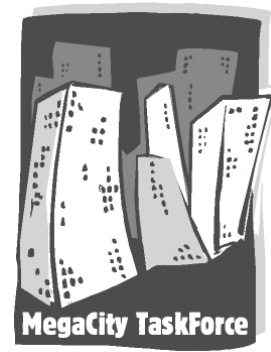


MEGACITY TASKFORCE

INTERNATIONAL GEOGRAPHICAL UNION



Newsletter No. 5

Cologne, 12 June 2006

Dear reader,

The focus of this fifth issue of the Newsletter of the MegaCity TaskForce of the International Geographical Union (IGU) lies on reports of a large number of activities in megacity research and outreach since 2005. They include the proclamation of the International Year of Planet Earth (IYPE) – with one of 10 key topics being “Megacities: our global urban future” – as well as the approval and start of three internationally operating, interdisciplinary megacity research programmes funded in Germany, and, furthermore, information on several conferences and workshops.

The Newsletter is disseminated via E-mail and/or ordinary mail (upon request). Please feel free to pass it on to interested colleagues. We endeavour to keep our internet presentation up to date and invite you to visit our website at www.megacities.uni-koeln.de for information and details.

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1. International Year of Planet Earth: key topic “Megacities – our global urban future”

On the 22nd of December the UN General Assembly adopted by consensus a Resolution by the United Republic of Tanzania and co-signed by 82 nations, to proclaim 2008 as the UN Year of Planet Earth. The press release issued by the UN after adoption of the Resolution, reads as follows: "By a draft on the International Year of Planet Earth, 2008, which the Committee approved without a vote on 11 November, the Assembly would declare 2008 the International Year of Planet Earth. It would also designate the United Nations Educational, Scientific and Cultural Organization (UNESCO) to organize activities to be undertaken during the Year, in collaboration with UNEP and other relevant United Nations bodies, the International Union of Geological Sciences and other Earth sciences societies and groups throughout the world. Also by that draft, the Assembly would encourage Member States, the United Nations system and other actors to use the Year to increase awareness of the importance of Earth sciences in achieving sustainable development and promoting local, national, regional and international action."

The Committee, to which the Press Release refers, is the Second Committee of the UN General Assembly where the International Year was discussed in two terms and approved before it was brought in the Plenary Session of the General Assembly. In fact, the International Year of Planet Earth will be a triennium, starting in 2007 and closing by the end of 2009, with the UN Year of Planet Earth 2008 in the centre.

Eduardo F.J. de Mulder

Chair Management Team of the International Year of Planet Earth

<http://www.esfs.org/>

Key topic: “Megacities: Our global urban future”

One of the key topics of the International Year of Planet Earth – which is introduced by a brochure - is “Megacities: Our global urban future”. The brochure sets out how teams of Geographers and Earth scientists can contribute to a better understanding of megacities, with a view to improving their management and hence attain a greater degree of sustainable development.

Within the International Year of Planet Earth, examples of balanced and safe urban management will be identified and promoted in association with local administrations, organizations and residents in major, though contrasting, megacities worldwide. Understanding of socio-economic issues and known constraints upon development will be shared with urban authorities and other stakeholders. Planning and management systems will be critically reviewed to assess their ability to support or hinder sustainable megacities. Existing surface and underground land use practices and future aspirations will have to take account of a range of potential constraints; these might include re-locating or deferring urban construction so as to avoid rendering inaccessible valuable assets including, for example, high quality aggregates or mineral resources. This will help identify good practices, pitfalls to avoid, and pragmatic compromises between social and economic needs.

The International Year of Planet Earth will provide an opportunity for multidisciplinary consideration of the key issue of sustainability of megacities. This requires cross-disciplinary collaboration between social, economic and natural scientists. An

important first step will be to identify and establish groups willing to collaborate on evaluating the problems and advantages of megacities and identifying approaches to improved efficiency and quality of life in megacities. It is important to recognise the cultural diversity both between, and within, megacities across the globe - there can be no “one size fits all” solutions. The question of whether or not megacities threaten or enhance sustainable development can be addressed.

The megacities science programme of the International Year of Planet Earth will identify transferable 3D planning tools, GIS analyses, spatial decision support and monitoring systems that will support long term management of megacities. The focus will be on ways to optimize the positive and ameliorating the negative impacts of development on social and natural environments, and enhance prospects for multiple land use. Publications, reports, software, multimedia visualizations and exhibitions will be produced in order to show application of principles to other urban areas. This programme will include conferences, workshops, seminars and summer schools for scientific exchange and capacity building, as well as for education to raise public awareness of the issues in megacities.

The scientific results and findings need to be communicated to a wide range of stakeholders if sustainable megacities are to be a reality. Awareness is rising, but understanding needs to be broader and our ability to manage the complex systems represented by megacities requires better skills. The media and (real-time) internet will be used to reveal the inner workings of megacities to the wider public – including policy makers, regulators and fund providers. In addition, simplified models and teaching kits for educational establishments and public awareness will be developed.

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The brochure can be downloaded – as all the other key topic brochures as well – at: <http://www.esfs.org/downloads.htm>

2. Research for Megacities: Three internationally operating, interdisciplinary research programmes

Three internationally operating, interdisciplinary research programmes have been approved and started to work in 2005: They have been developed as a complement to each other and in close cooperation during the phase of project definition. The three programmes are funded by different funding agencies: (1) The German Federal Ministry of Education and Research (BMBF) is focusing on research on sustainable development of selected emerging megacities worldwide. (2) The German Research Foundation (DFG) aims at developing theoretical approaches and models for a deeper understanding of informal processes and structures in megacities, with regional focus on Dhaka/Bangladesh and Pearl River Delta/China. (3) The Helmholtz Association is focusing on the multiple risks of and in megacities, with regional focus

on Santiago de Chile and, in a later stage, other Latin American megacities. The three programmes convene regularly in order to encourage research on key questions concerning megacities, to include ecological, economic and social aspects, to bundle multidisciplinary competences, to enhance exchange among (inter)national research partners, to strengthen the dialogue between science, politics and civil society for megacities and to support the dissemination of information on megacities.

3. Research for Sustainable Development of the Megacities of Tomorrow (funded by: German Federal Ministry of Education and Research, BMBF)

A prominent example for global changes that no longer affect individual countries or regions alone but affect the whole of humanity is the trend towards urbanisation and the spread of megacities, especially in developing and newly industrialising countries. In 1975 only 38 % of the world's population lived in cities. More than 50 % of the world's population is predicted to be living in cities in 2007, and this will increase to two thirds by 2030. These shifts and the increasing population density are unprecedented and are taking place at a pace (the present cities of the world grow by 60 Million per year) that is putting to the test the strategic and innovative competence of politics, the economy and civil society. This trend culminates in so-called megacities with more than 10 million inhabitants. From only five in 1975 their number is expected to grow to 26 in 2015. In addition, there are numerous other large cities and those with over a million inhabitants that are moving towards the 10 million mark. These "megacities of tomorrow" are of special interest to politics as there is still an opportunity for precautionary action and targeted urban development. Characteristic of this focal point of support is that it is firmly embedded in the concept of sustainable development. Environmental, economic and social aspects of urban development are incorporated into a single concept. This means that the envisaged project themes are not oriented towards individual issues (e.g. hydrological cycles) but towards concrete areas of need (e.g. water supply) that encompass all three aspects of the sustainability principle and are inevitably researched in a multi-dimensional and preferably trans-disciplinary way.

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Research for Sustainable Development of the Megacities of Tomorrow
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"Megacities of Tomorrow" targets the development and implementation of planning and management strategies for future megacities. Presently, 14 bilateral teams with partners from Germany and emerging megacities are funded.

The projects are located in Brazil (Recife), China (Jiading, Urumqi and Pearl River Delta), Ethiopia (Addis Ababa), India (Hyderabad, Pune), Iran (Karaj-Hashtgerd), MExico (Guadalajara), Morocco (Casablanca), Peru (Lima), South Africa (Johannesburg), Tanzania (Dar es Salaam), and Vietnam (Ho Chi Minh City).

The members of the consortia come from science, industry, governing bodies and civil society. Their research is demand-driven. It addresses specific practical needs of urban living. Topics include: housing and construction, nutrition and urban

agriculture, public health and quality of life, urban planning and governance, energy supply and consumption, mobility and transport, water supply, waste treatment, and environmental management.

Research is linked to education to guarantee a continuous information flow and transfer of research results into practice. In the following is a short description of 8 of the projects.

3.1 Ürümqi: Dryland Mega-City Development. Managing Interconnected Sensitive Cycles

The research project is one of sixteen that are funded by the German Federal Ministry of Education and Research (BMBF) within the framework of the program “Research for Sustainable Development of the Megacities of Tomorrow”. The funding initially covers a set-up-phase of two years (September 2005 – August 2007). During this time contacts to the stakeholders in China will be intensified, the central needs of the population are to be identified and first concepts for future advancement should be developed. Promising concepts have the opportunity to be funded for a maximum of nine years (3 x 3 years) afterwards. Within the project key agents from the fields of research, local administrations and regional business cooperate closely.

Aims of the Project

The central aim of the transdisciplinary project is to develop and implement strategies and tools for sustainable development of Ürümqi (NW China), a rapidly expanding metropolis in arid central Asia. The project’s focus is to maintain and improve the quality of life in this future megacity with special regard to the health of the people. Since it is impossible to consider all aspects of the highly complex process network in a growing urban area simultaneously, the project centres on three core cycles, i.e. water, energy, and waste, and their interconnected cycles, which are considered crucial for the sustainable development of a future dryland megacity and which have many ramifications on other key aspects of urbanisation such as education or transport infrastructure.

Moreover, the case study of Ürümqi should serve as a model for developing strategies and technologies for sustainable growth that can then be transferred to other metropolises in arid areas.

More specifically, the objectives of the project are:

- To define and quantify the central needs of the growing urban population with special regard to human health and the environment
- To develop and implement an evolutionary and participative approach to the comprehensive modelling of the ecologically, economically, socially and culturally sensitive core cycles of water, energy and waste and of their interrelations.
- To develop and implement well adapted measures that promote a substantial rise in resource efficiency with special regard to avoidance of excessive resource exploitation and concepts of a circular economy.
- To cooperate with relevant groups and key players from politics, industry, commerce, science and society located within the Ürümqi agglomeration in order to form a basis for the successful transfer of integrated knowledge and adequate technology to local powers, authorities and NGOs.
- To implement management know-how for the growth of the future megacity of Ürümqi and to introduce cost-efficient organisational and technical means that

can be adapted to different cultural, social and ecological situations in order to satisfy the needs of the inhabitants in a sustainable manner. This includes a permanent evaluation of the managed processes.

Why Ürümqi?

Ürümqi is the capital city of the Autonomous Region of Xinjiang, China. The city represents the centre of the urban belt along the eastern Silk Road. The region at the foot of the Tien Shan mountain chain forms the ecologically most favourable area for human development with the most concentrated population in northwestern China. Presently, the greater agglomeration of Ürümqi has approximately 5 million inhabitants. The urban belt forms a chain of several big cities (with a total of 2-3 million inhabitants) with Ürümqi (2 million inhabitants) as the centre.

Due to the perpetual exploitation of large reserves of natural resources (especially oil, coal and gas), the economic and demographic dynamics in the area are well above the average. The annual growth rate of the Xinjiang economy (GDP) had about 17% in 2004 (Source: China Economic Review, Nov 2005, p. 52), which is significantly more than the Chinese average of 9%. Due to the ambitious challenges which derive from the rapid development of Ürümqi and its neighbouring cities, the regional government has recently decided to merge the planning, economic and political organisations of Ürümqi City and the Changji Region to a planning unit of more than 4 million inhabitants (data from 2005). As a result, the Ürümqi agglomeration can be labeled as a future megacity in a sensitive environment within a country currently undergoing a process of systemic transformation.

Ürümqi is a promising subject of megacity research for the following reasons:

- Today, Asia is still characterised by a relatively low degree of urbanisation but a rapid urbanisation process. This is particularly true for the Autonomous Region of Xinjiang with its harsh continental dry climate and rich mineral resources. The programme “Develop the West” of the central Chinese government in Beijing further stimulates urbanisation.
- In Xinjiang and especially in Ürümqi, daily life is determined by several different ethnic groups (Chinese Han, Uigures, Kasachians and Russians). This is typical of growing urban centres characterised by high attractiveness, urbanisation and accelerated immigration (esp. of Han). This provides not only problems but also new opportunities for urban life.
- It is an official decision to merge Ürümqi with the Changji-Region to a future Xinjiang megacity “U-Chang”. This is seen as a crucial measure to implement an integrated and more efficient management of the Ürümqi agglomeration. The conversion of traditional urban development concepts offers new and excellent opportunities for the Sino-German collaboration.
- The fusion of Ürümqi and Changji Region during the next years offers a unique window of opportunity for sustainability-oriented implementation, as the merging process in the coming years calls for substantial reorganisation and restructuring in the near future.
- The growth of dryland megacities and the interaction of the accelerated urban development with the natural environment is an insufficiently treated research topic. Dryland urban areas generally grow in favourable but ecologically sensitive regions such as the oases at the foot of the Tien Shan or the southern rim of the Junggar Basin. The Ürümqi area can be considered typical of similar big cities in drylands (e.g. in Central Asia, the Middle East, in northern Nigeria) with

accelerated growth and limited ecological resources. The present time window for substantial changes in the Ürümqi agglomeration is connected with a relatively high probability of prompt implementation of sustainability oriented approaches. Therefore, the facets of a sustainability-oriented megacity development in “U-Chang” already can be seen and studied in the near future and thus, be presented as an archetype for future megacity development in other dryland areas.

- In dryland megacities, humans and urban life *in toto* are very vulnerable to present climatic changes. As summarised in the recent IPPC reports, drylands and desert margin areas are particularly sensitive to the expected global climate change. Correspondingly, management concepts for sustainable growth of dryland urban areas must consider this specific sensitivity and reactivity. In the case of Ürümqi, the rapid melting of the Tien Shan mountain glaciers and the modified wind systems will have increasing influence on the quality of life in the growing urban belt.
- Ürümqi/“U-Chang” is an emerging megacity in a country that is presently involved in an ongoing political and economic process of systemic transformation. This provides new challenges and options for the city's resource management which have to be discussed with the local authorities in order to further develop well adapted and sustainable solutions.

The improvement of urban environments is presently considered to be one of the major tasks by the Chinese planning authorities and the shift towards a resource-saving, closed-loop recycling management is seen as one of the major challenges for the Chinese economy. Thus, it is currently a rather favourable time not only to discuss, but also to implement future-oriented concepts of resource management for megacities.

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Further information:

<http://www.urumqi-drylandmegacity.uni-hd.de/>
http://pt-uf.pt-dlr.de/englisch/9_293_ENG_HTML.htm

3.2 Governing Emerging Megacities: Water, Health and Quality of Life in Pearl River Delta, China and Pune, India

Major Objectives of the Project

This project provides – based on comprehensive analyses – applied solutions for sustained water and health systems as essential components of the quality of life and well-being in Indian and Chinese megacities. Designed as a truly trilateral research partnership of Chinese, Indian and German partners, the regional focus is on two

outstanding global “hot spots” of economic development and mega-urbanization in India (Pune as part of the Mumbai-Pune urban corridor) and China (Pearl River-Delta). By its trilateral approach, the project will contribute to a better understanding of urban governance processes in megacities and to the identification of appropriate new solutions.

In China and India megacities have grown to an unprecedented size and the pace of urbanisation has far exceeded the growth of the necessary infrastructure and services. Despite a long history of urban sanitary reform and healthful-city movements as well as many improvements in recent years, the inhabitants are confronted with water-related and environmental health risks – limiting the quality of life and well-being in megacities substantially. Additionally, increasing social inequalities and fragmentation lead – as in many megacities worldwide - to significant intra-urban (water and energy) supply shortages and huge health inequalities. Insufficient water supply and diseases indicate increasing disadvantages for the mega-urban population.

The project looks at the following strongly interconnected four major fields:

1. Securing of sustainable
 - (a) water and
 - (b) health supply for
 - (c) good quality of life
2. Development and implementation of
 - (d) efficient governance and steering mechanisms.

The guiding principles are:

- The project intends to work in a transdisciplinary, international and participative manner, with multidimensional analysis of dynamic, process-oriented approaches (decision support system), actor- or action-oriented components and long-term perspectives, flow models (material and communication flows, socio-cultural steering models). A holistic approach will integrate the human dimension into the hitherto mainly physical aspects of man-environment science, and will include early warning systems as well as modern problem-solving techniques (integrated monitoring and modelling of material flows, highest resolution satellite imaging and multidimensional Geographic Information Systems (GIS)).
- Equal participation of science, administration, development cooperation, the private sector and the public is crucial. A strong interaction of science, education and applied work is deemed important in order to assure efficient capacity building.
- The intensive participation of carefully selected, strong, reliable and already well-proven partners, organisations and institutions in China and India are important for the successful cooperation and research in the project. We are working together with outstanding partners with excellent reputation and with whom we have reliable experience on the ground of several years of cooperation.

Research Questions

- **Sustainability and quality of life:** Analysis and evaluation of policy measures of water supply and health care; value systems, demands and consumption patterns of different income groups

- **Water:** Contamination patterns and processes in sub-surface, surface and drinking water; regional water resources, supply and shortages; environmental toxicological assessment; public awareness and education programme
- **Health:** Concept and evaluation of public/private health systems; patterns and processes of diseases and malnutrition; health risk ranking and evaluation of policy measures; options for public-private interaction; public information, education and awareness
- **Governability and steering:** Evaluation of structures and decision making processes; cooperation and interaction between the different stakeholders; public participation and information; concept and implementation of digital city and decision support system

Expected Results

The project aims at jointly developing, testing and implementing comprehensive decision support solutions and concepts to support efficient governance and steering mechanisms for securing sustainable water supply and public health. While deeply rooted in the actual research regions through numerous collaboration partners from science, administration, governmental agencies and the private sector, additional existing links to scientific and governmental partners in Delhi and Beijing will ensure dissemination of project results beyond the individual cases within Chinese and Indian megacities. The foundation of national centres of megacity research in Guangzhou and Delhi/Pune is envisaged.

Project Organisation

The work packages are structured around the four major themes include a) health advantages and disadvantages for living in mega-urban regions, b) urban structures, processes, density and inter-connections, c) environmental and land-use dynamics and d) interrelationships, chances and frictions between traditional and modern urban culture. Understanding the interdependencies and links of these thematic foci is the precondition for sustainable development and good governance.

Chair of the Consortium

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- Faculty VI, Architecture - Environment – Society, Technical University Berlin
- InWEnt – Capacity Building International Germany
- Department of Earth- and Environmental Sciences, University of Munich
- Department of Civil Engineering, University of Duisburg-Essen
- Institute for Cartographics and Informatics, University of Hanover

Cooperation Partners in China and India

- in Pearl River Delta: Municipalities in the Pearl River Delta, Sun Yat-sen University, Guangzhou
- in Pune: Pune Municipal Corporation, Bharati Vidyapeeth Deemed University, School of Planning and Architecture (Delhi)

Internet

www.geographie.uni-koeln.de/pearlpune

3.3 “Metrasys” - Mega Region Transport Systems for China Tackling Mobility in Evolving Economies like China

Background:

Megacities are hot-spots with regard to all dimensions of an intended sustainable development. There is a special challenge in rapidly developing countries and regions of defining environmental sustainability targets that allow improvements social and economic living conditions without jeopardizing needs of future generations.

In response to the concern about the sustainable development of megacities, the “Metrasys” (Mega Region Transport Systems for China) project was proposed by the German Aerospace Centre (DLR) in cooperation with the Wuppertal Institute, DaimlerChrysler AG (Society and Technology Research Group) and Fraunhofer (Institute for Computer Architecture and Software Technology). The requirements for freight transport and to provide mobility for all parts of the population is of special relevance in fast growing agglomerations. With the implementation of good transport solutions in megacities, there is a chance to initiate favourable impulses for the development of larger areas. The gain from successful paths in development will even be greater if the approaches can be transferred to other agglomerations.

The project is for German partner financed by the German Federal Ministry of Education and Research (BMBF), and spans a period of 11 years. It is divided into seven working areas and four phases.

Project Objective:

The general objective of this project is to develop and demonstrate solutions for sustainable mobility concepts in the conurbation Jiading-Shanghai and Hefei (as transfer city) within one decade by a mix of mobility services, vehicle technologies and improved transport system management. In general, China is open-minded towards the application of modern technologies. The challenge, however, is to adapt to the special demands of target groups in passenger and goods transport as well as to the lower purchasing power and embed the technical solutions into a planning and policy framework

oriented towards sustainable development. The project will investigate how the solutions developed could be transferred to large conurbations that are likely to develop around megacities in other global regions. In order to provide the stability of concept, special attention will be given to knowledge for self-sustained production and maintenance of technologies, planning tools and procedures.

To this end, the following specific goals are pursued in this project:

- Adaptation and/or development of modern approaches and technologies always oriented towards the mobility needs of the population (usability, acceptability) and

taking into account the socio-economic and regulatory conditions (political and public awareness);

- Scenario simulations and analysis of impacts on sustainability dimensions;
- Realisation of effective concepts, demonstration and implementation of technologies and tools;
- Accompanying the planning process in the region;
- Capacity building (education, processes, institutions, participation in the transformation process of the Chinese society);
- Establishing international co-operation and economic and scientific relations.

The administration of the conurbanisation of Shanghai has ambitious plans for its economic development and could, therefore, be a model for less developed areas all over China and beyond. Product and service innovations that have proven to be suitable for the study region could hence serve as templates for other developing countries. Therefore, the major challenge of the project is to accompany the process and provide concepts and, at a later stage, execute pilot projects to develop a sustainable pathway. This will be enabled by a strong involvement with the Chinese partners ensuring the consideration of cultural aspects and the exchange of knowledge. Special attention will be given to the transferability of the mobility concepts to other regions in China, like the transfer city Hefei as well as in other developing countries.

The project itself is preceded by an orientation and planning phase during which the political, societal, and economic conditions for a successful implementation of concepts and technological solutions will be explored. This will be accomplished by establishing close cooperation and knowledge exchange between the German and Chinese project partners.

Region of interest – Jiading District in Shanghai and Hefei (as Transfer city):

This challenge of implementing a strategy towards sustainable transportation in megaregions will be demonstrated for the Jiading District and Hefei City (as Transfer city), which is on the verge of passing the threshold towards becoming a megacity within the next decade.

Jiading district is one of the megacities of tomorrow embedded in the vast Metropolis of Shanghai in rapidly industrialising China with a total area of 463.9 km². Its population is expected to grow to 1.2 million inhabitants by 2010 and together with Shanghai, this metropolitan region would have a total population of about 15 million. Jiading District Government has actively worked for a new Strategic District Development Plan, which goals are to make Jiading a model area for Shanghai's suburban development strategy.

The City Hefei is selected as transfer city of the Project. Hefei is the capital of Anhui Province, located at the middle of China, between Yangzi River and Huai River. It has the important regional advantage for connecting Middle China with East and West China. Total city area is 7 266 km², and urban area is 639.7 km². The whole population is 5.3 million, and urban population is 2.7 million.

Project Plan:

The complete project will run for a time period of 11 years, which is divided into four project phases. It includes an initial orientation phase of 2 years which aims at the specification of concrete tasks, the establishment of cooperations and project financing and the outline of a project plan. This is followed by three project phases of 3 years each aiming at the

Phase 0 – Orientation and Project Planning (2005 – 2006)
Phase 1 – Concept Phase (2007 – 2009)
Phase 2 – Implementation and Demonstration Phase (2010 – 2012)
Phase 3 – Consolidation and Extension (2013 – 2015)

The overall project is divided into seven “Working Areas” (WA):

WA 0: Coordination of the project
WA 1: Policy and Planning Framework
WA 2: Urban and Mobility Development
WA 3: Passenger Transport concepts and product
WA 4: Commercial Transport concepts
WA 5: Traffic Management
WA 6: Economic, cultural, and social aspects
WA 7: Concept Integration

Working Area 1, 2, and 6 provide the necessary basis for local implementation and the development of integrative concepts. WA 3, 4, and 5 will handle the preparation of pilot projects. Working Area 7 will integrate the concepts defined and the demonstration projects planned.

Project Consortium:

German Research Team:

- German Aerospace Center (DLR), Transportation Studies Group
- DaimlerChrysler AG, Society and Technology Research Group (RMI/Y)
- Wuppertal Institute for Climate, Environment and Energy, Research Group "Energy, Transport and Climate Policy"
- Fraunhofer, Institute for Computer Architecture and Software Technology

China Research Team:

- The Government of Jiading District, Shanghai
- The Government of Hefei, Anhui Province
- Research Centre for Software Engineering Technology Anhui Province (ASEC)
- Tongji University School of Transportation Engineering
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3.4 Hyderabad as a Megacity of Tomorrow: Sustainable Urban Food and Health Security and Environmental Resource Management

“Why Hyderabad?” and “What Makes this Case Unique?”

The focus of the Project is the South Indian city of Hyderabad. The population of the city, growing at the rate of 27% per decade, was estimated at 5.5 million in 2001 and is expected to reach 10.5 million by 2015. Specific reasons why this case has been

selected are: clear observability of the processes leading to the formation of a megacity; extreme dualism between the groups benefiting from economic growth and other groups struggling to fulfil their basic needs; the status of Hyderabad as a city of knowledge generation, to be used for problem solutions (a strategic objective of the Project), and its location in a semi-arid agricultural region which is the reason for huge migration from the neighbouring rural areas.

Cluster of Selected Problem Areas and Methodology of Analysis

Four basic and closely interrelated problems of sustainability will be studied in depth: (1) environmental and resource degradation, (2) poverty and nutrition, (3) application of locally generated knowledge and (3) institutional innovation and improved governance structures. Two of the research fields are physical in nature (food security and natural resources), while two of them deal with institutional questions (knowledge systems and governance structures). Research in these four areas is combined with process-oriented components of the Project such as communication and co-operation strategies emphasising the gender dimension, development of a knowledge-based action plan and a dissemination strategy, for example through Policy Learning Workshops.

The Project builds on existing concepts provided by the participating researchers and development institutions. Some of the major jointly co-ordinated methods of analysis are: 'Institutions of Sustainability' Framework, 'Livelihood System Approach', 'Nutrition and Health Analysis', 'Watershed Management' Concept, approaches of 'Knowledge Management', 'Co-operative Science', 'Gender Analysis' and 'Urban Governance'. Further, the Project will use experiences from several of the major participatory development approaches practised by relevant actors in Hyderabad. These actors are the Municipal Corporation of Hyderabad (MCH) and Hyderabad Urban Development Authority (HUDA), scientific institutions such as Administrative Staff College of India (ASCI) and Centre for Urban and Environmental Studies (OU-RCEUS), University of Hyderabad (UoH), National Institute of Nutrition (NIN), industrial federations such as Confederation of Indian Industry (CII) and networks of non-governmental organisations such as Confederation of Voluntary Associations (COVA) and Forum for a better Hyderabad (FORUM).

Project Objectives

Priority objectives of the Project are to develop a "Sustainable Development Framework (SDF)" and a strategy to achieve consensus on a "Perspective Action Plan" for Hyderabad focussing on core issues of nutrition and health security as well as environmental and resource management. Specific objectives are:

1. To formulate the "Sustainable Development Framework" (SDF) for Hyderabad mentioned above, based on scientific analysis and participatory approaches
2. To achieve institutional innovation and improved governance structures in Hyderabad
3. To come up with a concept on a 'Sustainable Urban Food and Health System' and 'Sustainable Environmental and Resource Management' in the urban and suburban regions
4. To develop strategies of communication and co-operation with special emphasis on the gender dimension
5. To formulate the Perspective Action Plan (PAP) mentioned above, achieve a consensus and institutionalise selected pilot projects for this plan

6. To secure adoption of the Perspective Action Plan by politicians, agencies, groups, firms
7. To document and disseminate the Project's findings and to organise learning processes for research and development cooperation

Pilot Projects for Implementation

The Project has started in July 2005 and presently finds itself in the middle of a two years preparatory phase. Up to three main phases of three years each are expected to follow. After a ten day International Workshop in Hyderabad in March 2006, presently the Project partners are finalising their plans to implement the proposed seven pilot projects with the help of capacity building measures in Hyderabad from July 2006. National and international specialists from India, Germany and the United States are engaged in these tasks so as to carefully design this "qualification phase" with the relevant stakeholders. Based on the experiences from the capacity building measures and pilot projects, concepts for the consecutive analysis of four work packages will be worked out, which deal with the four problem areas already mentioned (food and nutrition, natural resources, knowledge systems and governance structures).

The following pilot projects will be implemented:

- (a) Formation of a women's consumer co-operative for food in the old city of Hyderabad
- (b) Organisation of private-public-partnership (PPP) in Green Technologies and Small and Medium Enterprises (SMEs)
- (c) Measures for natural resource management and for urban land rights advocacy
- (d) Design of an internet-based information tool "www.sustainable-hyderabad.in" for providing information on urban and peri-urban sustainability issues
- (e) Improvement of food and nutrition security as well as water and food quality including public health implications
- (f) Development of a traffic and transport "masterplan" for the Hyderabad region
- (g) Rural – Urban Linkages: Migration and new agricultural programmes

Expected Results and Impacts

The following effects and results are expected from the Project:

- Concepts for the implementation of a Perspective Action Plan (PAP), polycentric but coherent governance structures, decision making support tools for the Municipal Corporation of Hyderabad (MCH), Hyderabad Urban Development Authority (HUDA) and civil society organisations will be put into practice.
- Capacities for stakeholders like Confederation of Indian Industry (CII), Confederation of Voluntary Associations (COVA), Forum for a Better Hyderabad (FORUM) and others to participate in the implementation of the Perspective Action Plan (PAP) will be built and tested in pilot projects.
- Pilot projects will be evaluated, out-scaled and integrated in the Perspective Action Plan (PAP) and handed over to respective actors including policy papers, policy learning workshops and institutional innovation workshops.
- Dissemination of research and development outcomes using Indian, German and international platforms and networks for scientific and technological collaboration as well as for development co-operation will be achieved.

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Cooperation Partners in Host Country

- Ministry of Municipal Administration and Urban Development (MoMAUD)
- Municipal Corporation of Hyderabad (MCH)
- Hyderabad Urban Development Authority (HUDA)
- Collectorate of Hyderabad (CoH)
- Indo-German Watershed Development Programme – Andhra Pradesh (IGWDP)
- Administrative Staff College of India, Hyderabad (ASCI)
- National Institute of Nutrition (NIN)
- Regional Centre for Urban and Environmental Studies, Osmania University (RCUES-OU)
- University of Hyderabad (UoH)
- Confederation of Indian Industries (CII)
- FORUM FOR A BETTER HYDERABAD (FORUM)
- Confederation of Voluntary Associations (COVA)
- Centre for Action Research and Development, Hyderabad (CARD)
- Tarnaka Residents Welfare Associations, Hyderabad (TRWA)
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3.5 Sustainable Holistic Approach & Know-how Tailored to India (SHAKTI)

India, like most regions of the world, is going through an intensive economic, social, and political transformation brought about by rapid urbanization and globalization. The country's focus on economic liberalization, financial sector reforms and a new emphasis on decentralization has influenced the urban growth, the economic role of cities, and the service needs of urban dwellers. However, until very recently, urban

infrastructure was not considered as a "core" economic issue. National policy discussions focused more on rural development and rural poverty than on the problems of cities. This relative lack of policy attention, combined with flawed incentives and insufficient revenues of most urban service entities has resulted in the low performance of the sector. It has led to low quality, reliability and coverage of services, inadequate maintenance and ineffective operation of the existing infrastructure, a mounting backlog of investment requirements and unresponsive treatment of users, especially poor and vulnerable groups.

Led by the European Institute for Energy Research, a joint interdisciplinary consortium of German and Indian research institutions, the city government of Hyderabad as well as regional and local Indian authorities were established based on prior collaborations. The aim of the SHAKTI-project (SHAKTI: Hindi for "power", "force", "capability") in the first phase (year 1-2) is to conjointly formulate integrated projects mainly focusing on the urban infrastructure and fostering solutions for a sustainable development of Indian "Megacities of tomorrow" and implement them in the second phase (year 3-11).

Joint Action towards Sustainable Development in Hyderabad

Aiming at a sustainable development in Hyderabad is calling for the simultaneous consideration of the existing city, particularly the old town and the new development areas. The existing city requires sensitive solutions for the renewal of housing and upgrading the technical urban infrastructure, preserving the cultural heritage and the possibility for a large part of the population to keep earning their livelihood. New areas have to be developed in an integrated regional concept regarding long-term perspectives. Coping with such tremendous growth along with huge accumulated needs will be a major challenge with respect to limited resources.

The German consortium's field trips and discussions on site have clearly revealed an urgent need for Hyderabad to adapt to population pressure by the integration of projects for suitable infrastructures into long-term adaptable strategies. These projects cannot be run separately; they have to fall within the scope of a holistic approach looking for a sustainable development. So far, the city of Hyderabad has done only limited reflection on strategies and instruments to define such a holistic approach. Given the imperative demand for social sensitivity in implementing change processes, information and participation of citizens in the decision-making process are of special importance. The team's field trips have also revealed that NGOs play a crucial role. Discussions with decision-makers confirmed that NGOs are being considered as mediators, helpful partners, evaluators and early warning systems. Therefore, close cooperation is indispensable for the success of the proposed project.

Overall Goals

The overall goals of SHAKTI will address the current and future needs of Hyderabad by simultaneously providing applicable solutions with associated strategies, action plans for implementation or business models integrated in a long-term sustainable development perspective. The proposed solutions will implicate a long term regional, national and global perspective based on an integrated, holistic approach. Each technical urban infrastructure system of the city has to be explored in its interrelation to others, impacts on the urban development and the three dimensions of sustainability.

The main areas pointed out from the city authorities and our Indian research partners lead to three overall goals:

1. Concepts, Strategies and Instruments to Cope with Growth

Implementing strategies and concepts for urban growth on the regional and the municipal scale, both for new development areas as well as for the existing city will be elaborated in terms of a higher population density, a lack of infrastructure and affordable housing. Precautionary actions to reduce urban sprawl and avoid over-exploitation of natural resources will be identified.

2. Sustainable Solutions for Technical Urban Infrastructure

The selected sectors are water, sewerage and sanitation systems, energy and transportation. Integrated concepts for the future infrastructure systems will be developed by optimizing the existing infrastructure. A strong focus will be on integration (e.g. energy use for water supply), and assessing environmental, economic, social and cultural impacts.

3. Integration of a Collaborative Learning and Planning Processes

International state-of-the-art planning and technical standards will be reflected and discussed for potential adaptation to the Indian cultural context. Monitoring and evaluation procedures will be integrated in the decision making process for the long-term development as well as early warning systems of fundamental changes. A communication and dissemination process to foster public participation in the development process will be elaborated.

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3.6 New mega-cities research project: PlaceMeg

“‘Place-Making’ for Sustainable Mega-Cities of Tomorrow” is the title of a new research project exploring the prospects for place-based solutions to water supply and sanitation problems in the Guadalajara Urban Area. The project “PlaceMeg” is currently being funded for a preliminary phase (2005-2007) by the German Federal Ministry of Education and Research (BMBF) within the framework of an exciting and ambitious research programme “Sustainable development of the mega-cities of tomorrow”, along with 15 other projects on emergent mega-cities from across the globe.

The purpose of the project is to develop – together with stakeholders in the Guadalajara Urban Area – concepts, methodologies, strategies and technologies for promoting more context-sensitive, user-oriented and place-based solutions to water management challenges, in particular in marginalized urban settlements experiencing rapid and unorganised population growth, and, from this, to generate knowledge of value to other emergent mega-cities. The research for the full 11-year period of funding (pending approval) seeks answers to the following questions:

1. How are processes of rapid urbanisation, socio-economic restructuring and institutional change affecting systems of provision and consumption of water in the Guadalajara Urban Area (GUA)?
2. How far and in what ways can place-based, user-oriented forms of collective action help improve water supply and sanitation (WSS) in the region’s marginalised settlements?

3. How can potentially beneficial place-making processes in marginalised communities be promoted as part of a wider strategy to improve WSS in the region?
4. How can the findings and experiences be gainfully applied to place-making in other policy issues and to WSS in other Mexican and Latin American cities?

The Region: The City of Guadalajara, Mexico, currently has a population of 3.7 million and is subject to rapid and persistent population growth (4.6% per annum for the period 1950-2000). In the Guadalajara Urban Area (GUA), comprising the municipalities of Guadalajara, Zapopan, Tonalá and Tlaquepaque, annual growth rates in some areas have averaged 12% over the last 20 years. Given current trends, boosted by the latest phase of post-NAFTA industrialisation and its strategic position in relation to emerging Asian markets, the GUA is likely to become a mega-urban region within the next ten years.

The Issue: The thematic focus of the PlaceMeg project is on problems of water supply and sewage disposal in the GUA as a window firstly on processes of rapid urbanisation characteristic of Latin American cities and secondly on the governability of these processes. WSS problems common to many major conurbations in developing and threshold countries – such as inequalities of service, inefficiencies and environmental damage – are compounded in the GUA by the physical restrictions of the highland valley basin, strong seasonal variations in rainfall and water demand from nearby Mexico City. Processes of decentralisation and commercialisation in the Mexican water services sector are creating new opportunities, but also new sensitivities, over the way water is managed at a local and regional level. By focussing on the provision of adequate services in the largely unplanned and marginalised areas of new urban growth the project hopes to reveal important dynamics of the complex relationship between urban and infrastructure development in an emergent mega-urban region.

The Approach: The increasingly contested nature of water management in Mexico, the uncertainties surrounding the institutional frameworks and the limitations of conventional conceptualisations of large technical systems require a novel approach for understanding how WSS operate in the GUA and how they might be improved. The PlaceMeg project applies the concept of “place-making”, in the sense of strategic action to make a place more attractive for particular purposes, building on local identities and practices, and combines it with the notion of “technological recesses”, referring to the neglected spaces of a city not served (adequately) by standardised infrastructure systems, in order to stimulate more effective and participatory forms of local governance for WSS. These concepts will provide guidance for detailed empirical research which critically assesses the potential for, and limitations of, participatory, local responses to WSS problems within broader political, environmental, technical and socio-economic contexts of action.

The Partnership: The project partnership is built around a long-standing, intensive collaboration between the Leibniz Institute for Regional Development and Structural Planning (IRS) and the Department of Regional Studies INESER in the University Centre of Economics and Administrative Sciences at the University of Guadalajara (CUCEA-UdG). Around each of these anchor organisations a network of participating organisations from research, administration and business in Germany and Mexico has been created, providing technical and managerial, as well as scientific, expertise in the relevant fields of urban development and water management. The partnership

will be extended and consolidated for the main funding phases (2007-2013) to cover additional knowledge skills and organisations.

The Products: The principal products of the project will be a set of management tools for improving water supply and sanitation and guiding urbanisation processes in the Guadalajara Urban Area (management strategy, urban monitoring system, model methodology), several applications introduced during the course of the project (pilot projects, network of competence, innovative technologies) and new scientific insight into ways of conceptualising and promoting more sustainable WSS in mega-cities derived from inter- and transdisciplinary cooperation.

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3.7 The Balance of Urban Growth and Redevelopment in Ho Chi Minh City – Sustainable Housing Policies for Megacities of Tomorrow

Background: housing provision and urban development in Ho Chi Minh City

In July 2005, the German Federal Ministry of Education and Research launched the funding programme “Research for the Sustainable Development of the Megacities of Tomorrow”. Among 16 others, the research project “The Balance of Urban Growth and Redevelopment in Ho Chi Minh City (HCMC)” was selected for the initial 2-year phase.

HCMC is Vietnam’ largest metropolitan area and the most outstanding motor of innovation, economic growth and modernisation. Since the state-wide introduction of the market-orientated renovation policy (Doi Moi) in 1986, the city experiences dynamic processes of economic, social and spatial transformation. As an economic centre it attracts people from rural regions seeking jobs and possibilities for income generation both in the formal and informal sector. Due to this massive in-migration the population of HCMC has almost doubled within the last 20 years to more than 7 million inhabitants. Considering the continuing migration process (estimated 300.000 new inhabitants/year) and the increasing housing space needs of the existing population, the provision of housing has become a key issue in urban development. From the perspective of sustainable urban development it will be a crucial issue how the emerging megacity can meet the enormous demand for additional housing units (the Master Plan foresees 600.000 to 1 million new housing units until 2015) and how the rapid urban growth can be controlled and managed.

So far, the existing housing policies and instruments of urban planning have proved to be insufficient. Uncontrolled settlement has led to poorest living conditions with unworthy standards of construction, an extensive use of sites, environmental problems and a lack of technical and social infrastructure.

Overall objectives and fields of actions

In the light of the current situation of urban development in HCMC the challenge of sustainable housing provision is twofold: Existing settlements have to be redeveloped and upgraded in order to improve the living conditions for their residents. At the same time, the rapidly emerging new settlements and the processes of urban growth and expansion have to be controlled and planned in a sustainable way.

Therefore, the research consortium initiated the project “The Balance of Urban Growth and Redevelopment in HCMC” promoting an integrative, cross-sectoral approach on urban development in this megacity of tomorrow. The project aims at the formulation of strategies for fair housing provision and sustainable urban development. In order to combine research and practice in urban development these strategies will be tested and qualified by implementing a starter project on the neighbourhood level.

Sustainable housing provision comprises various inter-related levels of intervention by a great set of actors and stakeholders. Therefore, the project is divided into six different action fields that reflect the multidimensional character of housing development and policies:

- Action field 1: Administrative Structure and Planning Management
Core objective: Development of qualified management structures and capacity building in the public administration
- Action field 2: Integrated regional development and spatial organisation
Core objective: Development and model application of integrated regional planning instruments and procedures in the region of HCMC
- Action field 3: Spatial planning and land use
Core objective: Promotion of a strategy for enhanced land-use management and growth control with integrated residential and transportation planning
- Action field 4: Housing market and provision
Core objective: Development of new strategies for comprehensively effective housing provisions
- Actions field 5: Liveable neighbourhoods
Core objective: Development and implementation of demonstration projects for liveable neighbourhoods in urban restructuring and urban expansion
- Action field 6: Monitoring and evaluating sustainability via an indicator framework
Core objective: Development and implementation of a GIS-based Sustainability Indicator Framework

The respective action fields are responsibly managed by one German partner in close cooperation with a Vietnamese counterpart. This leads to a dialogue based work process allowing close collaboration between Vietnamese and German research partners and involvement of a wide range of stakeholders of urban development. In a series of fora, workshops and bilateral meetings transdisciplinary cooperation is fostered.

First results

The introduction of the market-orientated Doi Moi policy achieved considerable success in poverty reduction in Vietnam. However, the housing situation remains one of the most urgent problems in HCMC. Current housing projects developed by private or semi-governmental investors target almost exclusively at upper income households. In contrast, only moderate investment is being made in housing for the

vast majority of low income households. Apparently, future housing strategies should concentrate on narrowing the gap between the supply and demand of housing for low income groups. These strategies have to take into consideration that “low income” does not only refer to the urban poor but to a broader range of different socio-economic groups. This socially diverse mix needs to be reflected in the development of adequate housing typologies.

Another important, yet often neglected aspect in urban planning processes in HCMC is the issue of income generation and job creation and its spatial implications. The generation of employment opportunities as the economic basis of the future residents has to be considered in the planning and designing process of new neighbourhoods.

This demonstrates the necessity of an integrative planning approach for sustainable urban development. However, the planning system and the administrative structures of HCMC are characterised by high fragmentation. There is a severe lack of vertical and cross-sectoral coordination of urban development. Information on social and economic structures as well as on the ecological quality are not systematically linked to the spatial transformation process of the city. Consequently, capacity building, understood as individual training for all actors involved in planning processes as well as qualification of the institutions in urban management, is of utmost importance.

Orientation towards implementation: the starter project

As an exemplary field of learning and testing the applicability, the formulation of a starter project in low income housing has been an integral component of the research project from the onset. According to the results of the first research phase, issues such as regional integration, site selection, settlement structure, urban design and building typology, criteria of environmental quality as well as planning management and participation processes are to be tested and qualified. Following the principles of action research the starter project also initiates a mutual learning process between the Vietnamese and German partners not only in research but also in the implementation.

In close collaboration with the Vietnamese partners the starter project “Liveable Neighbourhood” is currently set up. Concentrating on housing for low income people, the starter project recognises the complex interaction of urban planning, building typologies and the socio-economic implications. Therefore, the creation of jobs and generation of income for the inhabitants is one the crucial factors of the success for the “Liveable Neighbourhood”.

In order to link the project to the existing housing policies in Vietnam, it will be carried out within the context of the new law on social housing. As a first step towards a spatial information system and better coordination, an indicator framework has been developed comprising socio-economic, environmental and spatial data. This framework will also be tested within the scope of the implementation of the starter project. Thereby, the starter project also serves as an early evaluation of instruments, procedures and planning methods. Currently, a feasibility study of an actual site in HCMC is conducted.

Outlook

In the next phase of the project, research will concentrate on deepening the knowledge basis. A survey will be conducted collecting data on the special housing needs of low income groups. New trends in state-wide housing policies, especially the recently adopted housing law with its specifications for social housing, will be examined thoroughly.

The preparations for the starter project will be continued serving as an active and visible starting point of an implementation strategy. Compiling and transferring

knowledge gained in the respective action fields, the starter project will contribute to a more comprehensive system of urban management.

Finishing the first phase of the project it becomes apparent that combining research with the parallel implementation of a starter project is extremely challenging. Yet, the Vietnamese and German research team commonly concluded, that only research with a high orientation towards application will be successful and contribute to the improvement of living conditions of the inhabitants of HCMC.

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3.8 New Towns as a Concept for the Sustainable Development of Megacity Regions – The Project “Young Cities – New Towns in Iran”

New Towns are regarded as one of the strategic answers to growing and emerging Megacities by governments and scientists in developing as well as emerging countries faced with fast population growth worldwide. The New Towns' centrally are to relieve development pressure on adjacent urban agglomerations in order to allow urban renewal or sectoral adjustments in the existing structure of the Megacity region. The New Towns strategy cannot only be seen as a separate solution to absorb the pressure of rapidly growing populations, of dramatic demographic changes and of urbanisation processes but has to be seen as a complementary strategy to allow for planning activities within overstrained structures of the Megacity region.

On the basis of the extensive international experience in the field of New Towns in different parts of the world, the project “Young Cities – New Towns in Iran” aims at analysing the well-known risks associated with the concept of New Towns and formulating as well as implementing guidelines for their sustainable development. Whether the development of New Towns should continue to be a central planning strategy for the Megacities of tomorrow at both a city and a regional scale is the central question of the project: Are New Towns an answer for the Megacities of tomorrow, a concept for the sustainable development of Megacity regions, for a well-managed and sustainable urban and regional development, and in order to manage the expansion made necessary by the growing needs of housing and industry?

Action Research: Case Study Hashtgerd New Town

According to the central question, the project has a broad, general approach in terms of its objectives. It is primarily carried out in co-operation with local, regional, and national bodies as an intervening case study in a New Town under development, looking for innovative and sustainable ways to create built environments. The case study is conducted in Hashtgerd New Town in the Islamic Republic of Iran. Hashtgerd New Town is planned as an overspill city with a projected population of 0.5 million inhabitants in 2016 for the fast emerging Megacity of Karaj, approx. 25 km to the East. Over the last two decades Karaj has been the fastest growing city in Iran and is about to develop into a joint region with the Megacity of Tehran.

The project aims at developing planning and building projects and models on a spatial, cultural and organisational level in Hashtgerd New Town and the national

realm of planning programmes. The goal is to realign these two levels. Therefore the objectives can be seen at three scales:

1. At the local and regional scale the project aims at influencing the development of Hashtgerd New Town and contributing to a sustainable development in the region of Karaj/Hashtgerd.
2. At the national scale the project seeks to achieve a transfer of experiences, concepts and tools from Hashtgerd to other of the 30 Iranian New Towns. The project endeavours the optimisation of the Iranian New Town concept and the establishment of regulations, laws and their supervision. In addition an application of vocational training concepts and participation processes for guaranteeing the quality of New Towns should be achieved and later be transferred throughout Iran.
3. At the global scale an abstraction and generalisation of scientific results for regional or even international use as a guideline for “New Towns as a strategy for the sustainable development of Megacity regions of tomorrow” is addressed.

Methodology

Concerning the methodology, the project provides a mixture of approaches: The concept constitutes an applied form of action-research, based on advisory instruments, together with methods of moderation, supervision and coaching. In the current phase of the project, there are strong elements of experimental activities in the form of realising two pilot building projects as well as one pilot planning project in Hashtgerd New Town and in Tehran. In parallel the overall project at present also accomplishes analytical research, such as evaluating experiences with existing New Towns in Iran.

Excellent co-operative links to relevant actors in Hashtgerd New Town as well as with relevant centres of knowledge, especially the Building and Housing Research Centre and the Iranian New Towns Development Corporation have been established for several years. Building on these contacts Twin Teams comprising of experts from the Iranian and the German side each have been established, covering the following strategic dimensions:

- Urban and Regional Planning
- Environmental Resources and Quality
- Qualification
- Structural Design
- Project Management

Project Design: The First Pilot Projects

In order to gain rapid working results coupled with in-depth discussion with the Iranian partners ab initio, currently research concentrates on three Pilot Projects. Implementing such planning and construction Pilot Projects helps to gain information and furthermore as instruments to test developed concepts and technologies. In later stages further Pilot Projects will be added building on the experiences of the first Pilot Projects.

High Technology Pilot Project Building

The High Technology Pilot building is currently developed and is to be constructed within the first two-year phase of the project. The two-storey building will be erected on a plot belonging to the BHRC compound and later be used as an office building of the institution. The High Technology Project is an important opportunity to show technologies, which are not commonly used in Iran. The implementation of state-of-the-art technologies should particularly improve the earthquake resistance and the energy consumption paying respect to the climatic comfort.

New Quality Pilot Project Building

The ambition is to define easily implementable structures that are capable of significantly raising the resistance against earthquakes and the durability of typical residential buildings. This is to take place in the New Quality Pilot Project as an example for a five-storey residential building in Hashtgerd New Town. Apart from the planning process, realisation on the building site will also play an important role. For this reason training measures for Iranian construction workers are to be arranged. The goal is to show how greater earthquake resistance for structures can be achieved by modifying the predominant construction method and optimising the execution of construction works in order to demonstrate the disadvantages of the predominant construction method in Iran and to give recommendations for the planning of buildings.

35 ha Pilot Project Area

A 35 ha plot located in the south of Hashtgerd New Town for the future accommodation of approximately 7.000 residents has been demarcated as a Pilot Project planning area. The planning process employs the scenario technique progressing two alternative Urban Design Scenarios building on the economic, legal and socio-cultural requirements. The consortium is elaborating a "low rise - high density" approach that seeks sustainable planning and design solutions in developing earthquake-proof, compact forms of settlement, mixed-use concepts, new flexible housing typologies and appropriate concepts of mobility and infrastructure. Moreover the project is aimed at enhancing the planning processes and related instruments in order to gain higher quality assurance and planning security. Associated urban planning topics are integrated in order to achieve an integrative and sustainable planning approach including issues such as Integrated Water Resource Management, participation and communication, Strategic Environmental Assessment and earthquake sensitive planning.

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4. Megacities - Megachallenge: Informal Dynamics of Global Change Priority Programme of the German Research Foundation, DFG

In May 2005, the Senate of the German Research Foundation (Deutsche Forschungsgemeinschaft - DFG) approved a new priority programme on "Megacities

- megachallenges: Informal dynamics of global change” (Ref. No.: 1233). Funding for the first two of a total of six years has already been granted.

Scientific background

As a recent phenomenon of worldwide urbanisation and as products of globalism, megacities are both subject to global ecological, socio-economic and political change as well as significantly contributing to it in their turn. The unprecedented dimensions of their quantitative growth, the high concentration of population, infrastructure, economic power, capital and decision-making as well as the extreme, sometimes self-reinforcing acceleration of all development processes are new, as are the simultaneity and overlapping of a wide range of processes with mutual feedbacks. Megacities are increasingly subject to an unprecedented loss of governability, with the consequence that a growing number of processes are unregulated, informal or illegal, and their forms, functions and interactions are little researched. In this context, it is the aim of the priority programme to examine the increasingly significant connection between highly complex, informal mega-urban processes and the forms and products of global change as it affects the development and reorganisation of spatial, social and institutional relations in megacities.

Aim of the programme

The major aim is to develop theoretical approaches and models which are suitable for a general explanation of informal processes and structures in megacities and which can describe them in the form of models, based on the integration of knowledge from the natural sciences and the social sciences. These aims imply

- (1) a reorientation away from the description of isolated objects and conditions and towards the analysis of complex processes,
- (2) orientation towards the interaction between different sub-processes which have been examined separately by different disciplines in the past,
- (3) orientation towards the process-oriented development of theories, models und scenarios relating to the current urbanisation phenomenon of megacities. This excludes isolated mono-disciplinary studies which merely generate case-specific or area-specific knowledge without applying this to the conditions of integrated approaches.

Processes and interactions in four problem areas with an extreme dynamism of development and major social relevance are central to this project:

- (1) The loss of planning control and governability and the influence of new forms of direction,
- (2) The dominance and differentiation of urban economies,
- (3) The complexity and dynamics of material and resource flows,
- (4) The multilayered dynamics of settlement development.

The four core themes may be examined singly or in combination; it is however absolutely essential that the research teams are multidisciplinary.

Given the highly complex nature of process dynamics in megacities, it makes sense to concentrate the research projects on two megacities. This enables intensive interaction and co-ordination between the projects and ensures high returns. The selection of the two megacities was made on the basis of the two contrasting categories "centralised" (with only partially tolerated informality) and "decentralised" (with a high degree of loss of governability and marked informality). The mega-urban

regions of Dhaka in Bangladesh and the Pearl River Delta in China (Guangzhou, Shenzhen, Hong Kong) were chosen.

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www.geographie.uni-koeln.de/megacities-spp

5. Risk Habitat Megacities: Strategies for sustainable development of megacities and urban agglomerations (Helmholtz Association Programme)

Urbanization, as a social phenomenon and physical transformation of landscapes, is one of the dramatic current global changes. For the first time, more people will live in urban centres than in rural areas by 2007. The UN estimates that about 90% of the future growth will take place in cities. Particularly in mega-urban regions and metropolises, urbanization anticipates trends with regional and global consequences that are yet difficult to predict. What risks, but also opportunities, associate with this trend towards mega-urbanisation? How can we predict and describe the transformation of the complex risk habitat megacity? What strategies are can steer the urban system towards sustainable development? What institutional and organisational preconditions must be in place for their effective implementation?

These questions are the focus of a new research initiative, in which scientists from currently five research centres within the Helmholtz Association and their partner organizations from Latin America seek to generate orientation and decision making knowledge.

The research adopts governance, risk concepts and sustainable urban development as three crosscutting research themes and integrating framework. It applies these themes to a set of megacity-typical problem areas such as socio-spatial polarization, deficits in water supply, air pollution and associated health risks, land use conflicts and energy supply. Based on an interdisciplinary analysis, the initiative aims to provide strategies for sustainable urban development by overcoming the ecological, social and economic risks of mega-urbanisation.

Geographically, the research concentrates on Latin American megacities and large agglomerations. Santiago de Chile has a central function as anchor city. With the establishment of a Centre for Sustainable Urban Development, the location will serve as a platform for coordination of research and dissemination of results.

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6. Report on the German-Myanmar Workshop

“Sustainability and Urban Developments in the Megacity of Yangon, Myanmar”

From 20-24 June 2005, a joint German-Myanmar Workshop on “Sustainability and Urban Developments in the Megacity of Yangon, Myanmar” was held at the Geography Department of Yangon University, sponsored by the Gottlieb Daimler and Karl Benz Foundation, Ladenburg/Germany. The main organizers were the Geography Departments of University of Cologne, Germany and University of Yangon, Myanmar, as well as the Institute for Technology in the Tropics, University of Applied Sciences of Cologne, Germany.

Objectives of the workshop

Based on a first Workshop with the title of “Sustainability in rural and urban environments” in University of Yangon, Myanmar (November 2003), this second German-Myanmar workshop was aiming at three major objectives:

- (1) Continuation and further deepening the cooperation and academic networks of the two countries through specifying the research questions on sustainability,
- (2) Intensification of the scientific discussion on present and future fields of mega-urban processes in Myanmar, and
- (3) Continuation of the exchange of academics from different disciplinary backgrounds, to ensure future oriented capacity building within the participating universities.

This second workshop continued the progress of the previous experiences and achievements, while focusing more on the specific sustainability of (mega-)urban questions.

Keynotes and papers presented at the workshop

Four keynotes were addressed in this Megacity Yangon Workshop.

- 1) Global urban future and key processes of mega-urbanization in the developing world: How to achieve sustainable urban development for Yangon? by Prof. Dr. Frauke Kraas,
- 2) Housing situation in the Megacity Yangon by Director General of the Department of Human Settlement and Housing Development of Myanmar, U Aung Win,
- 3) Inner-city development and strategies for sustainable urban renewal: The case of the megacity Sao Paulo/Brazil, by Prof. Dr. Martin Coy, and
- 4) Urban heritage in Yangon: Achievements and future plans by Prof. Dr. Khin Maung Nyunt.

Papers presented in this workshop had focused on four topics within the wide range of aspects in sustainability and urban developments of Yangon City:

Session 1: Urban housing in Megacities

- 1) Prof. Dr. Kyaw Lat: Urbanization Pattern in Myanmar
- 2) Günther Straub: Challenges of informal and illegal settlements, Policy and measures in the Philippine context
- 3) Daw Mi Mi Tin: New Opportunities for Housing in Yangon Megacity
- 4) Prof. Dr. Hartmut Gaese: Population Growth, Urbanization, Agricultural Production and the Need for Technology

Session 2: Water, waste and energy in Megacities

- 5) Dr. Saw Pyone Naing: Solid waste disposal of Yangon City
- 6) Dr. Thomas Krafft: A new urban penalty? Environmental and health risks in Asian megacities
- 7) Dr. Zin Nwe Myint: Woodfuel Use: A distinct phenomenon in Megacity Yangon, Myanmar
- 8) Daw Khin Kay Khaing: Water Supply in Yangon City
- 9) Prof. Dr. Jackson Roehrig: Integrated Water Resource Management

Session 3: Transition processes to market economy

- 10) Prof. Dr. Jörg Stadelbauer: Transformation and sustainability within large cities
- 11) Dr. Win Maung and U Kyin Tun: A Review of the Development of Yangon Megacity in some aspects of Infrastructure and Environment
- 12) Dr. Htein Lynn: The Informal Sector Enterprises in Capital City Yangon
- 13) U Kyaw Kyaw: Emergency preparedness within Yangon City: the case of petroleum filling stations and neighbouring residential areas
- 14) Daw Nilar Aung: Supply of vegetables for Yangon City

Session 4: Urban heritage in Megacities

- 15) Dr. Johannes Hamhaber: Urban heritage: route industriekultur – an example of coordination and marketing of industrial heritage in Germany
- 16) Simone Sandholz: Preservation of urban heritage: potential for urban development
- 17) Daw Hlaing Maw Oo: Heritage Conservation in Transforming Yangon into Sustainable Megacity

Intensive exchange and discussions were made in two parallel workshops, mainly focused on Urban Housing and Environment, and Urban Heritage, for a total of one and a half days. In the workshops all participants joined in open, vivid discussions on scientific experiences of different disciplinary backgrounds and different international experiences.

The following two days, 23rd and 24th of June 2005, were field excursion days in which the major topics of the workshop were explained in more detail directly in the field. On the first day with the title “Downtown of Yangon City”, the excursion emphasized urban heritage issues. Here, numerous buildings within the downtown area have to be seen as a great potential for a future urban heritage zone of Megacity Yangon, Myanmar, in which the local population could gain strong identity together with social coherence and economically sustainable incomes. The second day focused on the “Urban Fringe of Yangon City”, where excursion group went to the recently developed new town of Hlaing-tha-yar, opposite the Pan-Hlaing River, emphasizing new town planning concepts and measures, an urban renewal programme and different housing projects of Yangon City, as well as some insights around one of Yangon’s major industrial zones.

Benefits gained from the workshop

The workshop was for all participants very fruitful in various respect:

- Knowledge exchange and promotion of expert exchange in the respective fields
- Strengthening scientific cooperation between scientists and institutions
- Improvement of interdisciplinary cooperation and scientific networks
- International reputation effects
- Synergetic effects of interdisciplinary and international cooperation
- Capacity building in doing research and research project identification

- Proceedings of printed matters and CD Rom
- and for the young scholars: international exposure and learning on different levels

Zin Nwe Myint, Department of Geography, Yangon University, Myanmar

7. Report on the Workshop on “Vulnerability in Megacities: New Approaches to analyse the urban water system in Delhi, India”

On September 27th, 2005 a workshop took place at the International Guest House of Delhi University introducing a project funded by the German Research Foundation (DFG) on new approaches to analyse the urban water system in respect to vulnerability in Megacities. Attending the workshop were representatives from various administrative agencies like the MCD (Municipal Cooperation of Delhi) and the Delhi Jal Board as well as urban planning boards and universities, e.g. the Delhi School of Urban Planning and Architecture, the Bharati Vidgapeeth Institute of Environmental Education and Research, Pune (India), York University, Toronto (Canada), the Universities of Cologne and Munich (Germany) and Delhi University.

The current situation in respect to the water supply scenario and waste water management in Delhi, which is chosen as a case study of a fast growing city in an even faster growing economy, was highlighted by the local participants. Furthermore basic ideas on the theoretical background of vulnerability as well as new methodological approaches referring particularly to urban remote sensing were introduced and discussed.

Responsible research partners: Department of Geography, University of Cologne, Department of Earth and Environmental Sciences, Section Geography and Remote Sensing, University of Munich, Department of Geography, Delhi School of Economics
Veronika Selbach

8. World Urban Forum in Vancouver/Canada, 19-23 June 2006

The World Urban Forum was established by the United Nations to examine one of the most pressing issues facing the world today: rapid urbanisation and its impact on communities, cities, economies and policies. It is projected that in the next fifty years, two-thirds of humanity will be living in towns and cities. A major challenge is to minimize burgeoning poverty in cities, improve the urban poor's access to basic facilities such as shelter, clean water and sanitation and achieve environment-friendly, sustainable urban growth and development.

The World Urban Forum is a biennial gathering that is attended by a wide range of partners, from non-governmental organisations, community-based organisations, urban professionals, academics, to governments, local authorities and national and international associations of local governments. It gives all these actors a common platform to discuss urban issues in formal and informal ways and come up with action-oriented proposals to create sustainable cities.

The third session of the World Urban Forum (WUFIII) will be hosted by the Government of Canada. It will take place in Vancouver, Canada, from 19 to 23 June 2006 and have as its main theme, Our Future: Sustainable Cities – Turning Ideas into Action.

The number of people attending the World Urban Forum has risen sharply from 1,200 at the first World Urban Forum in Nairobi in 2002, to 4,400 at the second World Urban Forum in Barcelona in 2004. The Forum is successful because it differs from UN governing bodies. Since it is not legislative and does not follow the formal rules of procedure that usually govern official UN meetings, the working arrangements of the Forum are kept deliberately simple and relatively informal to generate a healthy and inclusive debate on urban issues. Participation is extremely open to allow effective dialogue between all actors working on urban issues.

Webpage for detailed programme and information:
<http://www.unchs.org/wuf/2006/introduction2005.asp>

9. International Geographical Union: Regional Conference in Brisbane/Australia: Sessions of the MegaCity TaskForce

The next big IGU event will be the forthcoming Regional Conference "Regional Responses to Global Changes. A View from the Antipodes" in Brisbane/Australia from 3-7 July 2006. (please refer to the conference site at <http://www.igu2006.org/>). Two sessions will be reserved for megacity-related themes and topics and we cordially invite all those interested to join these meetings on Thursday, 6 July 2006. See you in Brisbane!

10. Upgrade WebPage

The Task Force's website is at <http://www.megacities.uni-koeln.de/>. Here you can find information on the following items: Aims, News, Events, Research, Documentation, Internet Resources, About the Task Force.

The website has been continuously upgraded since its inception in 2001: The initial version of the website included 28 megacities with more than 8 Mio. inhabitants. For its realization 32 colleagues were asked to contribute information and material on single megacities. The new version shows documents of 11 further megacities with more than 5 Mio. inhabitants (figures according to the UN World Urbanization Prospects, 2001 revision): Bogotá, Chennai, Chicago, Hong Kong, Hyderabad, Kinshasa, Lahore, London, Rhine-Ruhr North, Santiago de Chile, Wuhan, thus giving a total of 39 megacities with more than 5 mio. inhabitants. Furthermore, large numbers of publications, weblinks, maps, photographs and statistics have been added to the documentation.

Some statistics: Since 17th August 2001 until now the website has been contacted by more than 425,000 users. In 2001: 1,156, 2002: 3,247, 2003: 32,298, 2004: 137,747, 2005: 177,500 and in 2006 until today: 69,531. Maximum access lies between 300 and 430 users per day several times, the majority (ca. 40%) from Europe, ca. 32% from North America, ca. 17% from Asia, ca. 4% from Australia, ca. 4% from South and Middle America, ca. 1% from Africa, the rest from unknown sources.

11. Request for Cooperation

We would like to invite you to cooperate with the TaskForce by

- sending us details about various activities, like conferences, call for papers, etc. to be disseminated on the homepage under 'events';
- sending us details on ongoing or new projects and research initiatives (to be included under 'research');
- informing us on recent publications (quoted in the same way as on the web under 'documentation' and 'publications');
- sending us material on individual megacities, such as maps, statistics, www-links for inclusion into the webpage under 'documentation'.

The aim is to provide a website that is both informative and topical and reflects the state of the art of megacity research.

Finally, please let us know whether you are interested in being kept in our Megacities mailing list. Any feedback from you - be it in connection with research projects, news on relevant meetings and activities, the Newsletter, or other matters - will be highly appreciated! Please contact either Frauke Kraas (f.kraas@uni-koeln.de) or Ursula Dörken (u.doerken@uni-koeln.de), who is responsible for the secretariat in Cologne.

We take this opportunity to thank you for your interest in our activities and wish you a good summer!

Frauke Kraas

Günter Mertins

Ursula Dörken