happen if . . .

Projections on this model show that the "city without cars" costs much less than the car-full city simply in terms of monetary costs.

A concept that can be used to link the existing city with the theoretical city is the pedestrian Proximity Unit (PU). Between PUs, public transportation is provided.

A comparison of the total costs (calculated in the study titled "Car-Free Cities") gives the following table (city with cars equals a base cost of 100):

Density of cities pop/km²	Car-free city cost	City with cars cost
50	34	100
80	30	100
110	28	100
140	27	100
170	25	100
200	24	100
250	22	100
300	20	100

The car-free-city costs three to five times less than the car-full one! Of course, if we consider the externalities as well, the car-free city becomes even more attractive.

From the car-full city to the car-free city

It has been proven that there are ways to improve the aesthetic and environmental quality of public spaces, increasing both the mobility of the inhabitants and the accessibility to various parts of the city. This may seem, at first glance, like the miracle of the loaves and fishes, but it is possible through a radical improvement of the spatial efficiency of systems of transportation: in other words, space multiplied by time.

A correct charge for the occupation of public spaces must take into account not only the size of space occupied, but also the length of time for which it is occupied. That is what is currently done to calculate the fees for parking places, for café tables outdoors and for stands in marketplaces.

Every parked vehicle occupies a certain space for a certain amount of time. Calculations show that at the current rate of "rental of public space", to park a car in Italy on a regular basis is equivalent to about one million lire a year. But this amount is neither paid, nor even charged, even though it would be legal to do so. On the other hand, public-transit vehicles, which are always on the move, do not occupy any significant space or time in parking in the city. These facts alone should make us reflect. An effective description of this principle is provided by the well-known photographic experiment made by the city of Strasbourg.

And that is not the only thing. The space-by-time ratio per passenger is diminished radically if the passenger is in a public-transit vehicle rather than in a private car: A woman in a bus takes up 8 times less public space than she does in a car. Looking at it another way, the same quantity of space can fit 8 times as many people! *This* is the miracle of loaves and fishes!

The possibility of using electric vehicles, or hybrid-electric or hybrid-hydraulic ones, which contain almost no pollutants per passenger, is an effective way to

combine spatial efficiency with environmental efficiency and produce a total transport system that is based more on mass transit and less on private vehicles.

The key is in realizing that there are limits to the use of the city and we must allot urban space according to a priority system that favours the most spatially efficient means of transport. In other words, transport which, under equal conditions of space multiplied by time, will serve the greatest number of passengers.

In conclusion, policies for an alternative use of public space must abandon the models of urban development and mobility based on the widespread and intrusive use of the private car. These have proven unbalanced, they have consumed and continue to consume an increasingly large chunk of public space and energy resources and they cause environmental damage which may be irreversible.

Instead we must look for balanced models which allow a sustainable development both of mobility and of the city itself. Some of these could be: the creation of pedestrian zones, the creation of sidewalks of adequate width, the creation of bicycle lanes, streets reserved for public-transit vehicles, parking "on rotation" and parking in the city centre restricted to residents.

But to work well, such measures must be supplemented with public transport that is attractive, efficient and functional.

Applying the above points gives rise to the apparent paradox: where public transit can move faster, private vehicles can also move faster. But it is not a paradox, if we recall the concept of spatial efficiency and the fact that roads, freed up by people who choose to take public transit because it is faster and more appealing, allow greater velocity to the private cars that remain.

It is hardly necessary to point out that for each increase in global speed, there is a corresponding diminution in overall time spent by citizens for their daily travel. This is *freed* time that can be used for other activities, perhaps, even, activities that can be enjoyed in *freed* public spaces.

Comparing small, medium and large cities, accessibility can be calculated in terms of time taken to reach various poles of attraction (place of work or study and where we go for daily needs) in relation to the places where we carry out optional activities. It is worth noting that inhabitants of large cities are more willing to spend larger amounts of time getting from one place to another.

In gathering information on these displacements, the time-lots were organized into periods of 15 minutes or less, 16–30 minutes, 31–60 minutes and more than one hour. In small and medium cities, the large majority of inhabitants find that only displacements of 15 minutes or less are acceptable. Only a tiny minority accept times of more than an hour. The median is about 20 minutes.

It has been established that most inhabitants tend to move in areas that do not require displacements of more than a quarter of an hour, whether they are on foot, bicycle or in mechanized transport. This is called "temporal proximity": it is the main element in evaluating the quality of accessibility. Today, most cities effectively are organized in "proximity units" which meet the needs of most inhabitants within this "temporal area".

For the purposes of study, let us use "Qt" to denominate the percentage of people who in a given city are used to travelling within the confines of temporal proximity and "100 minus Qt" (100 – Qt) for those who are obliged to move in a larger displacement time. The first group represents those who have been able

to balance their space within the time commonly accepted as proximity-time. The second group represents those who move in longer time spans, probably also in larger areas. Problems occur when people placed in the first group find themselves catapulted into the second group; they perceive a crisis in their own relationship with space and the city.

The crisis in our cities can be seen (among other things) as a colossal waste of time for its citizens, a waste of that precious resource which modern transportation supposedly guaranteed us.

The first line of defence must be to reorganize space, remodelling cities and increasing temporal efficiency. The second must be to reorganize the overall time spent by its inhabitants, by reorganizing transportation systems to favour the greatest "spatial efficiency". Space can be remodelled by organizing proximity units differently. And time can be remodelled by reorganizing the use of public spaces. The use of collective transport is the most efficient way to assure accessibility.

Pedestrianism. A recent study on mobility in Venice illustrated "Pedestrianism" as a means of transport! This is worth noting, because walking is not only dismissed by many transport planners as not worthy of consideration, but it is the victim of class prejudice as well. For decades the middle-class dream has been the possession of an automobile; walking was for people who could not yet afford one.

Walking is obviously the most economic form of transit and the most frugal way to use the space-time resource. Slowly but surely, the tendency is to restore value to walking. One way this is being done is through the creation of pedestrian zones in cities. The next way must be to offer speedy and frequent public transit. Overall, citizens must accept the idea of walking as a positive alternative to the use of the car.

The real case of Perugia. The city of Perugia, in central Italy, represents a "mature" situation, one in which a certain set of urbanistic elements have been consolidated over a number of years. The "car-free city" has been applied in part here with the closing of much of the historic centre to traffic and encouraging a modal distribution in favour of public transport, including two sets of escalators and three sets of lifts ("pedestrian métro"). The historic centre of Perugia, almost completely converted to a pedestrian area, is a good illustration of proximity units. In this city, for our study, a random-sample poll of 1 200 people (one in four passers-by) was conducted to find out how satisfied citizens were with the alternative methods of transport and, in particular, with the distances they covered on foot. The modal split of displacements toward the city centre was also measured. Based on this information, the diagram of "Walking distances considered acceptable/Percentage of acceptance" was plotted (presumably valid for all comparable situations), an important factor for establishing what percentage of inhabitants would accept walking within their units of proximity.

Adapting the theory. Applying the "car-free city" philosophy means constructing a transport system with elevated spatial efficiency and reorganizing a city so time and energy spent by citizens is as efficient as possible. To do this, we need certain data: on population, transportation, environment, public transit, car use, parking. We also need to know the surface area of the city and the layout of its various neighbourhoods. An Origin–Destination (O–D) table is essential.

A method for adapting the theoretical model of each city was built in the study, based on the following four steps:

A. Certain areas of the city have been constructed for car use. These zones, usually residential and outside the city, are not suitable for adaptation to the "car-free city" project. The study therefore leaves those areas to "auto-mobility" and concentrates instead on eliminating the excess of cars in the "dense city".

B. In those denser parts of the city, "proximity units" must be determined: they are the nuclei of primary services used by citizens. Definition of the proximity unit determines the mesh of the PU's transport network. The larger the PU, the easier it is to build a public-transit network – but the more people will also choose to use their cars.
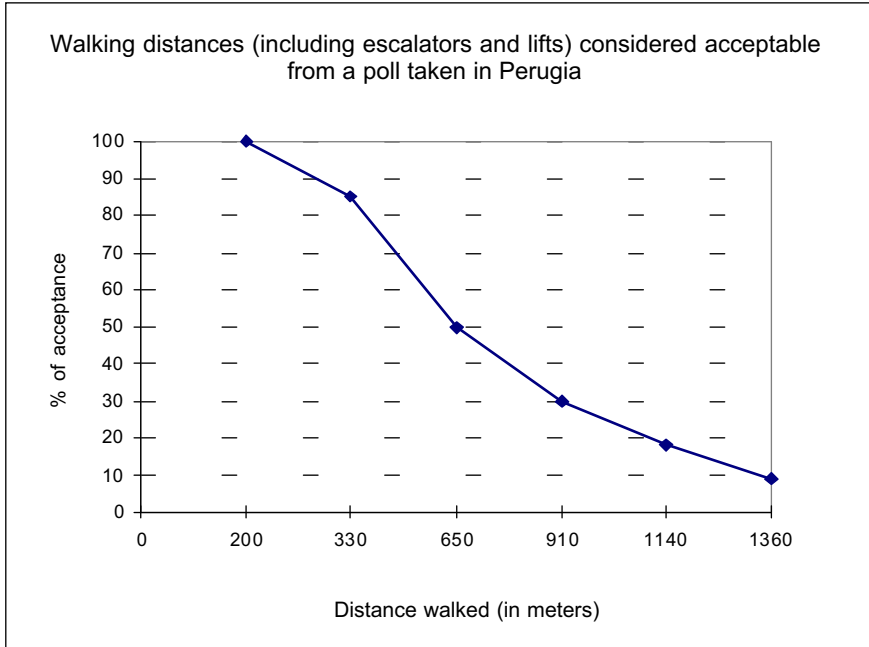
C. Define automobile use *between* PUs. The quantity of automobiles which can circulate is established by the diagram "Walking distances considered acceptable/Percentage of acceptance", which in turn is based on the size of the Proximity Units and therefore of the transit network.

D. Create a graph of public-transport lines and remaining routes for automobiles and later, through an assignment model (e.g. ME2), establish the new, reduced flow of traffic (fewer automobiles and more public transit) in each street. The method should demonstrate the possibility of reducing the number of cars and increasing the use of public transit, while not obliging anyone to walk distances greater than those (probably) considered acceptable.

Conditions for achieving the drastic reduction of cars in cities

How can the excess of automobiles be reduced?

1. Establish, through data and a computer program, how many cars can be in circulation at one time without damaging the environment by defining the maximum environmental capacity expressed in the number of vehicles and ascertaining both the zone in which the vehicular circulation is excessive and the number of vehicles (mainly cars) in excess. Establish the "environmental efficiency" for each transport mix.

2. Identify all the difficulties to be overcome in order to modify mobility and therefore individual and social behaviour. These are very real psychological thresholds which we must keep in mind and which can help to define a true major or minor "psychological efficiency", depending on how the restrictive measures are adopted, publicized and carried out.

3. Furnish alternative options by putting equally useful alternative options of transport at the disposal of passengers who are today served only by cars.

4. Reorganize public spaces, giving priority to pedestrians and public transport – that is, to modes of transport which are spatially more efficient. Enlarge sidewalks, make pedestrian zones out of the more important areas, turn downtowns into pedestrian zones in order increase global accessibility in cities which are today suffering from congestion. With this, however, we must provide some preventive "filtration" measures and/or charge for circulation and parking (i.e. area-pricing and road-pricing) to discourage use of the car.

Walking distances (including escalators and lifts) considered acceptable from a poll taken in Perugia

5. Accustom the city to a new mix of transit options, acting at an urbanistic level to gradually adapt the city to new transport mix, exalting proximity and "mixity".

In other words we must find a new configuration of transport which permits us to verify three equilibriums:
- transportation equilibrium: all those who give up the use of the car should be transported in efficient public-transport conditions;
- environmental equilibrium: the total sum of pollution must remain below endurance level;
- economic equilibrium.

Environmental thresholds. Automobiles beyond certain limits may be viewed as pollutants in the medium that is the city. This "pollution" affects public spaces through: using public spaces too much in favour of cars (for parking, to build roads), "visual pollution" constituted by traffic, the emptying of the city centre and the increase of urban sprawl. The "pollution" also affects mobility – through congestion, traffic accidents and unsafe roads, vehicle noise and air pollution.

Other more global problems caused by cars are the ozone layer, CO_2 emissions and the waste of non-renewable energy resources.

Fortunately it is becoming clear, through statistics, that cities with good public transit and fewer cars are considered the most attractive places to live.

Psychological thresholds. For many people, limiting car use is equal to limiting alcohol, food – or sex. Even urban planners have difficulty conceiving of a lifestyle without cars. Still, there is some hope. Polls in various cities show that for most people, the worst problem these days is traffic.

The "car-free cities club" unites cities that agree on two main points:.

- There are too many cars and their use must be reduced;
- Mobility *without* cars must be favoured.

In short, citizens should be able to *live* the city without the car.

New Market Oriented Transport Systems (NMOTS) as an alternative to cars.

Adapting the transport to the city is the main goal of the "car-free city" research.

In studying the urban transportation market, external and internal factors must be considered. Research must be done in a way to compare different transport systems under varying conditions. The main purpose is to evaluate the impact differential of innovative technological factors (in construction and management) of NMOTS from a user-oriented (market) point of view. The attractiveness of different modes of transport would take into account that travellers often use several modes of transport for a single journey; that journeys are increasingly multi-purpose; that some physical transfers can be avoided through telematics; etc.

It is essential to identify strong and weak points of different modes of transport as seen by different users and in climatic and economic conditions of each city. Existing transport systems would also be classified by the way they are used and initiatives studied which would improve transport within PUs or between them.

Functional and feasible hypothesis. Posing a "half-real" city, we will hypothesize a new kind of zoning to see if it can be adapted to the "car-free city" concepts above. The hypothesis will be adapted to different kinds of city areas: medieval/historic centres, 19th-century expansion, first ring of outskirts, second ring of outskirts, "auto-dominions" (extreme outskirts).

Direct costs and hidden costs. The balance sheet of the car-free city must take into account hidden costs – the negative "externalities" produced by private cars (and the positive ones of public transport). In any case, even if the "car-free city" costs less, the municipal administration will be more involved because it will have to concern itself more with the problems of mobility, which today as a rule are simply the concern of families vis à vis big automakers and fuel distributors, etc.

Development of indicators for challenging the transport policies of cities

A "measurable" index of transport quality would be based on:
- Equi-mobility: all classes and ages of people can move around a city as they wish;
- Mobility possibilities are within environmental thresholds;
- Time spent in transit is within (or below) commonly accepted thresholds.

It should be noted that when proximity and "mixity" are optimum, mobility always improves. Quality of mobility can be measured by three kinds of costs: social costs, environmental costs, overall costs. A good indicator in synthesis could be global speed as **global length of all urban journeys by the population of one city** divided by: **global time of these journeys.**

This indicator is a very important one, because in the mind of a city's inhabitants the increase in journey speed[2] (or, better, the decrease in time spent in

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[2] Not exceeding a safe road speed, obviously.

journeys) is often the main motivation in choosing the car as a means of transportation.

Liberating space from cars: toward a new urban space
The report examines the use of public space, summarizing what has been said before:

- Are market forces alone sufficient to solve the problems of public space?
- Aim for maximum attractiveness with maximum accessibility: re-discover the benefits of socialization and encounters.
- Aim for pedestrianism that is total: freedom in space, without the physical limitations currently imposed by cars. Public space should become "second nature".

Most citizens, sooner or later, will be using the new spaces which will increasingly typify the city or neighbourhood in which they are located and have been reclaimed.

Our goal should therefore be twofold:

1. Reclamation of the original aspect of the public spaces, including removal of traffic-circulation signs and posters which frequently have been left on footpaths and in converted pedestrian areas;

2. Redesigning spaces accordingly; for instance, planting flowers along newly-reclaimed pedestrian streets.

In this way it should be possible to re-introduce a typical aspect of "agorà": multi-directional movement by people on foot who are free to stop and chat with others at any point and for as long as they like, with no fear of being squashed or hit – not only by cars, but also by motorbikes and bicycles (the last of which should be banned absolutely in pedestrian zones unless wheeled by hand).

Scenes from old photos and paintings contain a lesson: they show us people moving in all directions, not forced to cling close to the walls of buildings like mice or do a slalom in the middle of cars!

The means for pedestrianism must be total and the sensation should be one of total freedom in the relationship with surrounding space. A sensation not unlike that which one feels after taking off a pair of shoes which are too tight!

Only in this way will public space become "second nature", constructed by people and dedicated exclusively to them.

Integrating Environmental Health into Sustainable Development:

A Health Care Waste Treatment Case Study

(WHO European Centre for Environment and Health, Nancy, France)

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Tools to integrate Environmental Health into a Sustainable Development Pattern:

Health-and-environment imperatives in sustainable development require a comprehensive approach to urban and regional planning in order to consider health impacts as an integral part of the long term planning process. It is essential to have the commitment and cooperation of local and regional governments. Five basic principles should always be kept in mind: a multisectoral approach, cross-disciplines, public participation, flexibility and elegance. The focus is being shifted from singular projects that address, for example, solid wastes, to projects that include the full range of urban or regional environmental health problems. Health-and-environment issues can no longer be dealt with solely by traditional environmental health groups; all relevant parties, as well as all other projects developed by other parties should integrate possible health-and-environment impacts.

The proper management and disposal of health care waste have become matters of notable concern in several countries in Europe. They are of concern not because of the volume generated or the sources of production, but because of the potential for these wastes to be injurious to human health and pollutants of water resources and local residential areas. The situation of heightened concern has been catalysed by the enactment of stricter air pollution and waste management laws in several countries. Very many hospital-based incinerators will be technically and financially unable to meet new air quality guidelines.

This case study represents an example where environmental, health and economic concerns can be resolved in an integrated and sustainable way. This example will explore the technical and social issues surrounding health care waste management and then detail the methodology (data collection, interpretation and options development work) undertaken by a WHO-backed project team. The subsequent results of the study and its implications for policy makers to address will be explained. It is believed the case study is a tangible demonstration of how to achieve compliance to stricter environmental regulations within countries where available financial resources are limited. Concentration of health care waste treatment into a limited number of facilities, each operating at a high rate of utilization, probably offers the best solution to meeting new standards safely at the lowest increased unit cost.

ICP/CEH/410
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Introduction

The UN Conference on Environment and Development (UNCED) in Rio in June 1992 set in motion machinery to bring about environmentally sound and sustainable development. This provided a challenge and an opportunity for the WHO and the health sector to ensure that health-and-environment imperatives are addressed adequately by on-going national and local planning. Since Rio, various steps have been taken in national planning and implementing procedures for sustainable development. We will come back to some examples later. In many countries, inter-ministerial committees or commissions have been set up to ensure **intersectoral participation** and **partnership** in urban and regional planning.

A global strategy

The WHO, in cooperation with UNDP's Capacity 21 Programme, is supporting initiatives in many countries to incorporate health-and-environment considerations in national plans for sustainable development. A guideline for national governments is being prepared and should be available this year. There is an immediate need for each and every country to consider health-and-environment issues in planning for sustainable development.

However, Agenda 21 insists that sustainable development will only happen if it is explicitly planned for. On every question or issue to be resolved, it specifies a patient and thorough process of considering a wide range of issues together, making explicit decisions about priorities, trade-offs and choices and creating and refining long term frameworks of control, incentives and motivation completed with quantitative, dated targets in order to achieve what as been decided. Plans, policies and strategies are called for on a wide range of levels i.e. international, national, regional or local.

Cohesive and coherent policies need to be built on rational and valid information. The "**bottom up**" approach in opposition to the "**top-down**" approach requires more effort, however, the decisions resulting are more realistic and coherent and in the long run less costly and more supportive to environmental health. The work undertaken by WHO Nancy Project Office in a central European country with local specialists to solve the problem of the treatment of health care waste is an example of this approach favour by the Nancy Project Office.

By detailing the work undertaken by the project team – data collection, interpretation and development options – the results could be accessible to policy-makers at a national level to produce a more cohesive policy and evaluate the technical, environmental, social, health and economic impacts of their choices. Therefore, the decision of treating health care wastes on a local or regional basis could be taken by the appropriate decision-makers or politicians with all the relevant information.

Health-and-Environment imperatives in sustainable development

Some basic elements are needed to make sure that health-and-environment preoccupations are incorporated in sustainable development:

- clear vision based on a good understanding of the opportunities and constraints and the establishment of goals, objectives and priorities;

- overall approaches for urban and regional planning in order to consider health impacts as an integral part of the long term planning process;
- comprehensive approaches for water supply and sanitation in order to include hygiene education, operation and maintenance and health surveillance;
- development of health based legislation and regulations for the protection of air, water and food;
- proper management and disposal of health care and hazardous wastes;
- incorporation of health measures in contingency planning for chemical and other accidents;
- integration of health preoccupations in elaborating urban or regional master plans or environmental impact assessments;
- establishment of linkages of environmental data information on health consequences particularly during environmental impact assessment;
- adjustment of the training of both urban planners and health professionals to eliminate barriers;
- sensitize decision-makers, politicians, senior level bureaucrats to the importance and impact of their decisions, involving them in addressing those aspects of relevance to them.

Integrating environmental and health issues in local and regional planning approach

The majority of the statements in Agenda 21 which have been adopted by national governments cannot be delivered without the commitment and cooperation of local or regional governments. The International Council for Local Environmental Initiatives (ICLEI) responded to the mandate from UNCED for local governments to establish "Local Agenda 21s" by elaborating a programme comprised of three main components:

- the Local Agenda 21 Model Communities Programme: a research project to design, test and evaluate various options for integrated environmental planning;
- the Local Agenda 21 Communities Network: a larger network of local governments and their partners which are undertaking sustainable development planning programmes;
- the Local Agenda 21 Campaigns: an effort to address the sustainable development in the context of local needs and concerns.

Beyond all these efforts, we have to remember that the establishment of a comprehensive action plan for sustainable development has to be undertaken at the local level because that is where the needs and concerns originating from people are the most accurate. It is also the place where health issues could be better considered.

To avoid the imposition of a rigid framework, ICLEI has established four basic planning elements.

- *Community consultation* to define problems, set priorities, develop solutions and implement programmes;
- *Sustainable development auditing* to ensure that decisions are based on sound and viable information;

- *Target setting* based on priorities set by the community and taking into account results of audits and resources available, which would serve as the backbone of a Local Agenda 21 strategic plan and be incorporated into health plans prepared by a city;
- *Development and use of indicators* to monitor and evaluate progress towards the goals and targets set by the community.

Local Agenda 21s should be based on *five basic principles* according to ICLEI:

- *Multisectoral* because there is a need to go beyond that part of the problem affecting our part of the problem;
- *Cross-disciplinary* because we must move away from addressing systemic problems through the narrow perspective of our own discipline to make holistic assessments and responses to systematic problems;
- *Public participation* in solving systematic problems: involvement of people at the grassroots is critical to success;
- *Flexibility* because rapid change can quickly make costly infrastructure and service commitments obsolete and uneconomic;
- *Elegance* means the ability to serve many purposes or solve multiple problems with each investment of resources or energy.

Some examples

Many countries already experienced some of these practices:

In the **United Kingdom**, a number of initiatives have been undertaken at the local level under the umbrella of Agenda 21. For example, the Kirklees Metropolitan Borough Council has developed an environment strategy and "Health for All" initiative based on the WHO principles of equity, community-participation and partnership and upon creating an environment conducive to wellbeing. In 1989, Kirklees was the first local authority in Britain to publish a health comprehensive State of the Environment Report.

In the **United States**, the Sustainable Seattle Project is made up of four initiatives which share a similar objective: to promote sustainable thinking and behaviour at all levels of society. The Sustainable Seattle Citizen's Initiative, the Environmental Priorities Project, the Comprehensive Plan, the Waste Reduction and Recycling Programme. All these initiatives address issues relevant in urban areas, such as reducing urban sprawl, reducing over-dependence on the private automobile and reducing resource consumption. The key to all of these is the identification of basic community values and thinking strategically about what can and should be done by all to honour, preserve and promote these values.

In **Canada**, many communities have already moved towards sustainable development strategies. The Regional Environment Committee coordinated a forum to determine the process for implementing sustainable development within the Lac St-Jean Region. The Region is implementing a sustainable development strategy. The Official Plan and Economic Strategy of the Regional Municipality of Hamilton-Wentworth in Ontario was reviewed in light of the sustainable concept.

In **Spain**, some city councils in the Spanish national network of WHO Healthy Cities are developing a strategic framework for a favourable environment. They are also looking for ways to implement their new health remit. In

Seville, the vision of the healthy city was translated into strategic planning by developing and consolidating the health information system. Action for positive health should be part of the "sustainable way" of planning the future of cities and integrating health-and-environment concerns.

Before embarking on the second part of this paper with a more specific example related to health care waste in a central European country, we should remember that the post-UNCED era calls for fundamental changes in approach to health, environment and development. Health-and-environment issues can no longer be dealt with solely by a traditional environmental health group but instead by a wider number of relevant parties. Environmental conditions may contribute to the incidence of many diseases, such as cancer, enteric diseases and respiratory disorders; consequently there are environmental interventions that can be used in their prevention and control. The health sector has a role to work more actively and closely with the other socio-economic development sectors. Finally, the focus of work is shifted from limited scope programmes and projects, targeting individual aspects of problems, to the multiple dimensions of health-and-environment issues. Furthermore, the focus is being shifted from singular projects that address, for example only air pollution or solid wastes, to projects that include a wide range of urban environmental health problems.

Practical case study from a central European country

There have been many calls for the improvement of air quality and waste management within this country. One initiative is the forthcoming establishment of gaseous emission standards for waste incinerators. Standards similar to draft European Union values are contained in legislation being developed. The implementation of this legislation will have profound consequences on existing health care waste treatment facilities at hospitals. There are believed to be over 700 small combustion units located at individual hospitals across the country. At present they operate on a part time basis and their operating conditions are not suited to producing gaseous discharges which would meet the forthcoming air pollution standards. Clearly, there is a need to establish new and upgraded health care waste treatment facilities and several counties, acting independently, have made contacts with government ministries and the national sources of ecological and environmental protection ("Ecofunds").

The investment necessary in new health care waste treatment equipment to meet the proposed air emission standards will be expensive. Therefore, a study was undertaken to determine the options and costs involved to develop a network of regional health care waste treatment plants.

A project team was established and personnel from the national Ministry of Environment (MoE), Ministry of Health (MoH) and national Ecofunds, with support from the WHO Project Office (European Centre for Environment and Health) were also involved. The purpose of the study was twofold. First, to investigate the quantity of health care waste requiring treatment before disposal and second, to assess the costs of different sizes of equipment and numbers of regions across the country.

An extensive questionnaire survey, supplemented by direct visits to some counties, was conducted to determine the number of hospitals, quantities and types of health care wastes. Approximately 200 000 tonnes of health care waste was estimated to be produced within hospitals every year, of this about one

quarter, approximately 50 000 tonnes, can be classified as waste requiring treatment before disposal (i.e. similar in composition to the European Union's voluntary 'health care risk waste' definition). Traditionally this material has been disposed of in small, batch incinerators and hospital boilers. Many plants are old and probably impossible to upgrade to meet the forthcoming air emission standards. Consequently a regional network of good quality waste treatment plants will be needed to handle the 50 000 tonnes of waste per year. The project team also noted that if more effective and rigorous segregation of waste could be encouraged within all hospitals, then the quantity of waste requiring treatment could be reduced by perhaps 25 or 50%. This would substantially reduce the number of new facilities required if it could be achieved. However, for the sake of the study the 50 000 tonnes per year figure was used.

Scenario development

The project team looked at the rate of waste production in each county and on a semi-intuitive basis developed four scenarios. Each scenario had a different number of regions. Each region represented a grouping of counties and the precise grouping was undertaken to minimize, as much as possible, the transport distance within the region to the theoretical best location for a treatment plant. The theoretical best location was based upon the concept of a 'bed-centre of gravity', which means a treatment plant should be placed in the locality where most of the beds are situated. The four scenarios considered in detail were:

Scenario 1: Dividing up the country into four regions
Scenario 2: Sixteen regions, each comprising three or four counties
Scenario 3: Thirty-two regions, in which some counties are paired
Scenario 4: Forty-nine regions, in which each county would have its own treatment centre.

The average transport haulage distances were high for the first two scenarios, i.e. 140 and 70 km respectively and hence transport costs were a larger proportion of the annual expenditure (up to 37%) when compared to those scenarios with more regions. In Scenario 3 the average haulage distance is 50 km and in Scenario 4 it is only 40 km. In these latter scenarios the transport cost component is estimated to be no more than 19% of annual expenditure.

Analysis of results

The most realistic costs available in the country were used wherever possible to calculate the investment cost, annual capital charges and operating costs. Individual treatment plants were sized (in terms of rated capacity) as either single or twin stream units in order to match the estimated waste production in their region. The intention was to size equipment to maximize its utilization. Therefore, wherever possible treatment centres were sized to operate on a two or three-shift basis for between five and six days per week and to achieve a 70% effective utilization. It is regarded that only by achieving a high rate of plant utilization can the inevitable additional cost of health care waste treatment that would arise from an upgraded system be kept as low as possible. In addition, the near-continuous operation of a regional treatment centre would enable the incineration equipment to be maintained at its optimum combustion conditions for a longer period of time to ensure the highest probability of meeting future air emission standards.

The results of the feasibility study were revealing and provide a solid base of information for subsequent policy decisions by the relevant ministries. It was found that the overall cost per tonne of transporting, treating and disposing of health care waste was similar for all scenarios with up to about 20 regions. The estimated average cost per tonne was between ECU 32.6 and ECU 33.5. The cost per tonne then rises steeply for scenarios with over 20 regions up to ECU 48.9 per tonne for a 49 region scenario. This increase in cost is directly attributable to the investment in a large number of incineration plants. Many of these plants would not be fully utilized on a near continuous basis but instead on one shift arrangements. Even when selecting the smallest commonly available sizes of plant it is likely that in several regions equipment would stand idle for part of the working week. As a consequence, the non-variable proportion of the operating costs, as well as the capital charges to repay investment and provide for replacement in the future, would continue to have to be financed. This increased cost is greater than the savings in transportation for scenarios with over 20 regions.

None of the scenarios investigated are incorrect. If a future policy on new treatment plant investment has its objective to minimize the cost to the country, then any regional approach with up to about 20 regions would give rise to similar costs per tonne on a national basis. Conversely, if minimizing the transportation of untreated waste and ensuring more local control and access to treatment plants were of overriding importance, then the results of the study show that the "social costs" for pursuing a 'more-than-20 regions' policy would be between 6.7 and 16.7 ECU per tonne.

The cost of upgrading existing hospital incinerators was found to be prohibitively expensive, even if it was technically possible for some units. An approximate cost, based upon experience elsewhere, for several hundred existing units gave an investment cost of over ECU 33.5 million. This is four times more expensive than developing a 49 region scenario.

Emerging technologies

Some consideration was also given to emerging technologies for health care waste treatment, notably microwaving and steam disinfection. Both these techniques are being used at a limited number of hospitals in Europe and North America and it is possible that once they become better proven and demonstrably reliable they could compete successfully with incineration. Furthermore, since they operate at lower temperatures than incineration they do not give rise to the same quantities and types of air emissions. They may also become cheaper technologies to build and operate. The size of the units are also smaller than incinerators and hence may be more appropriate in rural areas where quantities of waste production are relatively modest, or in scenarios where a large number of regions have been identified. At present it is probably not realistic to consider these technologies for use in the case study country, but over the next five or ten-year period a continuing review of their development should be undertaken. At present the investment cost and operating cost of these systems is probably similar to that estimated for the incineration in the 32 region and 49 region scenarios. However, if the cost of microwaving or steam sterilization begins to drop, due to a larger number of operations elsewhere and more competition from the suppliers, then the financial feasibility of these techniques for some places in the country may be more favourable.

Concluding remarks

The feasibility study has demonstrated that the only realistic option for upgrading health care waste treatment to meet forthcoming stringent air pollution requirements is to concentrate upon the creation of a limited number of regional treatment centres. Incineration with gas clean-up is the most robust and reliable technology currently available, but in order to minimize the increase in cost high plant utilization needs to be ensured. This would involve operating the treatment centres on a near continuous basis on two or three shift working and ensuring the catchments for waste are large enough to maintain an adequate supply. In addition, hospitals must guarantee that they will supply waste to the treatment centre. Any scenario with up to 20 regions will give a least cost to the country for developing this new infrastructure. Correspondingly, counties must come together and adopt successful working arrangements. If for social reasons the desire is to have more than 20 regional treatment centres then the overall cost will be higher. This study estimated the numerical details of the increased cost to the country that would result in satisfying these social concerns. The ultimate policy decisions are now a matter for the national ministries. The national Ecofund also has a key role to play in implementing any future health care waste policy by ensuring that investments are distributed to facilities where waste catchments are large enough (and where waste supply contracts between the hospitals and treatment centres have been agreed) to sustain a treatment operation.

After the summary of imperatives, basic planning elements and principles to integrate environmental health into a sustainable development pattern, the technical example has served to explain the methodology used for a better integration of the relevant parties, such as hospitals and county health departments, with key decision-makers. We believe too that social costs and probable public concerns will require further studies.

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Disclaimer

This paper contains personal views of the authors and does not reflect the views of the World Health Organization.

Sustainable Indicators for Urban Policy

(OECD)

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In the UK Guardian Newspaper on Wednesday, 23 March 1995, George Monbiot, author of the recently released book 'No Man's Land', writes:

> *My fear is that science is rendering itself peripheral to our concerns just when we need its ministry and guidance. While environmental crisis, social disloca-tion and increasing global poverty present us with problems, perhaps more momentous than those faced by any previous generation, many of those we look to for help appear to be turning their gaze away from the world. Studies which most people would regard as urgent, such as primary health care, ecol-ogy and conservation, the political and economic dimensions of social change, are being pushed into second place by less immediate demands.*

The understanding of the relationship between **knowledge** and **action** and between **science** and **policy** is vital if we are to progress in regards to the quality of the environment and the lives of the individuals of our society.

Every day we hear the debate between politicians seeking answers whilst analysts seek to temper responses. This conflicting relationship is clearly shown within the field of environmental research where justified social concern elicits reactions from those of us involved in policy development based on both the best knowledge available and on a dynamic system of information exchange. Sometimes the knowledge available or the designed responses are inaccurate. A recent evaluation of the efficiency of national environmental standards in the United States, by Luken and Clark, indicated that national regulations vary dramatically at local levels in regards to both responding efficiently to problems and enacting change.

This illustrates that we should increase our search for knowledge and an understanding of the results of policy, we need to clearly identify the limitations of the information we deal with and be honest with our constituents regarding their expectations of measures designed to overcome problems. Part of this ap-proach means identifying what information is best used and when it should be used.

All of us involved with the improvement of urban conditions recognize that we are entering changing times where new problems will occur and intensities of existing problems will exacerbate.

The International Herald Tribune recently reported on the results of a study conducted on the health effects of airborne particles from traffic and smoke-stacks in cities in the United States. It concluded that people in the most polluted United States cities are 15–17% more likely to die prematurely than those in

cities with cleaner air. It is obvious that we must maintain a commitment to knowledge which contributes to a better understanding of and dedication to urban areas. One way that this can be achieved is through the use of indicators.

Urban indicators seem to be in favour in urban research agendas and many organizations and various levels of government in OECD countries are undertaking research in this field. In fact indicators are frequently used even by non-researches, for example at this International Healthy and Ecological Cities Congress (Madrid, Spain, 22–25 March 1995) the Mayor of Madrid has informed us that Madrid has the second largest amount of green space per inhabitant of any European city. What is important with indicators is that something is explicitly shown, an indicator must verify something otherwise it is simply a statistic, for this to be achieved it must be directly related to an issue and to a place. For example the Mayor of Madrid's indicator answers the question: "If the quality of urban dweller's lives depends on access to open space how do the residents of Madrid fare in comparison with other European cities?"

It is important that in a movement towards efficient, equitable, healthy and sustainable cities, that methods are designed to measure the current state of conditions, the state of conditions throughout time, the pressures that are causing these conditions and the success or failure of policies designed to change conditions. These must also relate directly to a spatially distinct area based on the boundaries of issues and not just geopolitical areas. This, in essence, causes the greatest limitation and challenge for the use of urban indicators whereby the clear identification of what is to be shown is explained before information is gathered.

For example with the issue of open space in Madrid many specialists or practitioners may wish to understand this topic in different ways:

- **Ecologists** may wish to explore the various plant and animal species in the open space and their relative health;
- **Medical professionals** may wish to understand the contribution of the open space to resident's health;
- **Criminologists** may wish to know the number of attacks in the space during the night or the effectiveness of lighting systems;
- **Urban planners** may wish to understand the differentiation of private and public space and where new areas of open space should be developed particularly in relation to the proximity of residents;
- **Teachers** may wish to know what facilities are available for children;
- **Transport engineers** may wish to know the relative accessibility of different areas of open space particularly in relation to public and private transport;
- **Disabled people** may wish to know what facilities exist for allowing ease of access such as ramps and ease of use;
- **Sportspeople** may wish to to know what facilities exist for various sports such as running tracks, football ovals and hockey pitches.

It is obvious that what may at first appear to be a relatively simple indicator can become complex and may require further definition and investigation based not solely on indicator style information. For example a social survey of

the satisfaction of both users and nonusers of open or green space in a local area is necessary to fully understand the current and future potential development of open space policies.

Indicators may assist also with the simplification of complex phenomena into something that is understandable, recognizable and and which can elicit desired reactions.

An example of indicators simplifying information comes from the city of Seattle in the United States with the monitoring of the progression of the city towards a sustainable community. The city, through community involvement, created 40 indicators in the development of policies in the move toward sustainability.

> *Our goal in presenting these indicators is to alert the people of Seattle to the significant challenges we face and to ask them to get involved in finding solutions to our problems. We hope to inspire a renewed sense of citizenship and participation. These problems are only insurmountable if we fail to respond to them with courage, creativity and compassion. With all of us working together – committed to a better future for our children, and our children's children – we can create a truly sustainable Seattle.*

To this end one of the indicators used was an examination of the number of wild salmon returning to their home stream. This example may appear distant from traditional approaches to measuring sustainability; however salmon and humans have a long history in the Seattle region. Native Americans have always revered the salmon as a link to the earth and as a source of food. Salmon have astonished and nourished visitors and immigrants since the first Europeans arrived and they continue to be an important economic resource as well as an environmental indicator to Northwestern Americans of many different origins. Wild salmon are totally dependent on the health of the freshwater environment for reproduction and require clean water and a passable stream. Due to the reliance of the salmon on healthy environmental conditions the residents regarded the health of the wild salmon as a useful indicator of overall environmental conditions.

The same could be said of many other species of flora and fauna, however, due to the knowledge and the history of salmon in this region there is the advantage of an emotional contact with this indicator also. This shows that the use of indicators for encouraging social action or for explaining complex ideas is an important use.

Indicators have many limitations and have had a constant criticism of oversimplification for a long time. It is useful to recognize that indicators are useful tools if they adhere to the principles that have been outlined, i.e. that they are issue, locational and context specific and that it is clearly stated what they are being used for and what are the limitations of what they are going to show.

The example of the salmon in Seattle is important, for it comments on a broad question of whether it is possible to design to define a set of comparable urban indicators and for these to be applied across and between cities. My initial reaction to this is: no, it is not possible because local conditions, local issues, local concerns, local politics and policies define a local criteria for information

gathering. For example, the conditions for sustainability in Madrid are different from the conditions for sustainability in Stockholm. There are convergences, however, where there are subject areas which are of concern to all of us. We understand what the dynamic definition of sustainability means and how we can share experience on what indicators help us in both monitoring our own versions of an issue such as sustainability and enacting our communities through a common language.

It is with this intent that the OECD, WHO and the European Foundation for the Improvement for Living and Working Conditions have designed and are working collaboratively on the development of indicator systems for urban policy development for our individual constituents and it is in this area that we should base our exchange.

In May 1990, David Trippier the then UK Minister of State for the Environment told a conference of European ministers that 'secrecy breeds fear' and urged them to increase public access to information. Indicators can overcome both secrecy and fear in policy development but only with a clear understanding that they relate to local issues and contexts, are not immediately comparable nor transferable and they must be constantly monitored for the reactions they elicit.

What can be achieved is local empowerment in the improvement of decision-making processes. Meadows expalins this concept well.

A sustainable world can never come into being if it is not envisioned. The vision must be built up from the contributions of many people before it is complete or compelling.

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WHO's role in the Healthy Cities movement

(World Health Organization)

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In our rapidly urbanizing world, promoting and protecting the health of people living in cities presents a growing challenge to local and national governments and international organizations. Within 15 years, 20–30 cities will have over 20 million people and most of them in developing countries. More importantly, human-made environments will account for the living space of the majority of the world's population. By 1990 already, at least 600 million people in the urban areas of developing countries were living under life and health threatening conditions. One quarter of the Third World's urban population did not have access to an adequate safe water supply and one half did not have an adequate excreta-disposal system.

Health problems in cities are aggravated by growth and development that is largely unplanned, uncontrolled and chronically under-financed. Rapid urban growth is overwhelming the capacity of municipal authorities to provide basic environmental services, housing, employment and other minimum prerequisites for a healthy population. This generates severe – in some cases, explosive – health problems, social, financial and political.

People in cities – particularly the poor and newly arrived – experience stresses and exposures that result in ill health, ranging from communicable diseases and malnutrition to mental illnesses and chronic respiratory diseases. As regards urban air pollution, the most recent statistics show that an estimated 600 million people live in cities where sulphur dioxide levels exceed WHO health guidelines and 1 200 million live in cities where particulate matter exceeds WHO health guidelines. Most of these cities are in the developing countries. Unhealthy conditions include poverty, inadequate food and shelter, insecure tenure, physical crowding, poor waste disposal, unsafe working conditions, inadequate local government services, drug abuse and generalized environmental degradation in the urban fringe areas. It is actually one of my deep concerns to have to witness the persistence and increase of urban poverty. The deplorable situation of street children is an alarm signal that action is needed at all levels.

As much as we are concerned about the critical environmental health situation in our cities, there is another side to the coin. That is the **health opportunities** that are generated through urban development – and they present another challenge to the health sector of similar magnitude. Such health **opportunities** include:

· introduction of worker training, safe practices and pollution control in industrial developments;

- primary health care and health education associated with house upgrading programmes.

Health development work in cities should be an integral part of a wider urban development effort that involves urban infrastructure, land management, municipal finance, industrial development etc.

WHO's Healthy Cities Project

Healthy Cities is a programme which is fundamentally about the links between urban living conditions and health.

By launching its initiative for Healthy Cities the WHO showed foresight and decided to take up the urban challenge as early as 1986. In retrospect I consider this a courageous initiative where the traditional medical and public health community responded in a truly intersectoral and interdisciplinary spirit to an emerging problem of global proportions.

In a Healthy City Project all the city and municipal agencies concerned with energy, food, agriculture, macroeconomic planning, housing, land-use, transportation and other areas, are required to examine the health implications of their policies and programmes and adjust them to better promote health and a healthy environment.

Meanwhile there are numerous urban initiatives under way, many of them carried by local groups, nongovernmental organizations, community associations, citizens' groups etc. Thus the Healthy Cities idea has gone well beyond administrative city boundaries; it has in fact inspired many people and given new vigour to citizens' solidarity, to democratization and to community spirit and responsibility.

The term "Healthy Cities" has become popular and many municipalities around the world are using it to publicize health and environment protection projects they undertake. There are currently in the order of 800 cities (approximately 600 in Europe) involved with the "Healthy Cities" approach. In a number of countries, primarily in Europe but also in Asia, Africa and Latin America the participating cities are linked through national networks.

A "modern" project at the end of this century needs this type of networking approach based upon a participating spirit. In this sense, the Healthy Cities idea will have impacts on social development well beyond the solving of urban environmental health problems. In 1991, the subject of the WHO Technical Discussions was urban health which provided a valuable boost to urban health activities.

WHO's role in the Healthy Cities movement is to match technical competence and expertise with innovative and workable approaches. The continuous expansion of networks of Healthy Cities demonstrates the viability of this approach while the twinning of North–South and South–South cities has proved a useful strategy to promote the exchange of expertise between continents. It has also enabled the launching of joint programmes to help find solutions to common problems. WHO can further accelerate the development of "Healthy Cities" programmes in various regions by providing publicity and promotion for today's achievements through mechanisms such as "World Health Day" devoted to Healthy Cities in 1996.

Annex 1
Summary Report of the International Healthy and Ecological Cities Congress
Madrid, 22–25 March 1995

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Introduction

The International Healthy and Ecological Cities Congress, *Our City, Our Future,* held in Madrid from 22 to 25 March 1995, was organized jointly by the WHO Regional Office for Europe, the City of Madrid and the OECD Urban Affairs Division, in close partnership with the European Foundation for the Improvement of Living and Working Conditions (EFILWC). The Congress built on the work of the World Health Organization's Healthy City Network and the OECD's Ecological City programme and the work of the European Foundation for the Improvement of Living and Working Conditions. The City of Madrid were the Congress hosts. The meeting was held in the Municipal Palace of Congresses.

The Congress was attended by 463 participants from 46 countries, mainly from the European region and the Americas, but also from the WHO regions of the eastern Mediterranean and Africa. A special effort was made, with support from the City of Madrid and the Spanish Government, to secure the participation of some participants from countries in central and eastern Europe and from central and southern America. In addition, there were representatives of WHO project cities, representatives of national networks and participants from a number of national and international organizations. The participants came from a wide range of disciplines and included mayors and senior politicians, city staff and other professionals, community members and academics.

The Congress was opened by Her Majesty the Queen of Spain following welcoming addresses from the Spanish Government, the WHO Director-General, the Head of the Urban Affairs Division of OECD, the Director of EFILWC and the Mayor of Madrid. The Congress comprised 6 keynote sessions, 4 panel sessions in plenary, 9 case study workshops (featuring 46 presentations), Technical Workshops, over 30 Case Study Poster sessions, 6 site visits, a multimedia presentation by the City of Madrid, 3 special meetings (Environmental Health Officers, EURONET Associations, Ibero-American Healthy Cities), a Mayor's round table, a panel session devoted to Healthy Cities in Latin America, a special event Children of Madrid and, throughout, the generous hospitality of the City of Madrid.

The themes of the Congress were: ecological and sustainable development, health and urban poverty. The emphasis was on innovative policy-making and comprehensive, workable and affordable solutions and plans. Issues addressed included cooperation between different levels of government and between the public and corporate sectors, equity and the needs of disadvantaged groups, the setting of standards for good practice, the selection and use of appropriate urban indicators and the potential tension between ecological approaches, economic growth and health.

Global urban challenge

The Conference on Environment and Development in Rio in 1992 recognized the crucial role of urban communities in seeking global sustainable development and for the improvement of local health conditions. The Rio Conference underlined the key roles of urban settlements and human health for our common future as set out in Agenda 21. At the Earth Summit, the European Union and most national governments signed the conventions on climate change and biodiversity and committed themselves to Agenda 21 – the Global Action Plan for sustainable development in which local governments have a crucial role to play. However, the progress since the Conference, whilst conditionally positive, nevertheless leaves cities with major challenges that need to be addressed urgently. The Madrid Congress usefully developed these strands following a few days after the Social Summit in Copenhagen and in time to inform the development of the Habitat II Conference in Istanbul and the Second European Sustainable Cities Conference in Lisbon, both to be held in 1996.

Urban growth and urban living and the consequent health, social environment and economic impacts internally and externally make up the overwhelming challenges for the 21st century. At the turn of the century, half of the world's population will live in cities. By 2010 it is predicted that 20–30 cities will have over 20 million people and most of them in developing countries. By 2025 it is predicted that in addition there will be 100 mega-cities with a population of more than 5 million. Eighty of these will be located in developing countries. This unprecedented growth in urban living gives rise to further problems of persistently high unemployment rates, concerns about the future economy of cities, social exclusion, the preservation of our natural and built environments, the quality of life pressures on natural resources and negative impacts on health.

In addition, whilst these problems are faced in some measure in all cities, there is an increasing discrepancy between the scale of problems in developed and developing countries, even though cities are increasingly interrelated in global economic and environmental systems.

In facing these challenges and taking action, a range of broad actions were suggested. These included:

- the urgent implementation of modern infrastructure for environmental and health protection, providing access to basic life support systems;
- urban production and consumption patterns need to be challenged and adjusted to the needs of resource protection. This requires more attention to strategies for recycling and product responsibility of manufacturers; changes in behaviour patterns related to mobility and lifestyle, and environment and health concerns incorporated into economic decision making;

- the design of new cities and the restructuring of existing cities for sustainability;
- developing the capacity to manage in new ways in cities to contribute to global sustainability.

In addition, different concepts and models were discussed that aid analysis and policy development. These focused on the interrelationship between economic, environmental, social and cultural concerns and their impacts on health and the significance of integrated and holistic approaches at all levels of government.

Urban management for sustainability

Despite considerable work by cities and by national governments, cities continue to face economic and social problems and environmental degradation and ill health. The Congress concluded that new ways of managing the urban environment need to be found so that cities can both solve local problems and contribute to regional and global sustainability.

Sustainable development was identified as a much broader concept than environmental protection. It has economic and social as well as cultural and environmental dimensions and embraces notions of equity between people in the present and between generations. It implies that further development should only take place within the carrying capacity of natural and manmade systems.

A developing argument at the Congress, deriving from discussion of these principles, was that sustainable development must be planned for and that market forces alone cannot achieve the necessary integration of environmental, social and economic concerns. From keynote papers, panel discussions and case study material, a form of urban management emerged which provided a framework within which innovative approaches to the planning of sustainability can be explored. In this respect, the Congress identified a set of ecological, social, economic, organizational and democratic principles and tools for urban management, which may be applied in a variety of urban settings and which could be used selectively as cities move from different starting points and different circumstances towards contributing to local and global sustainability. The case study examples from practice clearly demonstrated an institutional as well as a policy focus. The capacity of different levels of government and particularly local government, to deliver sustainability was strongly advocated. This, it was suggested, may require fundamental reviews of the internal structure and working of local authorities and their relationship with their communities, as well as an examination of the relationship between central and local governments. A further dimension was that thinking about cities was undergoing a reappraisal with a return to a view of the city as a complex system requiring a set of tools which can be applied in a range of settings. Although the system is complex, it is appropriate to seek practical solutions, especially solutions which solve more than one problem at a time, or several solutions that can be used in combination. Illustrative examples of this were the Sheffield and Liverpool case studies in relation to energy conservation and air pollution.

The challenge of urban sustainable development, as discussed at the Congress, involved both the problems experienced within cities, the problems caused by cities and the potential solutions that cities themselves may provide.

Managers of cities, therefore, must seek to resolve the social, economic, cultural and health needs of urban residents while respecting local, regional and global natural systems; broadly solving problems locally where possible, rather than shifting them to other spatial locations or passing them on to future generations. This prescriptive advice must, however, be interpreted and tested within the complexity of regional and global economic and environmental relationships.

Whilst discussion of current practice strongly advocated the development of city-wide strategies, integrated policy approaches, interdisciplinary working and improved understanding of the interrelationships and interactions between different policies, nevertheless three key policy areas were particularly influential. These were urban economy, urban land-use planning and urban mobility and access.

Urban economy and sustainability

Improving the 'environmental efficiency' of economic activities is an essential component of sustainable development. It is now very clear what general directions of change this will require (although there is plenty of scope for innovation and development).

Cities have an important role to play. Urban location (if properly managed) has the potential to significantly increase the environmental efficiency of many economic activities. In addition, city authorities can carry out a range of activities to help their local economies support sustainable policies. As leading European cities have already demonstrated, many of these can readily be assimilated into familiar economic development activities, such as business development advice and training, inward investment promotion and the provision of premises and infrastructure.

There is an urgent need for better and wider dissemination of good practice and expertise in this field. Sustainability should become a strand running through all local economic development activities. A good 'toolkit' of methods and techniques to achieve this has already been developed among a number of cities. The need now is to make such information more widely available.

Governments, it was suggested, must reform the economy at national or international level to bring market price signals better into line with sustainability. This will require shifts of taxation from labour on 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 to allow cities to promote sustainability in combination with – or in advance of – shifts at higher government levels.

Despite current limitations, some European cities have already begun to demonstrate the will and the ability to develop sustainable urban economies. It is now necessary for international organizations, national governments, the EU and the UN to provide policy frameworks in which they can go further.

Urban land-use planning

Land-use planning systems are essential for the development and implementation of city-wide policies for sustainable development in which environmental, social, health and economic objectives and spatial policies are increasingly linked.

Progress towards integrating environmental considerations into planning systems differs between countries. It is perhaps best integrated into both strategy and instruments in countries such as Denmark and the Netherlands. Local innovation has been considerable, however, the impact of the new environmental agenda on planning systems in many countries has remained limited.

Some basis of regulation needs to be provided within each planning system in order to respond to environmental concerns and to prevent development migrating to areas of weaker control. Some countries are without these basic measures of development control. Others have systems in place, but do not always respect them. Government action is needed to tighten up these control mechanisms in parallel with environmental measures.

Planning should not always seek to 'balance' the benefits of development against costs to the environment. Instead, planners should increasingly attempt to define environmental capacities and prevent them from being breached. This may mean ruling out some kinds of development, whatever their current benefits. Planning, it was argued, should be 'supply limited' rather than 'demand driven'.

Planning should increasingly seek to be objectives led. Objectives should express strategic directions and specific levels of environmental quality. Through them, plans should describe intended states of the environment. Plans should include both national and locally-derived targets related to sustainability and indicators should be developed to measure both the extent of problems and the degree of success in dealing with them.

Those systems with rigid zoning plans need to find ways of becoming more flexible in order to respond to the environmental agenda, such as promotion, where appropriate, of mixed use schemes. Some cities have achieved this with fast tracked variations to plans, letting plans lapse, or designating action areas. However, a clear plan framework is important to influence the action of others.

Planning systems, despite their differences, are largely sets of procedures. Their strongest powers relate to the regulation of private development projects. It is the market which determines where proposals/projects will come forward. Planning systems therefore need to work hand in hand with public expenditure programmes and infrastructure/grant regimes to encourage development onto environmentally preferred sites, for example to assist the recycling of vacant land in cities. Greening the market is an important contextual aim for land-use planners.

Environmental professionals need to form new partnerships with local community representatives and environmental organizations as part of the process of delivering more sustainable land-use. They also need to be open to new ideas, for example about landscape design and to allow innovative projects space and time to develop.

There are no simple, single purpose solutions to the debate on urban form. An analysis of each local situation with consideration of a wider range of environmental issues than previously, needs to precede the formulation of locational strategies. Local proposals need to fit within regional or national strategies.

Much can be learned from sharing experiences between cities. However, it was acknowledged that transferring lessons on for example recycling initiatives, is currently easier than with land-use planning initiatives because of the extra complication imposed by the variety of legal and cultural issues on which planning systems are based.

Urban mobility and access

The importance of travel that takes place in urban areas means that cities have an important part to play in solving some of the wider environmental problems such as global warming. In addition, achieving sustainable urban mobility is a vital step in the overall improvement of the urban environment, the maintenance of the economic vitality of cities and reducing negative impacts on health.

A number of cities have taken action to encourage a shift from private cars to public transport and, less often, to the non-motorized modes – cycling and walking. Whilst these actions to reduce traffic clearly have an important impact, few currently have explicit environmental or health objectives – rather they are the means to achieve specified transport-related ends. A better system for monitoring the effectiveness of these actions in relation to specified goals is required. Further development of sustainability goals, indicators, target-setting and monitoring is needed.

Further work is needed on suburban travel. Most policies in cities seem to be directed at improving the situation in the central areas, with suburb to suburb traffic being somewhat neglected. However, in recent years it is in these areas that there has been the most traffic growth. Further consideration could also be given to the enhanced involvement of local communities in formulating transport policies. A fresh look at community-based initiatives might also be appropriate.

The development of sustainable urban mobility requires further development of policies aimed at improving accessibility and not simply movement. It is essential to develop measures to reduce demand for travel rather than continuing to emphasize measures which seek to minimize travel time.

The reconciliation of accessibility, economic development, environmental and health objectives should be the primary objective of a city's transport policy. Setting transport policies within the framework of a city-wide strategy for sustainable development may be one way to enhance policy integration. Within such a strategy, land use and mobility and access issues might be jointly examined through assessment of the mobility and access impacts of new developments.

Affording an equal status to environmental objectives in policies designed to improve accessibility requires a dramatic reorientation of political and public cultures. Influencing attitudes through democratic consultative processes involving public, private and voluntary sector bodies is therefore an important prerequisite of more sustainable movement patterns in cities.

In seeking to meet the global urban challenge, the Congress recognized that whilst elected representatives, city managers/administrators and urban professionals have key roles to play in urban management for sustainability, progress depends on the active involvement of local communities and the creation of partnerships with the private and voluntary sectors within the context of strong and supportive government frameworks at all levels. Political leadership and commitment are critical if progress is to be continued.

Examples of achievement

Some 46 case studies presented in 9 sessions provided an insight into the overall strength of practice, the commitment of practitioners from all sectors, their

willingness to tackle difficult problems, the innovative approaches being adopted to some issues and the overwhelming sense of achievement in a world that often frustrates. The case studies illustrated a number of common factors for a successful approach.

The case studies identified that success needed attention being given to both issues of PROCESS as well as the substantive issue of POLICY or PROGRAMME CONTENT. In many of the cases, the success was dependent on the ability to understand the INTERRELATIONSHIP of different topics and to respond in an INTEGRATED and COORDINATED way through interdisciplinary working, partnerships between different sectoral interests and improved working across government and vertically between different levels of government and the community. The Liverpool air pollution case study, the Sheffield energy conservation/poverty example, many of the Local Agenda 21 examples and the landscape and health example in Madrid all illustrate this important point.

The PROCESS and how it was designed clearly is influential in terms of a successful project. Examples from Krakow – Local Agenda 21, the Glasgow Health Plan, the Health and Environment Plan from Copenhagen and the Schwabach example from Germany demonstrated this point very clearly.

A CLIENT GROUP PERSPECTIVE is also a significant factor. The Urban Child and Homelessness Projects in Madrid, the Elderly Projects in Jerusalem and Women's Projects in Madrid and Poland demonstrate the advantages of a specific client group focus. Often, this kind of project is also addressing issues of ACCESS and EQUITY. Some examples provide a MODEL or PRE-FIGURE what could happen in the future. These practical achievements that can be visited and experienced by others provide crucial learning and evidence for future changes. The House for Good Health in Bologna, the New Town in Tama, Japan, the Ciutat Vella in Barcelona and the Italian Ecological village are cases that provide practical ideas for the future.

A range of tools are common to the successful implementation of many projects. These include: methods for involving the local community; a range of technical measures for understanding and monitoring change, e.g. various forms of auditing and the use of indicators and targets; publicity and dissemination methods, including increasing use of information technology (for example, the INTERNET); financial mechanisms, particularly innovative methods of levering funds, obtaining sponsorship and utilizing "partnerships of funding sources"; promotion and education methods, e.g. the Health for All slide set; the alcohol and drug programmes in Madrid and methods for trying to influence lifestyles and change attitudes, for example, the Global Action Plans in Bath.

All of the case studies demonstrated a number of specific meta-issues that need to be discussed further. First, there is the issue of INSTITUTIONAL CAPACITY. This is a crucial factor, often not regarded adequately and one which needs attention and support not only from the practitioners on the ground, but also from government and funding institutions in how they support innovation over time.

Second, there is the issue of NETWORKING. Ideas and experience in the development, management and implementation of policies and projects for cities are increasingly being shared through formal and informal networking. As well as facilitating the transfer of knowledge and best practice, networks act as catalysts for cooperation between cities and lobby for resources. Networking for

sustainable development is specifically mentioned in Agenda 21 and relevant examples of international cooperation between cities were evident at the Congress. In Europe, the Cities for Climate Protection, the Car Free Cities Club and the Sustainable Cities Campaign are all good examples of recent networks with active membership that can be seen alongside, for example, the Healthy Cities Network.

Third, there is the issue of evaluation of practice. The case study material discussed at the Congress demonstrated very positively the range and quality of practice. However, very little evaluative research has been carried out to make sense of this practice and to strengthen it through purposeful feedback. It may be time to take stock, to analyse achievements and how they were achieved and to tease out some lessons that could be more widely disseminated. Much of the practice is, rightly, very process-orientated, but there is also a need for more work and a clearer understanding of definitions, objectives, outputs and outcomes.

Future directions

Discussions during the working sessions gave rise to a number of points which are outlined below.

It was recognized that cities face serious challenges at the end of this century, amongst which are persistently high unemployment rates, concerns about the future economy and employment, social exclusion, the deterioration of our natural and built environment, the quality of life, pressures on natural resources and the negative impacts on health.

In facing these challenges it was recognized that health, environment and the development of cities are not separate issues, but are linked together in a complex system of causes and effects. Cities must put work in progress on these issues, recognizing their interrelationship and the need for planning and action for us now and for future generations.

The Congress recognized that the sum of good sectoral policies, be they policies for economic development, housing, environment or health, may not necessarily result in a successful, integrated approach for the city as a whole. Failure to make lateral connections often results in the city not taking full advantage of its creative and innovative capacity. The integration of policies requires a changed and more holistic perspective, embracing the needs and involvement of the whole of the community partnership. Principles of shared responsibility and decentralization to the most appropriate level need to be linked to longer-term strategic, urban and regional planning for the next century. All of these changes require new ways of working and new relationships between government, the private sector, local communities and interest groups. For it to be successful, national governments, the European Union and international organizations must also demonstrate their commitment and support and a willingness to change and work together.

Integrated policies for health, poverty, environment and economy will need to address three problems, in particular:

- how people are able to live better in communities, how they are represented and how community consensus is achieved without excluding people;
- how the impact of global economic changes impacts upon the city and the

region, as change driven by global technologies may not reflect local needs and threaten social networks; and

- how the city will manage physical capacity and saturation of its resources.

In general, all governmental and public agencies need to apply the principles and tools for policy integration and address particular areas as follows:

- International organizations, the EU and national governments should focus principally on the establishment of more supportive policy frameworks within which cities can innovate; on the provision of funding and support for city projects and for networking so as to encourage the development and sharing of good practice for sustainability – and on the provision of guidance on particular tools (such as the extension of environmental appraisal to sustainability appraisal). New initiatives for urban policy at international, European and national levels are welcomed and national governments with explicit urban policies are urged to build sustainability goals and mechanisms into their programmes. In general, action for sustainable cities is seen as in line with Agenda 21, to which all levels of government are urged to respond.
- Member States should work towards an adequate structure of regional and local government in urban regions. Often there is a gap between functional and administrative structures, with negative impacts for environmental protection, health, land-use planning and transport planning. In many urban regions, there is a need to strengthen metropolitan governments with a strong planning competence at the strategic level. In the longer term, cities should be given increased freedom to experiment and to devise and implement their own policies and actions for sustainable development.
- At local level, municipal governments should develop city-wide strategic approaches, applying the principles and tools outlined in this report of the Congress. This in turn requires enlightened political leadership, the establishment of cross-sectoral management structures and the employment of appropriate specialist staff.
- Partnership approaches are particularly encouraged and these have implications for awareness and commitment, not only for city managers, but for local business and communities. The effective involvement of local businesses in both the formulation and implementation of policies for the urban economy, land-use and transport planning, environment and health is seen as essential if progress towards sustainability is to be achieved.

The research agenda is of key importance. The development of practice needs the input of research, particularly to evaluate and make sense of practice, but also to provide feedback on processes and policy development so that the practice world can develop a strengthening practice base. The responsibilities for supporting such an agenda need to come from international organizations, the EU, national and local governments and research councils and foundations, as well as the academic community.

These fundamental urban issues at the end of the millennium are common to all cities and they cannot be avoided. In setting a framework for action, cities must seek to achieve:

- a new and more harmonious relationship between the city and its citizens;
- a better balance between the forces of global change and the ability to maintain and enhance the value and quality of localities and communities;
- the capacity of the city to seek internal solutions to the health and environment problems it generates by solving them instead of transferring them to other areas or to future generations.

In closing the congress the Mayor of Madrid drew to the attention of the Congress the fact that the children of Madrid appearing at the Conference represented future generations of people in cities.

Our delight in their dancing now stands as a reminder to all of us of our responsibilities for children like them in generations to come. The agenda for cities is clear and it is urgent. I call on you all to act collectively to improve the quality of life in cities, both now and for future generations. This means change. We must develop the capacity to ensure change happens.

References

European Commission, Urban Environment Expert Group, Report on European Sustainable Cities, October 1994.

Defining sustainable development, the Brundtland Report (World Commission on Environment and Development) "Sustainable development is development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs" (WCED, 1987).

Second Global Conservation Strategy – Caring for the Earth "improving the quality of human life within the carrying capacity of supporting ecosystems" (IUCN/UNEP/WWF, 1991).

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

EC Fifth Environmental Action Programme "continued economic and social development without detriment to the environment and natural resources on the quality of which continued human activity and further development depend" (CEC, 1993).

White Paper on Growth, Competitiveness, Employment "which contribute to higher intensity of employment and lower intensity of consumption of energy and natural resources" (CEC, 1993).

CANADIAN PUBLIC HEALTH ASSOCIATION (1991) "human development and the achievement of human potential require a form of economic activity that is socially and environmentally sustainable in this and future generations".

INTERNATIONAL COUNCIL FOR LOCAL ENVIRONMENTAL INITIATIVES "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 those systems depends".

Annex 2
Case Studies and Sub-Plenary Presentations

City/Country *Organization	Case Study Title (reference number of case studies at the Congress)
Barcelona, Spain	Reclaiming a deprived area in Barcelona. The case of "Ciutat Vella" (ref. no. 72)
Berlin, Germany	Networking as a tool for a better urban environment (ref. no. 90)
Bologna, Italy	Project Living Space Environment and Prevention (ref. no. 56)
Cambridge, United Kingdom	The expanding world of community environmental auditing (ref. no. 77)
Canberra, Australia	Jerrabomberra Valley: a case study for ecological sustainable urban development (ref. no. 84)
Copenhagen, Denmark	Copenhagen City Health Plan (ref. no. 57)
Cracow, Poland	The Green Action Plan (ref. no. 35)
Dresden, Germany	Organization of urban and social development in the municipal district "Äeussere Neustadt" of the city of Dresden (ref. no. 24)
Glasgow, United Kingdom	The development of the Glasgow City Health Plan (ref. no. 7)
Glasgow, United Kingdom	Glasgow Healthy Cities Project – local action programme(ref. no. 41)
Glasgow, United Kingdom	Housing improvement, public health and the local economy (ref. no. 42)
Györ, Hungary	The social and poverty status of Györ, city with county rights, Hungary (ref. no. 31)
Hamburg, Germany	Schwaback – from recycling to comprehensive cross-sectoral Integration of environmental policy (ref. no. 39)
Horsens, Denmark	Environet – interregional network on environmental and health planning (ref. no. 62)
Indianapolis, USA	Networking in Healthy Cities: the global Healthy Cities information system (ref. no. 25)
Leiria, Portugal	Leiria Healthy City – a project of community development and welfare (ref. no. 87)

Liège, Belgium	Perception of environmental health by children in cities (ref. no. 71)
Liverpool, United Kingdom	Ambient Nitrogen Dioxide levels in the Vauxhall area of Liverpool (ref. no. 44)
London, United Kingdom	Environment Services and Policy Options (ref. no. 89)
Madrid, Spain	Ageing and quality of life in the City of Madrid: new programmes for the elderly (ref. no. 22)
Madrid, Spain	The system of free spaces and green areas as a structurating network in urban planning (Madrid) (ref. no. 5)
Madrid, Spain	The reorientation of municipal health services (ref. no. 33)
Madrid, Spain	Network for the control of noise pollution in the City of Madrid (ref. no. 48)
Madrid, Spain	Prevention programmes for women from the city of Madrid (ref. no. 50)
Madrid, Spain	Implementation of a new public health structure in Madrid (ref. no. 58)
Milano, Italy	The urban child project (ref. no. 34)
Padova, Italy	An ecological village in Italy (Torreglia) (ref. no. 27)
Paris, France	Mutualité Française: la promotion de la santé et le travail en réseau (ref. no. 86)
Pécs, Hungary	Health Policy Development – links of the local and national level (ref. no. 10)
Pécs, Hungary	"Addicted to Health". Health and Environment promotion in 30 primary schools (ref. no. 12)
Rotterdam Netherlands	Community involvement in soil pollution (ref. no. 61)
Sacramento, California, USA	The California Healthy Cities Project: how cross-sectoral programmes and policies can be made to work (ref. no. 82)
San Carlos, Costa Rica	San Carlos, Generous, progressive and healthy (ref. no. 74)
São Paolo, Brazil	Environmental and sanitary issues in fountain heads and water reservoir protection areas (ref. no. 66)
Sheffield, United Kingdom	Housing, energy, health and poverty (ref. no. 65)
Sheffield, United Kingdom	Making a Start: developing a programme of joint working on environment and health in Sheffield (ref. no. 75)
Tokyo, Japan	Healthier ecological designing of urbanization at complexed cities (ref. no. 43)
Tokyo, Japan	A megacity's approach: Tokyo Healthy City (ref. no. 55)
Valdivia, Chile	Valdiva Ciudad Saludable (ref. no. 68)
*OECD	Sustainable indicators for urban policy (ref. no. 88)
*Pan American Health Organization	Health promotion in Latin America: The Healthy Municipalities Movement (ref. no. 4)

*Pan American Health Organization	The Global Project of Cienfuegos, Cuba (ref. no. 85)
*WHO Headquarters	WHO Healthy Cities – towards an interregional programme framework (ref. no. 3)
*WHO European Centre for Environment and Health, Nancy, France	Waste management techniques (ref. no. 91)

Case Studies Poster Presentations

City/Country *Organization	Case Study Title (reference number of case studies at the Congress)
Bialystock, Poland	Clean up Bialystock 1994 – successful implementation of large-scale citizen environmental action in central Europe (ref. no. 1)
Brussels, Belgium	Association of cities for recycling, a new cooperation tool in the urban waste management (ref. no. 2)
Cagliari, Italy	Building an intersectoral cooperation in a popular neighbour hood of Cagliari (ref. no. 28)
Cagliari, Italy	Health promotion projects in Sardinia (Italy): constraints, opportunities and challenges (ref. no. 29)
Cagliari, Italy	Community diagnosis: the city of Cagliari (ref. no. 30)
Göteborg, Sweden	HIV/AIDS programme – local work with national support (ref. no. 59)
Göteborg, Sweden	How to challenge the increasing prevalence of asthma and allergic diseases – local and national preventive programmes in Sweden (ref. no. 60)
Indianapolis, USA	Health Care Reform in Jeffersonville Healthy City, Indiana, USA (ref. no. 26)
Jerusalem, Israel	A community based model for the elderly, developed by an intersectoral working group (ref. no. 36)
Kosice, Slovak Republic	Wetland reconstruction in Kosice (ref. no. 19)
Leiria, Portugal	Leiria Healthy City – a project of community development and welfare
Ljublana, Slovenia	Unemployment Multi-City Action Plan (ref. no. 9)
Lodz, Poland	The Healthy Cities Project in Lodz (ref. no. 52)
Lodz, Poland	The Polish Healthy Cities Association (ref. no. 53)
Madrid, Spain	Madrid children nutritional status, problems, detection and dissemination of results, importance on the population sanitary improvement (ref. no. 6)
Madrid, Spain	Prevention of alcoholism in youth programmes (ref. no. 20)
Madrid, Spain	Poster "Drug dependence attention model – Madrid Town Council (ref. no. 21)
Madrid, Spain	Prevention's programme of the infection by HIV/AIDS of Madrid Council (ref. no. 38)

City/Country *Organization	Case Study Title (reference number of case studies at the Congress)
Madrid, Spain	Urban poverty and social exclusion in Madrid; social intervention in social services (ref. no. 45)
Madrid, Spain	Prevention of alcoholism in youths programme (ref. no. 46)
Madrid, Spain	A healthier Madrid: classes in the open air (ref. no. 47)
Madrid, Spain	Apportionment of urban atmospheric aerosols from the city of Madrid (ref. no. 49)
Madrid, Spain	Sports for everybody (ref. no. 51)
Madrid, Spain	Deporte al Alcante de Todos (ref. no. 37)
Maribor, Slovenia	Slovenian Healthy Cities Network – reorganization of primary health care system in Maribor and region Styria, Slovenia (ref. no. 32)
Milan, Italy	HIV/AIDS prevention in the armed forces, a civic project in Milan: "Levering the levy" (ref. no. 15)
Milan, Italy	Pilot project for health education and assistance for the foreign population present in Milan (ref. no. 16)
Milano, Italy	Mortality among young Milanese citizens in the years 1980–1992 (ref. no. 14)
Navarra, Spain	The Healthy Cities Project in Navarra: Tafalla Case Study (ref. no. 17)
Patras, Greece	Building a City Health Plan: the case of pioneering policy mechanisms in a Greek city (ref. no. 64)
Pécs, Hungary	The socialization of health and environment values in the primary schools of the city of Pécs (ref. no. 11)
Rennes, France	MCAP'ENABLE: a better life in Europe for disabled and elderly citizens (ref. no. 80)
Rennes, France	Healthy twinning (ref. no. 81)
São Paolo, Brazil	Dixoin and Furans: risks for human health by the modern municipal incinerators programme: evaluation of the problem and measures for prevention (ref. no. 67)
São Paolo, Brazil	Consortium Guarapiranga for the third Millenium (ref. no. 69)
Sumperk, Czech Republic	Information about national network of Healthy Cities in the Czech Republic (ref. no. 8)
Sunderland, United Kingdom	International health promotion: using the TEMPUS framework (ref. no. 13)
Turku, Finland	The political implementation of reviewing a drinking water supply (ref. no. 63)

Tyne and Wear, United Kingdom	How to make cities healthier for sex workers (ref. no. 73)
University of Newcastle, United Kingdom	The Health for All Slide Set: a teaching resource for the 1990s (ref. no. 18)
Wirral, United Kingdom	Developing a local strategy for improving childbirth (ref. no. 40)