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Developing a Collaborative Framework for Research and Sustainable Urban Management between Asia and Europe

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Abstract

This presentation seeks to delineate a joint collaborative framework for European science and research and the practice of sustainable urban management in Asia. In order to reach this goal, the basic trends, problems, and strategies of contemporary urban development and management practice in Asia and Europe will be described. These basic trends will be linked to the contemporary frontiers of urban management, the latest developments in urban research and the potential for a specifically European perspective¹. This paper concludes by pointing to the particular international value of the European experience, as well as to the potential for research and science networks in analysing, integrating, disseminating and transferring knowledge.

Point of Departure

Asia is commonly regarded as an ancient continent. It is the cradle of culture and civilisation, from the ancient civilisations of Mesopotamia to the high cultures of India and the empires of China.² Indeed, the European quest to rediscover the Orient, to write a European history and to discover (and conquer) the world for the last 500 years of the second millennium A.D. would be unimaginable without the previous contributions and innovation from the East.³ The Western world prospered from Arabic numbers, sailing boats, optical equipment, paper, astrological tools fireworks, and noodles, to name just a few. The oriental spice trade flavoured early European entrepreneurialism, and cities like Venice thrived on the link to the Eastern Roman Empire.

After 500 years of economic and cultural westernisation,⁴ Asia is once again on the agenda, now regarded as the continent of the future. More than two thirds of mankind and four of the five largest countries on the planet can be found within this large continent. China and India alone accommodate about one third of the world's population and are on the way to becoming the new engines of global economic growth. Throughout the last 20 years, large parts of Asia have experienced unprecedented rates of industrialisation. The successive mass migration to the cities is of historic dimensions. Nevertheless, despite these proportions, Asian urbanisation is still more or less in its primary stages today (China's urbanisation rate in 2006 was below 60 percent and India's below 45 percent, cp. to UNFPA 2007, UNPD 2006). Most crucially, the quantitative and qualitative dynamics of Asian urban growth are of an unprecedented scale. They create demand, e.g. for infrastructure, housing, and services, which overburdens the (urban management) capacity of most places to provide for organised and sustainable growth.

Can 'old' European science and research contribute to the problems of mega-urbanisation – in particular sustainable urban management – in the 'new' Asian continent?

What are the new and major trends in urbanisation today that engage the minds of researchers and keep urban managers occupied?

¹ An in-depth elaboration on the issues such as 'sustainability' or 'urban management', however, is beyond the scope of this paper and has been done elsewhere.

For a "brief history of sustainability" see for example: <http://www.cap-lmu.de/fgz/portals/sustainability/history.php>, of the Research Group on the Global Future, [04 Feb 2008];

For urban management: Rabinowich (2002) lists: The Urban Management Programme (UMP) of UNDP/UNCHS/World Bank; the Local Initiative Facility to the Urban Environment (LIFE); the Public-Private Partnerships programme for the urban environment (PPPUE); the Urban Governance Initiative (TUGI).

(Cp also to Brundland 1987, UN 1987, Bartlett 1998 et al.)

² Urban historians such as Mumford (1961) and Benevolo (1975) refer to a 5000-year-old urban history in Asia.

³ Among others, the German Philosopher Peter Sloterdijk (2005) portrays this narrative in his recent volume on a philosophical history of globalisation.

⁴ In its last stage driven by North American settlers and explorers (cp Sloterdijk 2005)

The United Nations (2006) and others state that the year 2007 was an historic landmark for humanity. From this year onward, more than half of mankind is supposed to be living in environments qualified as 'urban'. In the year 2010 this percentage will rise to 60 percent. Hence, it has finally been more or less accepted that urbanisation is not a problem, but rather a trend. The future of our 'spaceship earth' seems to be urban, along with all its major opportunities and challenges. The human of the future will be a *homo urbanicus*. By 2030, the towns and cities of the developing world will make up 81 percent of urban humanity (UN 2007). Consequently, all sorts of scholars and national/international development and trade organisations have shifted their attention to cities.

While most of the trends, problems, practices and approaches are debated widely in science, economics and politics (cp footnote 1), this presentation aims to contextualise our discussion of science and urban management by concentrating on four important new dimensions of contemporary urbanisation: *megagrowth*, the *collapse of distance*, *privatisation*, and *informationalisation*.

Megagrowth

A central tendency driving our urban world is the fact that the dynamics of the process of urbanisation have reached a historically unique momentum. The problem at hand is that many cities are growing at a faster pace than we can comprehend, let alone react to. The sheer speed and amount of growth overwhelms the capacity of our minds to understand what is happening and exceeds our ability to fix the problems. Despite the fact that humankind is able to fly to the moon, we have not been able to solve the manifold and complex problems related to urbanisation. Much has been tried - a myriad of studies, models, and investigations on urban problems have been developed under the auspices of various regimes and development paradigms.⁵ Yet in many urban areas of emerging and developing economies, poverty, lack of housing, malnutrition and pollution are continuously on the rise. The quantity and quality of current growth appears overwhelming.

Collapse of Distance

Significantly, the trend of megagrowth goes hand in hand with a parallel process of dynamic shrinking and decentralisation. This process has two faces: While the first one is technological, the second is political and territorial. The development of the transport and telecommunication sectors is exemplary for the technological aspect of this process. The increasing efficiency of modern air, rail and car travel shrinks the 'time-space-continuum' and the relative distances between many places. Even more dramatic effects result from the ongoing improvements and declining costs in modern telecommunications.⁶ The cost of a telephone call from New York to London, for example, has decreased between the 1930's and the 1990's from several hundred US Dollars per minute to a couple of cents. The trend here is actually one of a cost-space convergence. Distance is becoming increasingly irrelevant as a factor of communication cost. (cp Janelle 1991). As a result, cities and regions become increasingly linked and networked.

Better and cheaper linkages facilitate increasingly dispersed and transnational production processes. Many regions, towns and cities are becoming increasingly empowered to steer their own development agenda while nation states seem to loose dominance (cp. Jacobs 1984, Sassen 1991). While, for example in India, decentralisation programmes have been devised that aim to strengthen local politics, regional capitals, such as Bengaluru and Hyderabad, are increasingly competing with traditional centres such as Delhi and Mumbai.⁷

Privatisation

In addition to megagrowth and the analogous space-time implosion an important tendency which has to be taken into account when thinking about contemporary urbanisation is *privatisation*. Since the collapse of the Soviet Union, if not before, the world has become increasingly focused on the principles of a market economy. While trade and financial transfers are increasingly taking on global dimensions the current economy characterised by 'highly flexible processes of production'⁸ became known as the 'advanced market economy', or the 'new economy'.⁹

⁵ ...from centralist planning, to site and services programmes, participatory budgeting, and a recent focus on the private sector, to name a few.

⁶ David Harvey (1989: 240ff) dedicated the third part of his "The Condition of Postmodernity" to the topic of time-space compression. Brunn and Leinbach (1991) compiled a more technical volume on the impact of telecommunications on geography. Spiekermann and Wegener (1994) present a series of stunning maps illustrating a Europe compressed by modern rail systems. (<http://www.raumplanung.uni-dortmund.de/irpud/pro/time/time.htm>, Retrieved Feb 2nd 2008)

⁷ Many other examples can be found around the world: from the increasingly networked and decentralised system of European Regions to the increasing autonomy of the respective parts of the Indonesian archipelago and the rising relevance Brazil's northern regions. (Cp CIESIN 2003)

⁸ These terms are used as definitive terms for 'globalisation' by most of the 'big authors' and major organisations: Cp Wallerstein, (1979); Sassen (1991); Krugmann (1996); OECD (1996) et al.

The related 'new' economic order is based on a set of principles which vary from the 'older' economic systems. It could be described by the following: freedom of trade and financial flows; a flexible and seemingly footloose geography of production that can be modulated upon demand; centralised levels of corporate control, high levels of standardisation, and a strong emphasis on knowledge and information.

In the context of contemporary urban management, this framework of increasing privatisation is of high significance. In many places the principles of the 'new economy' are gradually being applied to the reform of public administrations and their executive bodies (including urban management). State formations, such as the 'Keynesian Welfare State', are believed to be too costly and inefficient for contemporary post-industrial societies.

Informationalisation

The rising relevance of knowledge and information is the last of the important trends, which deserves attention in our context, and which has a noticeable impact on sustainable urban management. For a long time, access to natural resources and raw materials was the most important determinant of the location of cities. Urban centres thrived at the crossing points of large trade routes, natural harbours, or due to the close proximity of primary resources such as coal, water, and minerals.

In our increasingly connected and synchronised world with its largely decentralised on-demand production chains and modern electronic networks, it is the knowledge and information factor that creates the decisive edge. In this context, the 'tertiary sector' of services, knowledge and paperwork – in other words the meaningful processing of abstract symbols, from alphabets to digital codes – dominates the economies of most of the industrialised countries. Accordingly education and talent have become today's most valued goods. In a speech at Harvard University in 1943 Winston Churchill observed that "The empires of the future will be empires of the mind." (cp The Economist 2006). If, therefore, contemporary cities and urban managers are seeking to create long-term wealth, they must take into account the importance of this knowledge and information factor.¹⁰

Megagrowth, the collapse of distance, privatisation and informationalisation do not occur without major contradictions and problems. Indeed, these trends are intensely intertwined with the processes of the ongoing reorganisation of human environments. Some of the larger negative issues at hand are increasing poverty, unemployment, socio-spatial fragmentation and exclusion, cultural tension, the consumption of non-renewable resources, and rising environmental problems¹¹.

Three potential scenarios

Much is at stake at this critical threshold that humanity has reached today. Facing the problems above, the following major scenarios can be drawn:

Collapse of the overburdened plane

A first dramatic scenario is that of the total collapse of the planet Earth. Critical life supporting systems may simply collapse if humankind does not agree on measures to be taken to defy severe environmental problems such as global warming. This bleak scenario enters the scene when the 'point-of-no-return' towards a global environmental breakdown is missed.

Saving the planet, but denying two-thirds of the world's population better lives

In a second possible outlook, the global community manages to prevent a global collapse by fixing the major environmental problems, but at the price of fencing off a large share of the population from progress. This somewhat eco-totalitarian option implies that humanity will not be successful in separating economic growth from the increasing consumption of non-renewable resources. In that case, less than a third of the world population might continue to thrive on the shoulders of the other disempowered two-thirds.

Notably, Krempel and Pluemper (1998) have produced a series of revealing network graphics representing various aspects of international automobile trade. (<http://www.mpi-fg-koeln.mpg.de/~lk/netvis/globale/r12.02.2008>)

⁹ Despite slight variations, several authors stress that this new condition is a variation of a market economy and not anything else. For Jameson (1984) or Harvey (1989) it is "Late Capitalism"; Sennett (2006) uses term "New Capitalism"; More neutral stakeholders such as the OECD (2000) refer to the term "New Economy"; or "Advanced Market Economy" (Sassen 1989)

¹⁰ While for more advanced societies this means a nurturing of innovative environments and cultures (including natural assets), for developing societies the factor of education becomes most important. (South Africa's national development policy may be seen as a model case here.)

¹¹ Interestingly, at the same time when the majority of mankind moves toward urban forms of life the amount of growth surpasses the carrying capacity, or ecological footprint, of the planet (cp. Wackernagel 1996).

Development of a sustainable future for all

Everybody would certainly agree that neither of the above scenarios is desirable. The first scenario stands for the elimination of mankind, at least on this planet. The second scenario implies an eco-totalitarian regime of complete dimensions, erasing most fundamental human rights. Therefore, the third and only desirable condition to opt for is the development of a sustainable future for all, where all of humanity might be equal and free.

Each of these scenarios is realistic if certain trends, or sets of trends, should become predominant. How to realise this third future is certainly one of the most striking questions of our generation.

What is Sustainable Urban Management?

After presenting some of the most important trends, problems and possible scenarios for an increasingly urbanising planet, we now turn to the issue of sustainable urban management. Urban management is one of the key disciplines which cope with most of the problems we experience in cities – from economic development and poverty reduction to environmental protection and so on. How then can we define this discipline?

It can be stated that sustainable urban management is above all a service for the enhancement of people's quality of life. As such it seeks to efficiently organise complex urban- and regional systems. To these ends it employs certain tools, methods and strategies. The people who exercise this discipline are 'urban managers'. Consequently, these have to make sure that a city is up and running.

In order to make urban management *sustainable*, the inclusion of present as well as future generations is necessary (cp. Footnote 1). In establishing targets for a certain direction of development and to measure the success of a strategy it is useful to utilise indicators. These can, for example, be combined measures of *quality of life*. Yet, these instruments for assessing a 'good life' can be general and holistic,¹² or specific and place dependent (cp. UNCHS 1997, EGUE 2000). While more general aspects include basic human rights and fundamental services such as access to jobs, food, housing and education, locally specific directives may rely on the conditions of the local climate or the needs of local cultures and traditions. Importantly, in our pluralistic post-modern societies where different sorts of people share the same neighbourhoods, sustainable urban management needs to be based on active multi-stakeholder processes. The way to guarantee a high degree of identification between residents and projects and long lasting customised solutions should be based on a participatory process.

Nevertheless, there are also a few challenges facing sustainable urban management today. Urban government is part of public governance structures which rely on hierarchical arrangements, disciplined decisions, predictable outcomes and efficient operations. Therefore, like any other bureaucracy, urban management has an inherent tendency to complicate itself from within in a process of internal rationalisation and optimisation (cp. Weber 1922, Sennett 2006). This trend has led to large, inefficient bureaucracies in many countries. In dealing with the question of sustainable urban management, we have to be aware of the above mentioned pressures of politics and bureaucratisation. Nevertheless, both politics and bureaucracy are highly dependent on 'informed' decisions.

What is Science?

After elaborating some of the characteristics of sustainable urban management, we should now turn to science and research. The word science comes from the Latin *scientia*, meaning knowledge. While the topic is too grand to be fully explored here¹³, it is important to focus on some of its relevant characteristics. Scientific investigation seeks to understand the world and its elements. However science, including research, is more than just compiling facts and assembling observations. Rather than an encyclopaedic work, research is about a generation of knowledge (cp. Eco 1979). As such, it is a process of interpreting the world and a discipline of reflection. Scientific practice develops theories and models which are approximations of the real world. To do so, science draws on hypotheses, symbolic systems and abstractions. The theories are generally accepted as valid as long as they are not disputed by a better hypothesis (cp. Popper 1959).

¹² Perhaps the most influential, widely used and quoted is the United Nations Human Development Index (HDI), prepared annually by the United Nations Development Programme since 1990. The indicators used by the UN Commission for Sustainable Development (CSD) are summarised in UN-DESA (2007); [cp. also: <http://www.un.org/esa/sustdev/natlinfo/indicators/isd.htm>; r12.02.2008]

¹³ While for example Bright Wilson (1952) presents a classical "Introduction to Scientific Research", Latour (1979) provides for a more contextual and relativist account of the discipline.

Science, at least in theory, is a politically independent, open, free, transparent and boundless discipline. It is a powerful tool, and like the 'fire' of Prometheus, it can be used for a variety of ends, depending on the aims and agents using it.

Science and research, however, also have some limitations. It is a fact that the advancement of knowledge increases the amount of new questions. Each new discovery reveals a set of new puzzles. Hence, science is fragmenting into many specialised disciplines, represented by myriads of experts. This is a dilemma with disintegrating effects. An important conclusion that emerges is that science, to be useful, needs to be integrated and embedded in theory and conceptual models. It needs to be related to social ends. And the ends towards which to use science must be clarified and agreed upon (cp. Turner 1976).

How then, can we establish a meaningful relationship between science and sustainable urban management?

Unfolding Six Options of how Science and Research can Address Urban Management

After outlining an integrated framework of sustainable urban management and scientific inquiry, we can now address the following question: In what way can sustainable urban management engage science, and its output, knowledge? In the following paragraph six scientific approaches on urban management will be presented.

1) The first approach that science and research can take toward urban management is a *direct* one. Its goal is to primarily understand the matter, or the straight structural logic of the topic at hand. The questions at hand are: Where is the discipline coming from? What is its underlying rationale? Where it is heading? These questions can be approached by contextualising the object in various frameworks, for instance historical, urban, political, cultural, economic, social, technological, and philosophical contexts. This approach contributes to a better understanding of the matter as such and thus helps in improving its performance.

2) Secondly, research can also be used in a more divisionist manner: in tackling the various sub-elements of sustainable urban management. Among these elements we can find the previously identified sectoral 'challenges of urbanisation' such as water, wastewater, transport, education, housing, industrial development, open spaces and natural preservation. In fact, the present ASEF-meeting is a good example of this approach because it follows this strategy in dividing up the topic into several sub-disciplines.

3) The third important influence science can have on sustainable urban management relates to the sphere of learning. This perspective is bound to the systematic evaluation, gathering and circulation of knowledge. Since the homes of science and research are generally universities and academic institutions, scientists are well suited to facilitate the various tasks of information management, knowledge transfer, and dissemination. Capacity building and education are among the key activities of this framework.

In addition to the three 'vertical' levels of scientific inquiry on the problem of sustainable urban management, knowledge, the product of science, may be beneficial from the perspective of three additional 'horizontal' spheres.¹⁴

A) The first of these horizontal spheres represents *target knowledge*. This sector relates to a deep understanding of the requirements of a problem, as well as the goals of all major stakeholders in a given situation. *Target knowledge* can be gained through various forms of data analysis, such as surveys, interviews, opinion pools or the reflection of current trends and possible development scenarios. In regard to urban regions, the understanding of trends in energy, transport, water and neighbourhood structures may become important.

B) The second horizontal knowledge type that can be applied to sustainable urban management is called *system knowledge*. Here we are talking about the typical development of 'classical' scientific models and the testing of hypotheses in regard to a stated problem. Depending on the amount of open variables, these 'systematic' approaches may vary from linear equations and integrated data banks describing simple systems, or dynamic modelling techniques, to architectures based on complexity theory.

Some exemplary tools for this approach include evaluation and benchmarking tools (for example evaluations on ecological performance such as the ecological footprint (cp. Wackernagel 1996), traffic flow models¹⁵, or mathematical regional growth scenarios (cp. Batty 2005).

¹⁴ Moll and Zander (2006), who also work on the interdependencies of science and policy, inspired this concept of different knowledge spheres.

C) A third horizontal variation of knowledge can be referred to as *operational* or *implementation knowledge*. This kind of knowledge relates to the design, implementation and performance of strategies and projects. While the above-described *system knowledge* addresses a more abstract set of ‘problems’ and ‘architectures’, *operational and implementation knowledge* is bound to the context. This knowledge seeks to understand process architectures, methods, models and tools in a given situation and a specific place. Implementation knowledge refers to the question of ‘how to get things done’ on the ground. It operates with ‘local’ knowledge and experience, informal networks and socio-cultural capital. Urban experts can gather operational and implementation knowledge through all sorts of operations on the ground, for example, by the application of pilot projects.

The added value of a European Perspective

A further element needed to complete the picture we are drawing is the question of Europe: What has Europe to offer sustainable urban management? Drawing on this question, the following paragraph seeks to present a series of characteristics of what may be called ‘the European urban experience’.

Europe stands out with her long and very specific urban history. The continent is among the most developed and highly urbanised places in the world (cp UNDP 2003). The European city stands out for its close relation the history of enlightenment, modern democratic societies, and industrialisation.¹⁶ While some parts of Western Europe can be regarded as the cradle of modern democracy and the modern state (e.g. from the French revolution to Napoleon and the Weimar Republic), other places came into being with the origin of industrialisation (Manchester, Upper-Silesia). 19th century European metropolises, from Berlin, Paris, London and Brussels to Vienna, Budapest, or Madrid, were based on large industrial economies, and also experienced tremendous growth rates.¹⁷ These cities were mainly formed by the coming of the railway age, electric power, and the new scientific technologies of ‘hygiene’ such as healthcare, fresh and sewage water. They are also the birthplaces of modern institutions, such as the police, modern health care and educational systems, as well as of bureaucratic governance, including the discipline of urban planning (cp. Mumford 1961, Benevolo 1975).

Contemporary Europe is among the best connected, economically and culturally richest and most developed regions of the world. Most of its cities are benchmarks for the urban ‘quality of life’. The present populations profit greatly from large investments in urban infrastructure made by previous generations. Europe is among the regions with the highest income levels, while at the same time the polarisation of incomes remains comparatively low. European cities cluster into urban systems which are highly networked by high speed rail systems, modern highways and a dense network of regional air carriers. Surveys confirm that most of the cities with the highest quality of life worldwide can be found in Europe. The Economist’s quality of life index (2005) locates nine out of the world’s top ten countries in Europe¹⁸ and Europe’s cities make up for seven out of the top ten cities in Mercers Quality of Living Survey (Mercer Consulting 2007).

This high development status of Europe is underlined by state of the art of environmental policies and programmes.¹⁹ Progressive environmental regulations, such as the European Carbon Trading Scheme (ETS) or the promotion of renewable resources (e.g. the German Renewable Energy Sources Act²⁰), are driving international debates such as the Kyoto Protocol.

Another important European lesson is the experience of integration. Despite major struggles, conflicts and backslides European history is largely a history of ongoing unification and inclusion. For centuries, internal and external movements of people have earmarked the continent. The percentage of foreigners within European populations today is as large as 8.9 percent in Germany, 4.5 percent in the United Kingdom and 5.6 percent in France (cp OECD 2002). This has led to a multicultural and multiethnic Europe of regions with an overall culture of openness and tolerance.

¹⁵ The traffic management and simulation software VISUM demonstrates some state of the art traffic flow models: see http://www.english.ptv.de/cgi-bin/traffic/traf_visum.pl [r18.02.2008].

¹⁶ Going back in history one may also include the Roman as well as the medieval religious empires.

¹⁷ Manchester’s population, for example, grew from 22.000 people in 1773 to 303.382 in the year 1851 (cp. <http://www.manchester2002-uk.com/history/victorian/Victorian1.html>, [18.Feb.2008])

¹⁸ The exemption was Australia ranked 6th.

¹⁹ Some of the exemplary programmes are: local Agenda 21, Bristol Accord, S/ DK: Dogme 2000, Göteborg Agenda, EUROCITIESliveable cities project, EU-Urban-Agenda, TSUE (Thematic Agenda on Urban Environment, EMP’s, AC (Aalborg Commitments), Eco Management & Audit Scheme. (Cp. to the presentation by the colleagues from the European Environment Agency at this workshop).

²⁰ Cp. http://www.bmu.de/english/renewable_energy/current/aktuell/3860.php [19 Feb 2008]

The colourful patchwork of European regions – as represented by the recent concept for a new European ‘visual identity’²¹ – is nurturing a diversity of approaches and solutions just waiting to be explored. While some of the regions are more predisposed to free market ideologies, others are guided by the idealism of social democracy. Europe’s post-industrial landscape consists of areas thriving on agricultural products (such as the vineyards of France), small-scale medium sized family-run firms (as in Italy’s North), leisure, tourism and recreation (The Spanish Mediterranean Coast), as well as new software and service industries (Dublin). Other regional economies are driven by the reconstruction of post-industrial landscapes, which is a major task in itself.²²

Hence we see that the European urban experience has many lessons to offer. It represents a unique and particularly rich ‘mine’ of experiences for contemporary sustainable urban management and city planning.

A List of the Benefits of European Science and Research Networks

In summary, there are five major ways in which the practice of European science and research, as well as networks of European researchers can be beneficial to the practice of sustainable urban management in Asia:

- European science and research can facilitate the cultivation of decision making processes that are transparent and informed;
- Contributions from Europe can be helpful in the dissemination of scientifically based problem solving approaches, offering a unique set of lessons;
- They are capable of supporting the establishment of systematic and efficient planning processes, e.g. for places lacking the capacity to do so alone;
- The experience of European research can contribute to the identification of optimal principles, practices and locally customised solutions;
- Lastly, permanent links between Asian and European science and expertise on sustainable urban management can contribute to a long-term and mutually beneficial exchange of experiences and know-how.

Indeed, European science and research has much to offer and it is keen and open to mutually defining specific missions and priorities.

Urban Research Networks such as N-AERUS

European research networks such as the Network-Association of European Researchers on Urbanisation in the South (N-AERUS) – represented by this author – provide manifold potential to link science and urban management research between Europe and Asia.

N-AERUS is a science network of several hundred urban experts. It is mainly based on European personalities working in other countries, thus linking European state of the art knowledge and expertise with international experience. The network came into being through the sole desire of the professionals to share their experiences, to spread best practice techniques and to increase the joint knowledge base on urban development issues. The members of the network seek to develop guidelines and principles, to match needs with solutions.

Conclusion

This contribution to the 5th Asia Europe roundtable has sought to elaborate a basic framework for the collaboration between science and research and Sustainable Urban Management. Particular attention has been given to the added-value potential and the European perspective. A general framework was established by presenting a set of decisive trends which drive the formation of contemporary human settlements, which are increasingly urban. Among these meta-tendencies were: An historically unique ‘explosion’ of populations and economies (*megagrowth*); an equally unique ‘implosion of space’ due to decreasing transport and communications costs (*collapse of distance*); the growing dominance of advanced market economies and a related free market logic (*privatisation*); and the increasing relevance of knowledge and information for contemporary urban formations (*informalisation*).

Secondly, and more specifically for our purpose, a framework of sustainable urban management as well one of science and research was outlined. It was argued that urban management is a practical and active discipline,

²¹ Cp. OMA/ AMO 2001: Eu Barcode, Rotterdam, http://www.oma.eu/index.php?option=com_projects&view=project&id=282&Itemid=10

²² Examples include the cities and regions of Lille (F), Emscherpark (D), Gruenmetropole (D, B, NL), Manchester (GB), Saarland (D).

generally bound to local cultures and politics, while science and research is a practice related to reflection and bound to abstract information, knowledge and theory.

Based on this framework, six of the possible impacts that scientific inquiry can have on urban management were presented: Firstly, science can deal with the topic of sustainable urban management in a general and holistic sense. Secondly, it can work on each of its sub-disciplines, and thirdly, it can add value by contributing to the dissemination of knowledge, e.g. through publications, teaching, education and capacity building. In addition, this examination considered three specific horizontal spheres of knowledge: *target knowledge*, *system knowledge*, and *implementation knowledge*. All of these help to explain the possible contributions of science more clearly.

After this framework of science and sustainable urban management was established, the final section of this paper presented a range of options regarding how urban management can be 'topped up' by the potential of Europe in general and scientific networks in particular. An integrated, connected and multicultural 'Europe of regions' offers many experiences to be shared – while still demonstrating room to learn.

Groups of scientists and researchers such as the Network-Association of European Researchers on Urbanisation in the South are perfectly positioned to facilitate global processes of exchange and mutual learning. Hence, as platforms for critical knowledge exchange, these networks are inviting partners from a wide range of institutions (from Europe and beyond) to link up and collaborate on jointly defined research agendas.

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