

# Risk Habitat Megacity

¿Sostenibilidad en Riesgo?

**A Helmholtz Research Initiative 2007-2013**

**Report of the First Annual Status Conference in  
Santiago de Chile (June 2–5, 2008)**

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## **Preface**

This report documents the first annual status conference of the “Risk Habitat Megacity” research initiative, which was launched in July 2007 for a period of three years with funding support from the *Helmholtz Initiative and Networking Fund*. Over four days, the conference brought together almost 100 researchers and stakeholders to share experience, assess progress and identify common next steps in a range of thematic activities.

The report is intended to serve as the common reference point for the work of the research partners, joint activities, the steering of the initiative and as a source of information for other bodies such as the Scientific Advisory Board of the initiative. The report, in a first section, summarizes key features of the project and the objectives of the status conference. In a second section, it documents the main activities during the conference with a summary of final conclusions and next steps for each activity. In a third section, it informs about other achievements and activities that did not form part of the conference but play an important role in “Risk Habitat Megacity”.

The documentation is based on the presentations (available on the database server of the initiative) and discussions during status conference, post-conference reports of PhD and topic speakers and minutes of Chilean-German Coordination Committee Meeting<sup>1</sup>, which followed the conference on June 06, 2008.

### **1. Background: The “Risk Habitat Megacity” research initiative and the main objectives of the status conference**

#### ***Brief history and concept of the “Risk Habitat Megacity” research initiative***

The “Risk Habitat Megacity” (RHM) research initiative reflects the joint work of about sixty natural and social scientists and engineers from five research centres of the *German Helmholtz Association* – the *German Aerospace Centre* (DLR), the *Forschungszentrum Karlsruhe* (FZK), the *Helmholtz Centre for Infection Research* (HZI), the *German Research Centre for Geosciences* (GFZ), and the *Helmholtz Centre for Environmental Research – UFZ*, and five partner organizations in Latin America – *Universidad de Chile* (UCH), *Pontificia Universidad Católica de Chile* (PUC), *Pontificia Universidad Católica de Valparaíso* (PUCV), *Universidad Alberto Hurtado* (UAH) and the *Economic Commission for Latin America and the Caribbean* (ECLAC/CEPAL) in the United Nations.

The programme of the research initiative has been developed by the partners in several steps from an initial concept proposal in 2005 to a full research plan by January 2007. The plan was evaluated by an international panel in March 2007 and the project was officially launched in July 2007 for a period of three years, with funding support from the *Helmholtz Initiative and Networking Fund*. The research initiative seeks answers to several **core questions**:

- What risks, or indeed opportunities, are associated with mega-urbanization?
- How can the transformation of the complex “Risk Habitat Megacity” be predicted and described?
- What specific strategies and policies can steer the urban system towards a more sustainable development?

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<sup>1</sup> The Committee consists of six members: three from the Chilean and three from the German research partners. Participants in the meeting on June 6 were: Claudia Rodriguez Seeger (PUC), Joseluis Samaniego (CEPAL), Francisco Martinez (UCH), Helmut Lehn (FZK), Sigrun Kabisch (UFZ), Kerstin Krellenberg/Dirk Heinrichs (UFZ, coordination), and Axel Borsdorf (UIBK) as representative and speaker of the Scientific Advisory Board

- What institutional and organizational preconditions are required for their effective implementation?

The **geographic focus** of the research initiative is on Latin America. Santiago de Chile is the “anchor city” for the initiative where the partners aim to establish a “research and training platform” for megacities, which will connect “Risk Habitat Megacity” with the existing relevant programmes of the partners. For the implementation phase from 2007–2010, the metropolitan region of Santiago de Chile is also the pilot case. The initiative intends to transfer the interdisciplinary and integrative research framework to other Latin American megacities in a second phase (2010-2013).

The research plan adopts an **interdisciplinary and integrative research approach** that combines basic theoretical and conceptual considerations with empirical and application-oriented analysis. To implement the research approach and to offer a common framework for orientation, the research initiative applies **three well-established, theory-based analytical concepts**. The concept of *Sustainable Development* formulates the target dimension of the initiative and provides orientation towards basic goals by defining specific sustainability criteria in close cooperation between the Chilean and German partners. The *Risk* concept focuses on the extent of the problems and their severity. In addition, it helps to identify and analyse the conditions for and impacts of the emergence of risks that pose a potential threat to future sustainability. For this purpose an appropriate combination of natural, applied and social scientific risk research approaches is being developed to the perspectives of hazardous events and the vulnerability of the “System” Megacity. The *Governance* concept concentrates on the *actions* to be undertaken. This will be achieved by analysis of current efforts to enhance sustainability in megacities, and by the provision of knowledge and recommendations relevant to the appropriate solutions to specific problems and their potential for implementation. Local political and administrative authorities are involved in the process of working out targets for sustainable urban development and of proposing appropriate ways to meet them.

The initiative applies these three research topics, the “**Cross-Cutting Concepts**” (CCC), to **several typical megacity issues**, such as *Land - use management, Socio-spatial differentiation, Energy system, Transportation, Air quality and health, Water resources and services, and Waste management*, which are the seven “**Fields of Application**” (FoA).

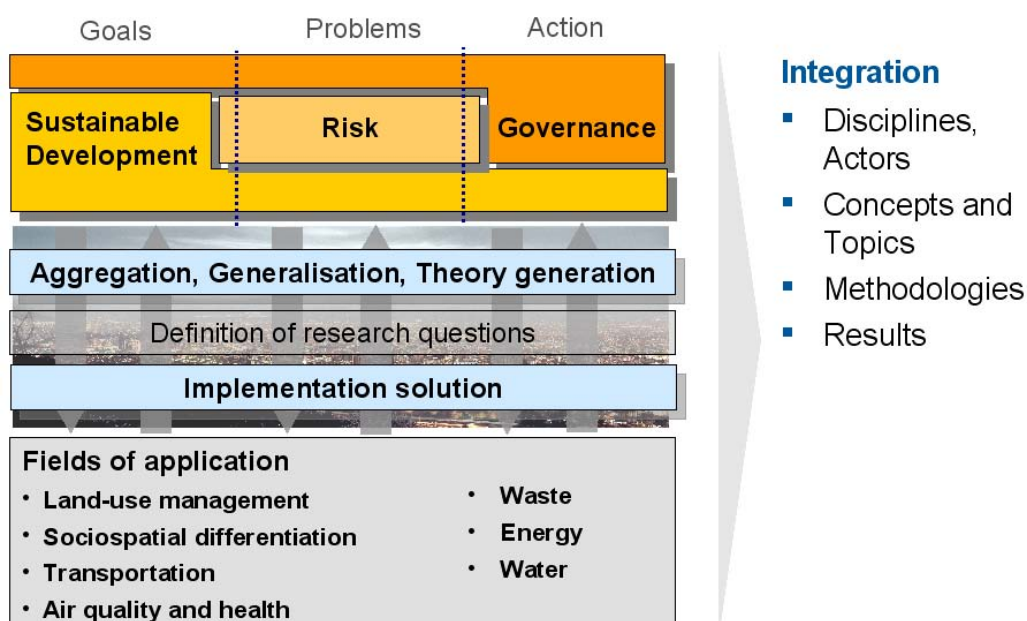


Figure 1: Research concept

The implementation of the programme includes annual status conferences as an important tool to share and integrate results of the various topics, to provide an interdisciplinary venue for the involved young researchers (PhD), and to exchange with stakeholders in Santiago de Chile. From an early stage of implementation, the research partners encourage the participation of research communities (including young researchers) and policy-makers from other megacities in the region. Thus, these conferences play a significant role in enabling interested partners to join the process, to cooperate in developing the concept, and to identify the cases for investigation in phase two.

### ***Main objectives of the first status conference***

The first annual status conference of the “Risk Habitat Megacity” research initiative from June 2-5 2008 had the objective to bring together the initial knowledge generated on the pilot case metropolitan area Santiago de Chile, to construct some interdisciplinary insights on the problems and issues targeted in the different topics including work on indicators and scenarios. It likewise intended to serve as a forum for exchange across and between participants and to involve potential adopters from other megacities (**Annex 1: Conference Programme**). The programme of the status conference included:

- a plenary session with presentations and discussions of research work in progress,
- a “regional” dialogue with research partners from Latin American countries,
- a dialogue with stakeholders from Santiago de Chile and
- a ‘winter school’, a colloquium and a poster session for the almost 20 PhD students involved in the initiative,

The majority of the Chilean-German consortium members from the five incorporated research centres of the *Helmholtz Association* in Germany and from the involved universities in Chile participated. Including the seventeen currently involved PhD students, further associated research partners from Santiago de Chile, six colleagues from other large agglomerations in Latin America and local stakeholders, the number of conference participants reached almost 100 (**Annex 2: List of Participants**).

## **2. Documentation of the activities and results**

### ***Status analysis (June 2, 2008)***

The status analysis comprised presentations and discussion of all research topics (the three Cross-cutting Concepts and the seven Fields of Application). All presentations followed a common set of questions:

1. What are the main research questions?
2. What are the explicitly considered linkages to other FoA and CCCs?
3. What are the first research results with respect to main problems/challenges?
4. What are next activities, also in cooperation with other themes and what open questions will be tackled?

A summary of the individual presentations and outputs are documented in **Annex 3: Documentation of topics**. In general, the session showed:

- a visible progress in all topics with reference to the content of the status analysis (description of problems etc.),
- a start in all Fields of Application to develop topic specific indicator sets, whereby the majority of teams has started to involve stakeholders,
- a success in the integration of PhD work in all topics

- the identification of a range of concrete research areas and interests for joint research between the teams of different Fields of Application and between Fields of Application and the Cross-Cutting Concepts,
- encouraging results with respect to the development of joint scenarios, in particular regarding the development of the approach and its (exemplary) application to the Energy Field of Application and the identification of 'driving factors'
- a documentation of work in the form of working papers and first publications (**Annex 6: Publications, Presentations at conferences, Working papers**)

The discussion on the CCC *Risk* brought up critical questions regarding overall adequacy of the conceptual approach for the applied oriented nature of the initiative and its applicability to the work in the FoA. These questions could not be resolved and remain open. The issue was taken up in the meeting of the Chilean-German coordination committee (June 6), where the participants reached a clear consensus that measures are required to improve the relevance of the risk concept. More generally, there is a demand to share more conceptual information and to better integrate the CCCs and the FoA and, in this process, intensify the involvement of the Chilean partners. Two further points were made in the discussion. First, in favour of a common perspective, different views on segregation should be resolved. Second, while acknowledging the effort of one PhD candidate on economic equilibrium modelling, economic aspects should be made more prominent.

#### Conclusion and next steps:

- a. With regards to the progress of individual topics (CCCs and FoA)
  - Take measures to improve the relevance of the *Risk concept* and its connection to the FoA, and to improve the dialogue and exchange on the *Risk concept* and
  - Make role of economics more prominent.
- b. With regards to cooperation across fields and partners
  - Establish a more frequent discussion/exchange between the involved colleagues in Chile;
  - Share more conceptual information from the CCCs with the teams of the FoA;
  - Resolve the existing differences in the views of segregation and develop a common perspective;
  - Intensify opportunities to enhance benefits of cooperation for the Chilean partners (exchange activities etc.) and
  - Make better use of the CEPAL to make the initiative better known.

#### ***Dialogue with local stakeholders (June 3 and 5 June 2008)***

The objective of the session with stakeholders (policy makers) was to clarify the opportunities and potential steps for cooperation between the research initiative and those key policy makers interested to collaborate in the transfer of vital parts of the overall concept into political practice and decision making. This relates primarily to the following aspects:

- Definition of problems to be the focus of research;
- Development of an overall sustainable development strategy for the metropolitan region of Santiago de Chile;
- Selection of sustainable development indicators and
- Explorative framework scenarios on potential alternative futures, measures and targets.

This has to be seen in addition to the activities taken by all topic teams to involve stakeholders (including those from civil society) in their concrete works. For that purpose, some of the teams conducted additional thematic workshops in connection with the status conference.

The dialogue session during the status conference started with a general introduction of the research project and an identification of areas for collaboration. This was followed by an illustration on the idea of linking the conceptual frame and concrete “problem fields” (using the example of **Sustainable Development** and **Air quality**). A third aspect covered the topic **Scenarios** in „Risk Habitat Megacity“ on the conceptual approach, current status of work and next steps.

Stakeholder presentations came from **Jéssica Mualim Fajuri** (Mayor of María Pinto and President of the Comisión de Medio Ambiente ACHM). She pointed out the strong importance of environmental education for improving sustainability. She emphasized that in Chile there exist a multiplicity of studies, diagnosis and indicators that in their majority are not known by or generally understandable for stakeholders, and for this reason not considered in decision making.

**Ana Maria Silva**, representing the regional government (GORE) presented the functions of GORE and its intention to develop a regional strategy for Santiago (2008–2010), which coincides to a large extent to the topics addressed by the research initiative. With reference to the cooperation with the “Risk Habitat Megacity” research initiative, she emphasized that the role of GORE will be to ensure that policy advice coming from the topics will be applicable, relevant and viable.

To do so, a strong role of GORE will be to participate in the formulation of the specific variables/indicators selected for research. The biggest challenge for GORE will be to translate the results of the initiative into objectives, action and concrete measures. Here, the joint development of scenarios will be an important decision support tool. In general, the regional government has a great interest to utilize the research to become a more prominent actor in the decision-making process in the metropolitan region.

The subsequent **discussion** with the local stakeholders generated some valuable insights.

- First, there is a significant interest by the political stakeholders in integrating the scientific work of the research initiative into policy. To avoid the weaknesses of past experience, an intensive cooperation at the overall ‘strategic’ level of the initiative with some key stakeholders is required. At the same time, interaction at the individual topic level is necessary to involve a wider range of stakeholders on specific and particular issues.
- Second, coordination across organizations (horizontally) and levels (vertically) in Santiago is extremely complex and the participating stakeholders unanimously expressed their dissatisfaction with this situation. This complexity will be one of the major challenges to the analysis of governance processes in the research initiative.
- Third, an important instrument for potentially generating sectoral and stakeholder integration could be the Intermunicipal Regulatory Plan (Plan Regulador Intercommunal), which is under the responsibility of GORE. However, as an indicative spatial plan, it does i.e. not include infrastructure sectors.
- Fourth, the work and results of the initiative (to be of relevance for stakeholders) need to be developed with a clear implementation perspective and in a comprehensible way.





*Signing of the Memorandum of Understanding of the Research Consortium and the Regional Government, from left to right: José Rosas (PUC), Bernd Hansjürgens (UFZ), Ernesto Ottone (CEPAL) Alvaro Erazo Latorre (GORE), Joseluis Samaniego (CEPAL), Kerstin Krellenberg (UFZ), Claudia Rodriuez Seeger (PUC), Axel Borsdorf (UIBK), Dirk Heinrichs (UFZ)*

As part of the exchange activities, GORE and UFZ (representing the Helmholtz Consortium) signed a Memorandum of Understanding as the framework for cooperation in the initiative.

Conclusion and next steps:

- Clarify and specify the fields of cooperation and the timeframes with GORE;
- Involve other stakeholders at the strategic level of the initiative in cooperation with GORE and
- Continue/further intensify exchange with stakeholders at individual topic level.

### ***Dialogue on expansion strategy (June 3, 2008)***

The initiative intends to transfer the interdisciplinary and integrative research framework to other Latin American megacities in a second phase (2010–2013) to generate knowledge and to generalize findings from Santiago, to transfer the conceptual approach from Santiago de Chile to one (or two) other cities, to use the opportunities for learning from each other (joint reflection on system understanding) and to expand research networks.

To explore and discuss basic potentials and constraints for such a transfer, colleagues from **four Latin American megacities** were invited for a dialogue on possible investigation research. Six colleagues from Buenos Aires, Bogotá, Lima and Mexico followed the invitation and participated in the activities of the status conference (**Annex 4: Dialogue partners from other cities in Latin America**). They presented their home city following a set of questions which were sent to them in advance:

1. Which fields of application covered by the research initiative do you think are the most relevant and which ones should be added?
2. How would the initiative help/benefit your own research work?
3. Which topics could you work on in your own working group and/or your wider partner network? Which organizations would you possibly involve?
4. Which topics are particularly policy-relevant and acted upon by current policy-making? Which stakeholder is leading/taking initiatives?

5. Which opportunities do you see for transferring the concept of the “Risk Habitat Megacity” research initiative?
6. Which obstacles could you imagine for implementing the concept?

The presentations and discussion confirmed the relevance of the Helmholtz concept; all invited colleagues stressed the integrative and comprehensive approach as very adequate. The Chilean-German Coordination Committee, in its subsequent meeting on June 6 came to the conclusion that from all cases Bogotá is most promising. Lima is a very interesting case because of the dynamic changes, but further clarity is needed regarding the research conditions (infrastructure, data availability etc.). With regards to Mexico, the integrative and interdisciplinary approach is new and innovative but there are doubts regarding the possibilities to integrate expertise into a comprehensive approach. There is no clear common perspective on Buenos Aires.

The next tasks will be to clarify the overall goals of the expansion; the strategy itself and the underlying criteria (build on differences or similarities, geographic focus?), taking into account the overall question: What will be the products of expansion phase? A consensus emerged in favour of transferring the entire concept (with a range of Fields of Application) instead of partial transfer. Furthermore, participants stressed the importance to use the expansion strategy to build a wider network of researchers and decision makers in Latin America.

During the next months the initiative will work on deepening the cooperation with the colleagues and several follow-up activities are confirmed. The first occasion will be the scientific convention “Bogotá-Berlin–Beijing: Challenges and Solutions for Megacities” in Bogotá, in which Helmholtz acts as Co-organizers. Several members of the consortium will travel to Bogotá, and will take the opportunity for a complementary workshop with scientific colleagues on the idea of transferring the RHM concept and on concrete potentials for cooperation. The partners will take similar opportunities for follow-up activities in Buenos Aires, Mexico and Lima, for example in connection with the currently strong effort by the German Ministry for Education and Research (BMBF) in creating these opportunities. There is the need for discussion how to involve Sao Paulo in the expansion activities. A number of contacts do exist that could be built upon.

Conclusions and next steps:

- Preference for transferring the entire concept (including FoA);
- Clarify overall goals, strategy, underlying criteria and expected outputs of the expansion phase and
- Make strong effort to build a network of researchers and decision makers in Latin America.

***Promotion of young researchers***

***PhD winter school (May 27/28) and PhD colloquium (June 5, 2008)***

The training of young scientists is one of the characteristic features of the initiative. Seventeen young researchers (seven German and ten Chilean) have already started their PhD thesis as part of the initiative. An overview of all involved students and their topics is given in **Annex 5: PhD in “Risk Habitat Megacity” and their topics**. Beside their individual supervision all of them have the opportunity to participate in interdisciplinary training and education activities comprised by the Chilean and German research partners.

A two-day PhD winter school preceded the conference. Its objective was to bring together all young researchers for a first time, to give them the chance for social interaction, present and discuss their PhD projects, as well as to learn about the interdisciplinary approach of the initiative. A feedback from the participating PhD after the winter school showed its substantial benefits in several aspects: sense of belonging to the network of researchers in the initiative, knowledge on the scope and concept, the opportunity to develop experience in intercultural skills, learning about other disciplines and the chance to receive positive feedback from the other studies being carried out in the project context. A critical comment related to the fact that the interdisciplinary nature of the project might interfere with or obscure disciplinary work.



*Participants of the PhD winter school*

With this experience and preparation at hand, the PhD students participated in the first Status Conference and presented their own work during the PhD colloquium to the senior scientists. As had been agreed prior to the conference all students made a strong effort to present in english. The assessment of the PhD on the utility of the interaction with the senior researchers produced a mixed result: *“Basically, the main comments and suggestions that foster the improvement of my work were not given during the conference”, “It has been very useful, to understand in a better way how is my work related with the three transversal concepts”, “The simple but so important suggestion for me was that it is very important to establish a strong connection between the scientific results and the level of decision-making”, “It is a pity that not all the supervisors of the other PhD students seem to be interested in the project. There should be some interaction to strengthen the collaboration”, “Generally, I’m very glad with the comments/suggestions regarding my presentation. Nevertheless, I missed some more instances to discuss my topic in more detail with the senior scientist” and “A great challenge was the discussion with the RHM scientists on the conference, who gave me hints and recommendations for my next working steps of my theoretical framework, by seeing the topic out of their perspective. For the status-conference in 2009 I think that a longer discussion would be very helpful to discuss the first results”.*

The PhD students also had the opportunity to present and discuss their work during a poster session. This session was inaugurated by **Fernando Pérez**, the Head of the PhD programme at the *Facultad de Arquitectura, Diseño y Estudios Urbanos, Pontificia Universidad Católica de Chile*.

#### Conclusions and next steps:

- Effort is needed to focus the work of several students towards the RHM objectives, in particular: V. Ruguiero, G. Azócar, A. Perez, C. Godoy;
- All PhD need to attend the basic activities organised by the project (young researchers workshop, presentations during status conference);
- Improve english communication capacities on the side of Chilean PhD;
- PhD require additional general education/guidance (Prof. Axel Borsdorf offers assistanc during his stay in September 2008);
- Continue/strengthen efforts on close individual supervision and common activities (should follow the model of regular PhD meetings at the IEU+T, PUC) and
- The supervisors should support the PhD actively in the pursuit of possibilities to spend some time in Germany/Chile.

### 3. Other achievements/activities

Although not an explicitly part of the conference, data management plays a prominent role in the research initiative. There is a substantial demand on data management in the project, in particular, to ensure accessibility to a large variety of data and data formats, to organize and document this data in a standardized and consistent manner, to ensure efficient data exchange between all project partners, to avoid duplication and to ensure integrity of data sets, that can be made accessible at low/no cost.

To meet this demand, the consortium introduced *GeoNetwork*, a standardized and decentralized web-based spatial information management tool. Originally developed by the *Food and Agriculture Organization* of the United Nations (FAO), the opensource software is now operated by a larger network of users and developers<sup>2</sup>.

*GeoNetwork* is designed to enable access to datasets, maps, documents and related metadata from a variety of sources using the capacities of the internet. Each data set uploaded in *GeoNetwork* is associated with metadata in line with metadata standards (ISO 19115, Dublin Core Metadata Initiative), containing information such as title, type of data, abstract, date of creation, contact person and creator of the data. Spatial information and access restrictions can be defined where applicable. Between October 2007 and June 2008, following activities were conducted:

- Set up of a central data server at the UFZ in Leipzig;
- Adaptation of the GeoNetwork environment to the specified needs of the initiative;
- Upload of existing project data;
- Development of training material including a user manual;
- Assigning two responsible contact persons per topic (one person at the Chilean and one at the German side) with functions as topic “data managers”;
- Training of “data managers” for the database use in Leipzig, Garmisch-Partenkirchen and in Santiago de Chile and
- Development of a secrecy commitment for confidential and use-restricted information and data signed by all involved partners as a condition for getting access to the database (login).

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<sup>2</sup> FAO, WFP, United Nations Environment Programme (UNEP), WHO, UN Office for the Coordination of Humanitarian Affairs (OCHA) und Consultative Group on International Agricultural Research (CGIAR)

The system is accessible via the project website [www.risk-habitat-megacity.ufz.de](http://www.risk-habitat-megacity.ufz.de). So far, the majority of topic teams are not yet using the database and in some topics, the process of determining data managers is not yet completed (in particular in Chile). One reason is that key data (e.g. census and remote sensing data) have not yet been uploaded, partly because use and access rights are still in process of clarification with the data owners.

Conclusions and next steps:

- Make all involved researchers sign the secrecy commitment and create login accounts for all participants to get access to the database;
- Implement a remote access to other servers to enable the search for relevant data in external databases of other international organisations like the FAO or UNEP and
- Set up a mapserver connected to *GeoNetwork* to allow the visualisation of vector and raster data in a mapviewer. The mapserver allows quick data preview with zoom functions of one or more datasets at the time. Another option is that maps can be created and downloaded online without using additional software

## 4. Appendices

### Annex 1: Conference Programme (June 2-5 2008)

<b>Monday, 02 June 2008</b>	
Status analysis: Presentation and discussion of first research results	
<b>Location</b> Universidad de Chile, Facultad de Ciencias Físicas y Matemáticas (FCFM), Departamento de Geología, Room 108, Plaza Ercilla 803 (con Blanco Encalada), Santiago	
<b>09.00 – 09.30</b>	<b>Opening</b>
	<b>Welcome</b> <i>Francisco Brieva, Dean Facultad de Ciencias Físicas y Matemáticas</i>
	<b>Introduction note</b> <i>Bernd Hansjürgens</i>
<b>09.30 – 10.40</b>	<b>Session I: Fields of Application</b> <i>Moderation Francisco Martínez</i>
	<b>Energy System</b> <i>Luis Vargas + Sonja Simon</i>
	<b>Air quality and health</b> <i>Rainer Schmitz + Peter Suppan</i>
<i>10.40 – 11.10</i>	<i>Coffee Break</i>
<b>11.10 – 13.00</b>	<b>Session II: Fields of Application</b> <i>Moderation Bernd Hansjürgens</i>
	<b>Transportation</b> <i>Francisco Martinez, Christian Cortés + Barbara Lenz</i>
	<b>Land - use management</b> <i>Sonia Reyes + Ulrike Weiland</i>
	<b>Social-spatial differentiation</b> <i>Francisco Sabatini + Sigrun Kabisch</i>
<i>13.00 – 14.00</i>	<i>Lunch</i>
<b>14.00 – 15.10</b>	<b>Session III: Fields of Application</b> <i>Moderation Dirk Heinrichs</i>
	<b>Waste management</b> <i>Marcel Szanto + Helmut Seifert</i>
	<b>Water resources and services</b> <i>James McPhee + Helmut Lehn</i>
<i>15.10 – 15.45</i>	<i>Coffee Break</i>
<b>15.45 – 17.30</b>	<b>Session IV: Cross-Cutting Concepts</b> <i>Moderation Heidi Wittmer</i>
	<b>Sustainable Development</b> <i>Jonathan Barton + Jürgen Kopfmüller</i>
	<b>Risk</b> <i>Aldo Mascareño + Christian Büscher</i>
	<b>Governance</b> <i>Claudia Rodriguez + Henning Nuissl</i>
<b>17.30 – 18.00</b>	<b>Conclusions</b> <i>Bernd Hansjürgens/Dirk Heinrichs/Kerstin Krellenberg</i>
<i>afterwards</i>	<i>Light Meal/Snack at the Universidad de Chile (courtesy of UCH)</i>

<b>Tuesday, 03 June 2008 (morning session)</b>	
Dialogue with stakeholders	
<b>Location</b> Comisión Económica para América Latina (CEPAL), Av. Dag Hammarskjöld 3477, Vitacura, Santiago	
<b>09.00 – 09.35</b>	<b>Opening</b>
	<b>Welcome</b> <i>Joseluis Samaniego</i>
	<b>Introduction note</b> <i>Dirk Heinrichs/Kerstin Krellenberg</i>
<b>09.35 – 10.40</b>	<b>Project presentations</b> <i>Moderation Heidi Wittmer</i>
	<b>Case example</b> <i>Jonathan Barton</i>
	<b>Scenarios</b> <i>Luis Vargas</i>
	<b>Questions and Discussion</b>
<i>10.40 – 11.00</i>	<i>Coffee Break</i>
<b>11.00 – 13.00</b>	<b>Statements of local stakeholders</b> <i>Moderation Joseluis Samaniego</i>
	<b>Regional Government (GORE)</b> <i>Ana María Silva</i>
	<b>Round table discussion</b> <i>Jessica Mualim, Bettina Horst, Alberto Carvacho</i>
<i>13.00 – 14.00</i>	<i>Lunch</i>

<b>Tuesday, 03 June 2008 (afternoon session)</b>	
expansion strategy	
<b>Location</b> Comisión Económica para América Latina (CEPAL), Av. Dag Hammarskjöld 3477, Vitacura, Santiago	
<b>14.00 – 14.30</b>	<b>Opening</b>
	<b>Welcome</b> <i>Bernd Hansjürgens</i>
	<b>Introduction of participants from Bogotá, Buenos Aires, Lima and Mexico</b> <i>Dirk Heinrichs/Kerstin Krellenberg</i>
<b>14.30 – 15.00</b>	<b>Presentation of the expansion strategy</b> <i>Dirk Heinrichs/Kerstin Krellenberg/Francisco Martínez</i>
<b>15.00 – 15.30</b>	<b>Presentation of the CEPAL Panorama</b> <i>Jeannette Plaut/Ricardo Jordán</i>
<i>15.30 – 16.00</i>	<i>Coffee Break</i>
<b>16.00 – 18.00</b>	<b>Statements on expansion strategy</b> <i>Moderation Ricardo Jordán</i>
	<b>Claudia Dangond</b> <i>Pontificia Universidad Javeriana, Bogotá</i> <b>Victor Cantillo</b> <i>Universidad del Norte de Colombia, Bogotá</i> <b>David Kullock</b> <i>Universidad de Buenos Aires, Buenos Aires</i> <b>Wiley Ludeña</b> <i>Universidad Ricardo Palma, Lima</i> <b>Oscar Sanchez</b> <i>Universidad Autónoma del Estado de México, México</i> <b>Luis Gerardo Ruiz Suárez</b> <i>Universidad Autónoma del Estado de México, México</i>

<b>Wednesday, 04 June 2008</b>	
Excursions - registration during conference required -	
<b>Location</b> Departure from the Eurotel, Guardia Vieja 285, Providencia, Santiago	
<b>09.00 – 13.00</b>	<b>Excursion</b>
	<b>Bus tour to Peñalolén (several points of interest) Sonia Reyes</b>
13.00 – 14.00	Lunch
afterwards	Thematic Excursions (to be announced during the conference)

<b>Thursday, 05 June 2008 (morning session)</b>	
World Environment Day and “Risk Habitat Megacity”	
<b>Location</b> Comisión Económica para América Latina (CEPAL), Av. Dag Hammarskjöld 3477, Vitacura, Santiago	
<b>09.00 – 10.30</b>	<b>Celebration Ceremony</b>
	<b>Ernesto Ottone</b> , Assistant Executive Director, Economic Commission for Latin America and the Caribbean
	<b>Alvaro Erazo Latorre</b> Intendente de Santiago
	<b>José Rosas</b> , Dean Faculty of Architecture and Urban Studies, Pontificia Universidad Católica de Chile
	<b>Bernd Hansjürgens</b> Speaker of the “Risk Habitat Megacity” research initiative
	<b>Signing of the MOU GORE – “Risk Habitat Megacity”</b>
10.30 – 11.00	Coffee Break



<b>Thursday, 05 June 2008 (morning/afternoon session)</b>																	
Doctoral Colloquium, Presentation and discussion of PhD topics, Poster session																	
<b>Location</b> Comisión Económica para América Latina (CEPAL), Av. Dag Hammarskjöld 3477, Vitacura, Santiago																	
<b>11.00 – 11.15</b>	<b>Opening Colloquium</b> <i>José Rosas, Dean Facultad de Arquitectura, Diseño y Estudios Urbanos, Pontificia Universidad Católica de Chile</i>																
<b>11.15 – 13.30</b>	<table border="1"> <thead> <tr> <th><b>Session I</b></th> <th><b>Session II</b></th> </tr> </thead> <tbody> <tr> <td><i>Moderation Jonathan Barton</i></td> <td><i>Moderation Volker Stelzer</i></td> </tr> <tr> <td><b>Governance</b> <i>Carolin Schulz</i></td> <td><b>Socio-spatial differentiation</b> <i>Juliane Welz</i></td> </tr> <tr> <td><b>Governance</b> <i>Michael Lukas</i></td> <td><b>Socio-spatial differentiation</b> <i>Alejandra Rasse</i></td> </tr> <tr> <td><b>Governance</b> <i>Gustavo Durán</i></td> <td><b>Waste management</b> <i>Tahnee Gonzalez</i></td> </tr> <tr> <td><b>Transportation</b> <i>Andreas Justen</i></td> <td><b>Sustainable Development</b> <i>Jaques Clerc</i></td> </tr> <tr> <td><b>Risk</b> <i>Gabriela Azócar</i></td> <td><b>Water resources and services</b> <i>Christian Godoy</i></td> </tr> <tr> <td><b>Discussion</b></td> <td><b>Discussion</b></td> </tr> </tbody> </table>	<b>Session I</b>	<b>Session II</b>	<i>Moderation Jonathan Barton</i>	<i>Moderation Volker Stelzer</i>	<b>Governance</b> <i>Carolin Schulz</i>	<b>Socio-spatial differentiation</b> <i>Juliane Welz</i>	<b>Governance</b> <i>Michael Lukas</i>	<b>Socio-spatial differentiation</b> <i>Alejandra Rasse</i>	<b>Governance</b> <i>Gustavo Durán</i>	<b>Waste management</b> <i>Tahnee Gonzalez</i>	<b>Transportation</b> <i>Andreas Justen</i>	<b>Sustainable Development</b> <i>Jaques Clerc</i>	<b>Risk</b> <i>Gabriela Azócar</i>	<b>Water resources and services</b> <i>Christian Godoy</i>	<b>Discussion</b>	<b>Discussion</b>
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<b>16.00 - 16.30</b>	<i>Coffee Break</i>																
<b>16.30 – 16.45</b>	<b>Opening Poster Sessions</b> <i>Fernando Pérez, Head PhD programme, Facultad de Arquitectura, Diseño y Estudios Urbanos, Pontificia Universidad Católica de Chile</i>																
<b>16.45 – 18.30</b>	<b>Poster Session</b>																
<b>21.00</b>	<i>Conference dinner at 'Bali-Hai', Avenida Christóbal Colón # 5146, Las Condes (courtesy of the Helmholtz Association, drinks extra)</i>																

## Annex 2: List of Participants

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**List of abbreviation**

CEPAL - Economic Commission for Latin America and the Caribbean; DLR - German Aerospace Centre; FLACSO Chile - Facultad Latinoamericana de Ciencias Sociales; FONASA - Fondo Nacional de Salud; FZK - Forschungszentrum Karlsruhe; GFZ - GeoForschungsZentrum Potsdam; MINVU - Ministerio de Vivienda y Urbanismo; SUR - Corporación de Estudios Sociales y Educación; PUC - Pontificia Universidad Católica de Chile; UCH - Universidad de Chile; UCV - Pontificia Universidad Católica de Valparaíso; UFZ - Helmholtz Centre for Environmental Research, UIKK – University of Innsbruck

### Annex 3: Documentation of topics

Work in the **FoA Energy system** concentrated, at national level, on the technical development of the *Energy system* model at DLR, serving as a tool for characterizing the current energy system as well as for future scenario analysis. Main progress was the integration of core driving factors for energy demand into the existing image of the energy system. The model was adapted to base on available current data provided for the energy sector on national basis by the International Energy Agency. This data base will be complemented by data collection on national and city level which is currently carried out by the colleagues from UCH, in particular by the Chilean PhD student. Additionally, a comprehensive resource assessment of renewable energies for Chile was initiated within an associated PhD project at DLR. For the joint task of developing framework scenarios, the energy system served as an example for identifying analytical steps of the overall scenario analysis. Next steps will be the completion of the sustainable indicator lists, the translation of framework scenarios into the *FoA Energy system*, the linking of national results to the local/regional level as well as a further co-operation with the *FoA Water resources and services* and *Waste management*.

The **Air Quality and health** team performed preliminary work on the assessment of satellite derived NO<sub>2</sub> concentrations for Latin America in order to conduct numerical simulations on the meso-scale. Due to the successful implementation of a PhD candidate for the micro- and meso-scale modelling work for hot spot regions as well as for the assessment of the general air quality situation in the metropolitan region of Santiago de Chile and their dependence on road traffic emissions, the most important step for a efficient processing of the work could be made. Clear linkages are seen to the *FoA Land - use management*, *Transportation* and *Energy* as effects investigated in these topics influence *Air quality and health*, for which an integrated approach seems to be reasonable.

The **Transportation** team indicated close collaboration to the *Energy* group, regarding energy consumption by vehicles; to the *Air quality and health* group concerning traffic volumes on roads linked to emission modelling; to the *Socio-spatial differentiation* group looking at the accessibility standards, and to the *Land - use management* group by taking the interaction between land use and transport supply into account. Linkages to the CCCs are existing on policies feasibility, accessibility, security and crucial resources issues as well as on efficiency versus resource consumption, quality of life and equity. Progress can be seen in the generation of activity plans and the establishing of access to relevant existing models (EOD and MUSSA/ESTRAUS).

The **Land - use management** team developed cooperation with the *Socio-spatial differentiation* and the *Water resources and services* team. With respect to the CCC, the team works for example on the elaboration and/or application of a risk concept for flood and earthquake risk and in the case of the governance concept, the transfer and discussion of the governance research concept with the intention to analyze land use and risk management instruments and decision processes. The main results of work so far are the selection of scale-dependent urban analyses and the definition of one common key for the classification of land uses and one for urban structure types in Santiago de Chile. A generic list of indicators was adapted to the topic and adjusted. In order to identify interdependencies between socio-demographic parameters and land use changes, members of the team analysed population increases and population decreases in the metropolitan region of Santiago between 1992 and 2002 at the municipal level. The next activities of the *Land - use management* group will be the land use classification for 1992 and 2002, and the change detection of relevant land use classes. Urban structure types will be analysed quantitatively, as well as census data for 1992 and 2002. On this basis, a combined analysis of land use changes and socio-demographic data will be conducted.

The **Socio-spatial differentiation** team presented trends and first conclusions on the current dynamic evolution of ambivalent segregation patterns, both geographically and socially and their driving factors. Linkages to others FoA exist and will be intensified by combining social inclusion/exclusion aspects with urban structure type analysis conducted by the *Land - use management* group, contributing to the *Waste* topic regarding informal activities and to the *Transportation* group by evaluating the accessibility to transport infrastructure. Further ext steps of the FoA will contain the evaluation and interpretation of the social and economic consequences, in particular with respect to the opportunities and risks for social integration. Work will be based on statistical data, the preparation of questionnaire surveys and expert interviews, as well as the interpretation of satellite images in cooperation with the *Land - use management* team. Additional work will focus on the definition of the relationship between segregation and vulnerability, the investigation of typical housing preferences to describe and explain (residential) relocation, and the interpretation of demographic characteristics and trends.

The **Waste management** team showed first results of the analysis of the existing waste management system in Santiago, containing waste arising, waste composition, waste disposal, recycling activities and the role of informal sector. Furthermore, they informed about the successful integration of the PhD student of the German side. Another first result is the proposed sustainable indicator list. The team has established linkages to the FoA *Socio-spatial differentiation*, looking at the role of the informal sector and social inclusion/exclusion aspects which are related to that issue. Another linkage exists to the FoA *Water resources and services*, regarding the anaerobic co-treatment of sewage sludge. The thematic relationship to the *Energy* group is established through the use of waste as an energy source. The main next activities will contain the differentiation between municipal and industrial waste, the analysis of recycling waste streams (material – energetically recycling), the contribution of the informal sector (PhD work of Tahnee González). Further work will focus on the analysis of legal conditions, the collecting systems and the cost situation. The contribution to the scenarios development and evaluation will contain different recycling technologies, the role of the informal sector and the problem of cost recovery.

The **Water resources and services** team put together evidence that confirmed the precarious water balance between the megacity Santiago de Chile and its catchment areas. It could be proved by personal experiences during heavy rainfall events in May 2008 that the supply of drinking water is at risk of being interrupted in case of heavy rainfalls. The group observed that the main water related risks for the city's functioning result from insufficient management and treatment of storm water. A PhD thesis on this topic together with *Ingenieria Alemana S.A.* will show new ways to reduce or solve the problem. During the conference the concrete linkages with other FoA (*Land - use management* and *Social-spatial differentiation*) became clearer and potential collaboration was discussed. The team likewise developed a preliminary list of sustainable indicators with collaboration from stakeholders in two pre-conference workshops. These activities confirmed great interest of stakeholders to participate and the willingness to continue interaction, but likewise in the concern over the question: "by whom and how will these indicators be used later" and that a "transversal" view on the middle and long term situations would be needed and sectoral approaches should be avoided. The next activities of the group will comprise the definition of target values for sustainability indicators together with the CCC *Sustainable Development* and stakeholders.

The team of the CCC **Sustainable Development** achieved its main progress during the last six months with respect to the analysis, documentation and evaluation of the previous sustainability debate in Chile and Santiago. Based on these insights, the group identified key issues and deficits regarding an appropriate sustainable development policy or strategy. The team prepared a systematic conceptual approach for the development of different indicator lists each related to a particular purpose within the initiative. The team compiled a comprehensive list of sustainability indicators for each and every FoA and suitable data

sources for these indicators together with the individual teams. The *Sustainable Development* team further led a group with representatives from all topics that developed a conceptual approach for scenario analyses. This group identified essential driving factors to build scenarios for Chile/Santiago and developed proposals to specify these factors at the global level and at the level of Chile/Santiago. Furthermore, a conceptual approach for the planning of meetings with local political, administrative and planning stakeholders and with societal groups was worked out to discuss existing results for the selection and use of indicators or the suitability of scenario storylines. In a next step, co-operation with the FoA teams will concentrate on the finalization of the thematic indicator lists. The team and collaborating stakeholders will determine target values for indicators and a more detailed overview of the political, administrative, and planning structures and decision processes in Santiago and Chile, relevant for sustainable development.

The team working on the CCC **Risk** has developed a heuristic framework to systematize risk mechanisms that are associated with the functions of a megacity and that are related to the different Fields of Application: (1) Attraction/Exposition, (2) Utilization of Resources/Emissions, (3) Coupling/Interaction and (4) Threshold of inclusion/Social transfer. As next steps, the team will discuss and test the validity of these mechanisms with the teams of the Fields of Application.

The CCC **Governance** team has focused its activities on the further development and application of its governance concept. To give an example of its applicability in empirical analysis the concept has been used to study urban sprawl in Santiago de Chile. Progress has also been made in the analysis of governance structures in Santiago (RM) elaborating an overview on actors and institutional regulations in the metropolitan region. Three case studies have been identified that focus on the governance issues of decentralisation, participation and privatization respectively (PhD studies). The team further advanced on the conceptual integration across the three CCCs with the inclusion of essential governance aspects into the integrative concept of *Sustainable Development* of the Helmholtz Association. Governance is also a major issue in the development of scenarios which has just started. As the research on governance is concerned not only with implementation issues (“governance as solution”) but also with sustainability deficits and risks that may evolve from malfunctioning governance practices (“governance as a problem”), it remains a major challenge to relate the research initiative’s concepts of *Governance* and *Risk* more closely to each other. Linkages to all other topics are clear and need to be intensified. Next activities will contain the refinement of strategic conclusions on “sprawl” governance, further efforts in the scenario development in cooperation with the *Scenario* group and the exploration of *Risk* inducing or enhancing governance practices and structures.

#### **Annex 4: Dialogue partners from other cities in Latin America**

- **Dr. David Kullock**, PhD: Urban and Regional Planning (UBA)
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- Actual: Director of the Master Programme Urban and Regional Planning (UBA)
- Director of the Investigation Centre Habitat and Community (UBA)
- Council of Counsel of the Urb.-Environm. Plan (Gobierno de la Ciudad de Buen. Aires)
- Main research interests: metropolitan problems; forms of integrated planning and management.
  
- **Dr. Claudia Dagnond Gibsone**, PhD:
- Bogotá (Columbia), Lawyer
- Studies: Master in International Relations
- Actual: Academic dean of the Faculty of Political Sciences and International Relations of the Pontifica Universidad Javeriana
- Main research interests: Urban Politics, focus on governability, government, governance, politics, economics and public politics to analyse relations between governability, government and governance of the territory and public urban politics
  
- **Dr. Victor Manuel Cantillo Maza**, PhD: Engineering Sciences at the Pontifica Universidad Católica de Chile
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- **Dr. Wiley Ludeña Urquizo**, PhD: Urbanism at the Technical University Hamburg-Harburg in Germany
- Lima (Perú), Architect
- Studies: Architecture and Urbanism at the Universidad Ricardo Palma in Lima, Master in Architectural Design at the Universidad Nacional de Ingenieria of Peru
- Actual: Professor at the Universidad Ricardo Palma, Faculty of Architecture and Urbanism and Professor in the Postgraduate Section of the Architect, Urbanism and Arts Faculty of the Universidad Nacional de Ingenieria
- Main research interests: History and Urbanism Theory, politics and urban development and housing plans in Peru
  
- **Dr. Luis Gerardo Ruiz Suarez**, PhD: Physical Chemistry at the University of Cork, Great Britain
- Mexico (Mexico)
- Studies: Industrial Chemistry at the Universidad Autónoma de Nuevo León, Mexico
- Actual: Centro de Ciencias de la Atmósfera, UNAM
- Main research interests: study of gas flows which influence the greenhouse effect and which are precursors of ozone, and their transformation in the atmosphere and the distribution between the gas phase
  
- **Dr. Oscar Sanchez**, PhD: Transp. Econ. at Univ. de Cergy-Pontoise (Cergy), France
- Mexico (Mexico),
- Studies: Civil engineering at the Universidad Autónoma de Puebla (Puebla) and the Instituto de Investigaciones Eléctricas (Cuernavaca), México
- Actual: Departamento de posgrado-Facultad de Ingeniería at the Universidad Autónoma del Estado de México (Toluca), Mexico
- Main research interests: urban transport, transport economics, data collection, Geographic Information System, large cities and metropolitan areas observatory

## Annex 5: PhD in RHM and their topics

Field of Application	Title of the Work	Name	Start of Work
Sustainable Development	Comparative sustainability in regional megacities (the cases of Bogota, Mexico City and Santiago): towards the construction of a system of third generation indicators	Marko Quiroga	01.03.2008
Sustainable Development	Targets and indicators for sustainable development in the Santiago metropolitan region: a critical institutional perspective	Alejandra Salas	01.03.2008
Sustainable Development	Applied general equilibrium and sustainability indicators for Santiago	Jaques Clerc	01.03.2008
Governance	The role of public participation in privatized planning. Governance innovations on the urban fringe in Santiago de Chile.	Michael Lukas	01.10.2007
Governance	Governance in the public transport in Santiago de Chile and Bogotá	Carolin Schulz	01.03.2008
Governance	Power morphology in the capitalist city - Urban poverty, governance and water market in Santiago de Chile	Gustavo Duran	01.03.2008
Risk	Political coordination and risk in Chile	Gabriela Azócar	01.03.2008
Social-Spatial Differentiation	Ambivalent segregation patterns considering spatial and temporal dimensions of social integration – the case of Santiago de Chile	Juliane Welz	01.09.2007
Social-Spatial Differentiation	Spatial proximity and social integration. The dimensions of social integration and its application to the urban space.	Alejandra Rasse	01.03.2008
Land - use management	Flood risk assessment in Santiago de Chile	Annemarie Ebert	01.10.2007
Land - use management	Urban growth and its effects in the increase or decrease of natural risks in the Andean piedmont of the metropolitan region of Santiago, Chile	Vanessa Ruguiero	01.03.2008
Land - use management	Developing and testing tools for first order site classification of large areas	Marco Pilz	01.11.2007
Water resources and services	Management and regulation of gravel mining and water use in urban areas conditions in the Maipo river	Christián Godoy	03.09.2009
Transportation	Model based evaluation of transport policies in Megacities – the case Santiago de Chile	Andreas Justen	01.07.2007
Air quality and health	Development of a modelling chain for the description of the air quality within the greater area of Santiago de Chile	Friederike Greb	01.02.2008
Energy system	Modelling energy systems in Megacities with a focus on sustainable development	Gonzalo Paredes	01.03.2008
Waste management	Analysis of different municipal waste management concepts for the Megacity Santiago de Chile and their impacts on the informal sector.	Tahnee González	01.10.2007



## **Annex 6: (a) Publications, (b) Presentations at conferences, (c) Working papers**

### **(a) Publications (since 2006)**

**Banzhaf**, Ellen; **Höfer**, René (2008): Monitoring urban structure types as spatial indicators with CIR aerial photographs for a more effective urban environmental management. IEEE Transactions on Geoscience and remote sensing, 14 pp. (in press)

**Macedo**, J.; **Abraham**, Wolf-Rainer (2008): Ambivalent role of microbial communities in polluted rivers. In: River Pollution Research Progress, (peer-reviewed review), accepted

**Hansjürgens**, Bernd; **Heinrichs**, Dirk; **Kuhlicke**, Christian. (2008): Mega-urbanization, risk and social vulnerability. In: Warner, K. (Ed.): *Megacities: Social vulnerability and resilience building*. Summer Academy for Social Vulnerability. United Nations University UNU EHS and Munich Re Foundation, (in press)

**Heinrichs**, Dirk; **Nuissl**, Henning (2008): Megastädte als Risikolebensraum – Strategien für eine nachhaltige urbane Entwicklung. Die Helmholtz-Forschungsinitiative „Risk Habitat Megacity“. In: Wehrhahn, R.: *Risiko - Verwundbarkeit - Sicherheit in Lateinamerika aus geographischer Perspektive*. Kieler Geographischen Schriften 117: 293-301

**Heinrichs**, Dirk; **Nuissl**, Henning; **Stelzer**, Volker (2007): „Risk Habitat Megacity“ – Strategies for sustainable development in Megacities and urban agglomerations. Beitrag für das 8. Forum DKKV/CEDIM: Disaster reduction in climate change. Universität Karlsruhe, 15./16.10.2007, (on CD)

**Hansjürgens**, Bernd; **Heinrichs**, Dirk (2007): Mega-Urbanisierung: Chancen und Risiken für Nachhaltige Entwicklung in Megastädten. In: Bundeszentrale für Politische Bildung. *Online Dossier Megastädte*, [http://www.bpb.de/themen/OTBOZA,,0,MegaUrbanisierung%3A\\_Chancen\\_und\\_Risiken.html](http://www.bpb.de/themen/OTBOZA,,0,MegaUrbanisierung%3A_Chancen_und_Risiken.html)

**Heinrichs**, Dirk; **Nuissl**, Henning (2007): Destrucción del medio ambiente y desarrollo sostenible. In: *Doingbusiness*. Cámara de Industria y Comercio Colombo-Alemana (53): 51

**Heinrichs**, Dirk; **Nuissl**, Henning (2007): Peripheral expansion and central decline in Latin American Megacities: recent trends and the new challenges for governance. In: Kenneweg, H.; Tröger, U. (Eds). *Landschaftsentwicklung und Umweltforschung*. Schriftenreihe der Fakultät Planen Bauen Umwelt; Technische Universität Berlin. Band S20: 367-371

**Hansjürgens**, Bernd; **Heinrichs**, Dirk; **Kopfmüller**, Jürgen; **Lehn**, Helmut; **Nuissl**, Henning (Eds) (2007): „Risk Habitat Megacity“ ¿Sostenibilidad en Riesgo? A Helmholtz Research Initiative 2007-2013. Research plan. Leipzig, S. 98

**Heinrichs**, Dirk (2007): Mega-urbanization and sustainable development. Why research matters. In: *Trialog Zeitschrift für Planen und Bauen in der Dritten Welt* 92 (1/2007). Südost-Verlag (SVS): 7-9

**Nuissl**, Henning (2007): “Risk Habitat Megacity”. Strategies for sustainable development in megacities and urban agglomerations. In: *Trialog Zeitschrift für Planen und Bauen in der Dritten Welt* 92 (1/2007). Südost-Verlag (SVS): 10-11

**Heinrichs**, Dirk (2007): Das System Megacity. Chancen und Risiken für Nachhaltige Entwicklung. In: *\_key Magazin für Wirtschaft und Wissen* (12): 55-61

**Heinrichs**, Dirk; **Kabisch**, Sigrun (2006): Risikolebensraum Megacity. Strategien für eine nachhaltige Entwicklung in Megastädten und Ballungszentren. In: *GaiA* (2/2006): Oekom Verlag: 157-16

**(b) Presentations at Conferences (since 2007)**

Congress: *Developments and challenges of Megacities* (September 30–October 2, 2008) in Bogotá: Columbia within the regional Expo Germany 2008, in cooperation with the German-Colombian Chamber of Industry and Commerce and the German Academic Exchange Service (DAAD) (in preparation)

UN Habitat in Nanjing, (November 3–11, 2008): *Forth session of the World Urban Forum*, China; Common presentation with the other German research initiatives on Megacities (BMBF and DFG) (in preparation)

Meeting with the Scientific Advisory Board of the initiative (September 16, 2008): Helmholtz Association Berlin Office (in preparation)

**Kabisch**, Sigrun; **Sabatini**, Francisco, **Jordán**, Ricardo: IAPS conference in Rome: (July 28-31, 2008): Urban Diversities, biosphere and well-being, Justification of different sessions and lectures in cooperation with research partners from Latin America (in preparation)

**Krellenberg**, Kerstin (June 16-17, 2008): I Seminário Internacional sobre Aquecimento Global nas Cidades, in Curitiba, Brazil; Presentation of the “Risk Habitat Megacity” research initiative

**Schulz**, Carolin (7.5.2008): ÖPNV-Modernisierung in Santiago de Chile *Verkehrsplanungsseminar: Megacity und Verkehr*, Technische Universität Berlin

**Parraguez**, Leslie (Pontificia Universidad Católica de Chile) (11.4.2008): Emergent social movements in Santiago between the defense of spatial identity and the fight for city rights. The case of the Residents Assembly of José María Caro. UFZ Leipzig

**Heinrichs**, Dirk; **Nuissl**, Henning (6.-8.4.2008): Urban sprawl and new challenges for (metropolitan) governance in Latin American – the case of Santiago de Chile. Conference *A suburban world*, Virginia Tech. Washington DC

**Romero**, Hugo (Universidad de Chile) (4.4.2008): Socioeconomic and environmental effects of land use and land cover changes caused by urban sprawl of the Chilean metropolitan areas. Urban issues under a context of free market economy in developing nations, UFZ Leipzig

**Lehn**, Helmut (31.3.2008): “Risk Habitat Megacity”. Alumni Expertenseminar *Catástrofes naturales - Gestión y prevención de catástrofes*, Uni Karlsruhe

**Welz**, Juliane; **Kabisch**, Sigrun (14.–15.3.2008): Is spatial proximity leading to social integration? New gated communities in former low income residential areas in the north of Santiago de Chile. Conference *Persistent Divides: Marginalization and Social Exclusion in Latin America*, Grand Valley State University. Grand Rapids

**Suppan**, Peter (13.3.2008): Environmental issues in urban agglomerations, Deutsche Physikalische Gesellschaft (DPG); Joint-Session with the European Physical Society (EPS) - Environmental Physics Division: *Energy and Environment*, Darmstadt

**Baier**, Frank (13.3.2008): A global monitoring system for climate and environment, Deutsche Physikalische Gesellschaft (DPG); Joint-Session with the European Physical Society (EPS) - Environmental Physics Division: *Energy and Environment*, Darmstadt

**Banzhaf**, Ellen; **Ebert**, Annemarie; **Höfer**, Rene; **Mallast**, Ulf (5.-7.3. 2008): Detecting land use dynamics and their impacts on disaster risk in the fast growing city of Santiago de Chile with high resolution remote sensing and GIS data (Posterpräsentation). EARSeL Joint Workshop: *Remote sensing: new challenges of high resolution*. Developing countries, Urban remote sensing, Bochum

**Suppan**, Peter (14.2.2008): Climate change and its impact on air pollution as a challenge for future investigations, 2<sup>nd</sup> ENERO workshop on *Air pollution and Climate Change*, Brussels

**Suppan**, Peter (8.2.2008): Luftqualität in Megacities als interdisziplinäres Forschungsthema. Wissenschaftszentrum Umwelt (WZU) Augsburg

**Stelzer**, Volker (12.12.2007): „Risk Habitat Megacity“. Vortrag beim Regionalwissenschaftlichen Kolloquium am Institut für Regionalwissenschaft an der Universität Karlsruhe (TH)

**Heinrichs**, Dirk; **Nuissl**, Henning (2.-4.12.2007): Urban sprawl and new challenges for governance – the cases of Santiago de Chile and Berlin. Coloquio *Del País Urbano al País Metropolitano*, Pontificia Universidad Católica de Chile (PUC). Santiago de Chile (PUC)

**Buescher**, Christian (10.-11.12.2007): Risiko-Lebensraum Megastadt. Ein soziologische Perspektive; Internationales Symposium: *Durch Luhmanns Brille: Herausforderungen an Gesellschaft, Politik und Recht in Lateinamerika*; Berlin, Ibero-Amerikanisches Institut

**Mascareño**, Aldo (10.-11.12.2007): Lateinamerika als Region der Weltgesellschaft: funktionale Differenzierung und Inklusions-/Exklusionszonen; Internationales Symposium: *Durch Luhmanns Brille: Herausforderungen an Gesellschaft, Politik und Recht in Lateinamerika; Berlin*, Ibero-Amerikanisches Institut

**Lukas**, Michael (2.-4.12.2007): Desarrollo Urbano Glocal. Conceptualizar los Megaproyectos Residenciales en la Periferia de Santiago de Chile desde la Geografía Política. Coloquio *Del País Urbano al País Metropolitano*, Pontificia Universidad Católica de Chile (PUC). Santiago de Chile (PUC)

**Stelzer**, Volker (22.11.2007): Sostenibilidad, riesgo y gobernabilidad en las metrópolis latinoamericanas. Vortrag in den *Jornadas Ciudadeds Sostenibles en América Latina y el Caribe: políticas, estrategias e instrumentos*, ausgerichtet von der Economic Commission for Latin America and the Caribbean in the United Nations (ECLAC/CEPAL). Santiago de Chile

**Suppan**, Peter; **Forkel**, Renate, **Junkermann**, W., **Franck**, Ulrich (15./16.10.2007): Megacities: Risiken aus Sicht der Luftqualität, 8. Forum DKKV/CEDIM: *Disaster Reduction in Climate Change*, Universität Karlsruhe

**Stelzer**, Volker (3.10.2007): Das integrative Konzepte zur Bewertung Nachhaltiger Entwicklung – IKoNE. Vortrag beim Deutschen Geographentag: *Umgang mit Risiken. Katastrophen – Destabilisierung – Sicherheit*. Bayreuth

**Weiland**, Ulrike (30.9. 4.10. 2007): Leitung der Fachsitzung 55: Risiken für eine nachhaltige Stadtentwicklung in Lateinamerika“. Deutscher Geographentag, Bayreuth

**Heinrichs**, Dirk (30.9. 4.10.2007): Risiken für die Nachhaltigkeit lateinamerikanischer Megacities–Die Forschungsinitiative „Risk Habitat Megacities“ der Helmholtz-Gemeinschaft. Deutscher Geographentag, Bayreuth

**Erbertseder**, Th. (12.9.2007): Space tools and solutions for monitoring the atmosphere in support of sustainable development, UN/Austria/ESA Symposium, Graz, Austria

**Suppan**, Peter (10-14.9.2007): Megacities: Eine Herausforderung für die Forschung in der Luftqualität, Meteorologentagung DACH 2007, Hamburg

**Heinrichs**, Dirk; **Nuissl**, Henning (5.–10.8.2007): Peripheral expansion and central decline in Latin American megacities – recent trends and new challenges for governance. 2<sup>nd</sup> *International Congress on Environmental Planning and Management*, Technische Universität Berlin. Berlin (TU Berlin)

**Hansjürgens**, Bernd (21.7.2007): Keynote lecture on Megacities, risk and social vulnerability. *Summer academy for social vulnerability*. United Nations University UNU EHS and Munich Re Foundation, Munich

**Kopfmüller**, Jürgen (6.7.2007): Das integrative Nachhaltigkeitskonzept der HGF: Entstehung – Architektur – Anwendung. Vortrag im Rahmen des Fachkolloquiums der DBU „Was heißt eigentlich ‚nachhaltig‘? Berlin

**(c) Working papers (since 2007)**

**Kopfmüller**, Jürgen; **Simon**, Sonja; **Stelzer**, Volker; **Jörissen**, Juliane; **Barton**, Jonathan; **Rodriguez-Seeger**, Claudia; **Schmitz**, Rainer; **Vargas** Luis (2008): How to implement scenario analyses in RHM: A guideline - exemplified for the FoA Energy system (Draft), Karlsruhe

**Heinrichs**, Dirk, **Nuissl**, Henning, **Rodriguez Seeger**, Claudia: Urban Sprawl and New Challenges for (Metropolitan) Governance in Latin America – the Case of Santiago de Chile

**Nuissl**, Henning; **Heinrichs**, Dirk (2008): Fresh wind or hot air? What spatial planning can gain from the governance-discourse. Working paper, Leipzig;

**Kabisch**, Sigrun; **Heinrichs**, Dirk; **Welz**, Juliane (2008): Social inclusion, Content, approach and interlinks to some related concepts. Leipzig

**Kopfmüller**, Jürgen (2008): Sustainability Indicators in “Risk Habitat Megacity” (RHM): Functions - types - conceptual proposals. Working paper, Karlsruhe

**Büscher**, Christian (2008): Risiko-Lebensraum Megastadt, First Draft, Karlsruhe submitted for publication in: Birle, Peter/Dewey, Matias/Mascareño, Aldo [Hrsg.]: *Durch Luhmanns Brille: Herausforderungen an Politik und Recht in Lateinamerika und in der Weltgesellschaft*

**Nuissl**, Henning; **Heinrichs**, Dirk (2007): A heuristic framework for the empirical analysis of urban and regional governance. Working paper, Leipzig

**Kopfmüller**, Jürgen; **Büscher**, Christian; **Stelzer**, Volker (2007): Escenarios en el proyecto „Risk Habitat Megacity“: Función – propuestas preliminares – procedimiento posterior, (versión española: Kerstin Krellenberg, Juliane Welz), Karlsruhe

**Kopfmüller**, Jürgen; **Büscher**, Christian; **Stelzer**, Volker (2007): Szenarien in „Risk Habitat Megacity“: Funktion – erste Vorschläge – weiteres Vorgehen, Überblickpapier, Karlsruhe