

Local Sustainability 2

Konrad Otto-Zimmermann *Editor*

Resilient Cities 2

Cities and Adaptation to Climate
Change – Proceedings of the Global
Forum 2011

I.C.L.E.I.
Local
Governments
for Sustainability

 Springer

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Editor
Konrad Otto-Zimmermann
ICLEI – Local Governments for Sustainability
World Secretariat
Kaiser-Friedrich-Str. 7
53113 Bonn
Germany

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Foreword

Preparing for the impacts of climate change on the world's cities, especially in rapidly urbanizing Africa and Asia, is a major challenge of the twenty-first century. It will be those living in poverty who will suffer most in any climate crisis.

The 2011 Resilient Cities Congress stressed that resilience is more than successful climate change adaptation. This is why water, energy, food security and ecosystems are so important in urban areas characterized by high complexity, density and diversity.

Urban planning is an essential instrument to address these related challenges, for which sound vulnerability and risk assessments are essential. In this book of the Congress, we learn that although cities are not waiting to set priorities and create long-term road maps towards resilience, in many cases we are still lacking the sufficient facts and figures on which to base decisions.

The Congress heard from cities as diverse as Lagos, Nigeria; Ho Chi Minh City, Vietnam; Semarang, Indonesia; London, UK – all of which are beginning to find solutions.

All are assessing which communities, places and sectors are most vulnerable. They are investing in climate proofing their infrastructure networks. All are integrating adaptation action in urban planning initiatives and municipal finance scenarios.

Cities are moving from stand-alone plans to building climate adaptation into their ongoing planning, budgeting and infrastructure investments. They focus on smarter land-use planning and building codes as key instruments to pursue resilience.

This book shows how the Congress advanced debate on the need for cities to get their fair share of the adaptation resources pledged – resources cities so desperately need to become more resilient.

It shows a need for new institutional mechanisms to promote local resilience. Local government capacity needs to be strengthened to engage with the private sector, work with academic institutions and harness community knowledge and resources.

The opportunities and challenges are very diverse. Cities are learning to live with rapidly changing conditions.

As a Patron of the 2011 Congress, I would like to congratulate the delegates of the Resilient Cities Congresses with the richness of ideas coming out of this event. I would also like to commend ICLEI for taking the lead in forging the partnership of organizations supporting the Congress.

Dr. Joan Clos
Under-Secretary General United Nations
Executive Director UN-HABITAT

Authors

Carlo Aall holds a master's in nature conservation from the Agricultural University of Norway (1987) and took his Ph.D. at the University of Aalborg in 2002 on the issue of LA21. He has worked at Western Norway Research Institute since 1990.

Beñat Abajo has a bachelor's degree in biological sciences. He works in the Unit of Environment in Tecnalia since 2002, focusing his research on strategic environmental assessment and management, sustainable spatial planning and the application of geospatial technologies to decision support systems through local, regional and European research and innovation projects. From the very beginning, he has been working in the use of ICT applied to the natural environment (Environmental Studies Centre), urban planning (City Council of Vitoria-Gasteiz) and territorial planning (Basque Government). He has also been participating in the development of the research and technological update in the sector of geo-information of the Basque Autonomous Community through a non-profit association.

Yaser Abunnasr is a visiting assistant professor in Landscape Architecture at the American University of Beirut. His academic background includes a BA in architecture, an MA in landscape architecture, and a PhD candidate in regional planning. He teaches design and planning, with research focusing on green infrastructure and climate change.

Gotelind Alber is the head of Sustainable Energy and Climate Policy, a consulting entity based in Germany. She is an independent researcher and advisor on sustainable energy and climate change policy with a special focus on multilevel governance, gender issues and climate justice. Ms. Alber is a physicist by education and has 25 years of working experience in research, policy and management. Previously, she served as managing director of the Climate Alliance of European Cities.

Ana Alcantud Bachelor of Sociology by Autonomous University of Barcelona with post-graduate degree on "Local Government, Participation and Sustainable Development" At the present time, she is a project manager in the non-profit SME Ecoinstitut Barcelona, providing the social dimension and the participatory

perspective to applied projects related to sustainable development. She is also participating in international projects like the assessment of the implementation of Marrakesh Taskforce Approach to Sustainable Public Procurement for UNEP and EU projects like the 7th FP European projects such as the EUPOPP “Policies to promote Sustainable Consumption Patterns” and GPPinonet Life + (Information and Communication Project), carrying out the technical secretary of the Spanish Green Public Procurement Information Regional Network.

Andrés Alonso has been working for Vitoria-Gasteiz City Council since 1985. Currently, he is the head of the Environmental Planning and Waste Management Service in the Environmental and Sustainability Department of Vitoria-Gasteiz City Council. He is responsible for the implementation of several environmental action plans and strategies, like the Air Quality Plan, the Local Energy Plan, Waste Management Plan and the Climate Change Strategy. He is also involved in the Local Agenda 21 process and in the elaboration and implementation of the Environmental Action Plan (Agenda 21) of the City Council.

Alice Balbo holds an M.A. in International Relations and Diplomacy and a specialization in Environmental Communication. After working at the ICLEI European Secretariat supporting the organization of international events, since September 2009 she has been managing the Resilient Cities Congress series project on urban resilience and adaptation at the ICLEI World Secretariat and is currently part of the ICLEI global coordination group on adaptation to climate change.

Hannah Baltes studied spatial planning at the University of Dortmund (Dipl.-Ing.) from 2000 until 2006. Since 2006, she works as an assistant professor at the Institute of City Planning and Urban Design at the University of Duisburg-Essen. Her main research areas are sustainable and energy-efficient urban development, urban development and climate change (adaptation and mitigation) and urban material flows.

Rita Baraldi, graduated in Agricultural Science at the University of Bologna (Italy) in 1981, since 1999 is a senior scientist at IBIMET and from 2009 is also responsible for the detached branch of IBIMET in Bologna. She is a plant physiologist and ecophysiologicalist affiliated to many national and international projects with sound experience on the effectiveness of vegetation on air depuration with particular emphasis on the CO₂ and particulate uptake from the atmosphere and on the potentiality to emit biogenic volatile organic compounds (VOCs) important for the contribution in ozone production or reduction. Such information is providing useful and innovative protocols for local air-quality management.

Scott Baum is trained in economics and sociology and is currently Professor in the School of Environment, Griffith University, Australia. He is currently involved in a number of competitively funded research projects. His research interests include understanding the impacts of climate change on local community socio-economic and health outcomes.

G.K. Bhat is a hydrogeologist with over two decades of experience in natural resource management, groundwater exploration and urban water supply systems.

He started his career as a geologist in Geological Survey of India and has worked with the private and NGO sectors. His current interests are enabling urban and rural communities to sustainably manage their local natural resources and developing community-managed disaster mitigation systems under changing climate contexts.

Dr. Martin Birke, Sociologist and Economist, is a scientific co-worker at Sozialforschungsstelle Dortmund (Center for Social Research) at the Technical University Dortmund/Germany, Research department “Learning Organizations and Networks”. His major fields of work include organizational research and consulting, network management, sustainable development, and climate change.

Marjorie Breyton works as coordinator of Impronta Etica, an Italian non-governmental organization that aims at promoting corporate social responsibility. She graduated from the Institute of Political Science of Lyon (France) in 2002 and then did the European Master’s degree on Human Rights and Democratization in the academic year (2002–2003) both in Venice and in the Danish Institute for Human Rights in Copenhagen.

Jeb Brugmann is a leading practitioner and thinker on strategy, focusing particularly on the critical contribution of innovation at the micro-level of the locality, business model, or consumer cluster to achieve macro-level strategy objectives. For 25 years, he has been devising solutions to help local communities access the benefits of globalization and to help global organizations engage in local communities and markets. As the founder and chief executive of major international organizations and programs, as a social entrepreneur and for-profit private sector entrepreneur, and as a corporate and urban strategy consultant, he has worked on the ground in scores of cities and rural regions in 28 countries.

Alejandro Callejas serves as the under-minister of Environment in the Ministry of Environment and Natural History of the State of Chiapas, Mexico. Mr. Callejas, a biologist, is a specialist in bioconservation.

Carlos Castillo Licensed in chemistry in University of the Basque Country UPV/EHU in 2005, Carlos Castillo is project manager in the Area of Biodiversity and Climate Change developing projects concerning climate change and with regard to Regional Inventories, Mitigation and Adaptation.

Faith Chihumbiri holds the position of junior professional officer for Disaster Risk Reduction at ICLEI Africa. She is studying towards a master’s in technology in environmental management: evaluating a project on green business initiatives. She holds a BSc (Hons) in forest resources and wildlife management from National University of Science and Technology (Zimbabwe).

Florence Crick is a Research Fellow on the South East Queensland Climate Adaptation Research Initiative in the Urban Research Program at Griffith University, Australia. Her work focuses on investigating climate change adaptation for human settlements in South East Queensland, with a particular emphasis on emergency management. Florence previously worked at the OECD as a climate change adaptation consultant. She has a PhD from the University of Oxford, England.

Julien Custot is facilitator of the ‘Food for the cities’ multidisciplinary initiative at the Food and Agriculture Organization of the United Nations and moderates the food-for-cities@dgroups.org global network, bringing together stakeholders from the public sector, the private sector and the civil society. He has a professional experience in urban planning, housing, utility management and environmental protection within various positions at national and local levels in France.

Martha Delgado graduated with a bachelor’s degree in education and a specialization in environmental and civic education. She has obtained diplomas in Management and Analysis of Environmental Policies (1994); Funding and Institutional Development of Non-Profit Organizations (1986); The Metropolitan Phenomenon: Strategies; and Instruments and Alternatives in Management of the University Program of Studies for the City (2000), PUEC, UNAM. She is also a fellow in the Advanced Studies Program for Sustainable Development and the Environment (LEAD) of the Colegio de Mexico (2004). She is currently the minister of environment of the Mexico City Government and also ICLEI World’s vice president, president of the Network of Environmental Management in Cities of Latin America and the Caribbean and alternate governor of the World Water Council.

José María Ezquiaga Dominguez holds degrees in architecture, planning and social studies from Madrid University and has practiced regional and urban planning for more than three decades, first in the Madrid municipal and regional administration and from 1995 from his private practice. He has worked on most of the large Spanish urban areas in all scales of planning and architecture, and has also worked for the European Commission and various Latin-American cities as Buenos Aires, Medellín or Bogota as consultant on urban issues. His practice has developed specific consulting works for the inclusion of contents regarding climate change and growth control in spatial planning laws. He is a teacher at the Escuela Técnica Superior de Arquitectura de Madrid and has also been a visiting professor in several foreign universities.

Marielle Dubbeling (MSc) is currently the global coordinator of the Resource Center on Urban Agriculture and Food Security (RUAF) From Seed to Table Programme (2009–2011) and was the policy adviser in the RUAF Cities Farming for the Future Programme, supporting 21 cities around the world in multi-stakeholder policy formulation and action planning on urban agriculture. Before joining ETC and RUAF, she worked with the UN-HABITAT Urban Management Programme in Latin America, where she supported the development of municipal programmes on urban agriculture in cities in Ecuador, Peru, Argentina, Brazil and Cuba.

Arthur Getz-Escudero has apprenticed to a traditional urban farmer in Japan while learning about farmer-consumer co-partnership networks and organic markets; he worked with The Nature Conservancy and World Resources Institute, managing projects on biodiversity, biosafety and sustainable development governance and was a policy director in Washington, DC, for Heifer International, working on hunger, poverty and community-led development strategies. He is currently a President’s Scholar at Cardiff University, researching urban-rural linkages and

social-ecological resilience in food systems, and co-coordinates a working group within FOODLINKS, an EU collaborative project with the purpose of evaluating knowledge brokerage activities to promote sustainable food consumption and production.

Lucinda Fairhurst is currently the Climate and Disaster Risk Reduction manager for ICLEI Africa whilst also fulfilling the role of the ICLEI Global South co-ordinator. Lucinda holds a master's in science and has been working within the Adaptation Arena in the context of African local governments for a number of years. Lucinda has led the adaption front for ICLEI Africa since late 2008. Lucinda drives the climate and disaster preparedness processes at the local government level through trying to ensure that all key stakeholders, particularly the urban poor (whom she considers most vulnerable and at risk), and local academic researchers and the private sector work together in a transparent process.

Efrén Feliu holds a Building Engineering Degree as well as different postgraduates (spatial planning and development, intercultural studies, social psychology and NGO management). He has a relevant professional background in consultancy and strengthening initiatives for public administrations, specially focused in the fields of local development, spatial planning and sustainable development policies. He has been working at Central America for over 4 years and is involved in European initiatives for more than 8 years. He is currently head of Spatial Development and Urban Sustainability in the Unit of Environment of Tecnalia, coordinating research projects in the fields of climate change adaptation, sustainable spatial development and environmental integration policies.

Jörg Felmeden has been a researcher at ISOE since 2007 where he is working in the research unit Water Infrastructure and Risk Analyses. In his work, he is focussing on water and sustainable environmental planning. He has studied civil engineering at the University of Kassel, Germany, and is currently doing his doctoral work there in the specialist area of urban water management on retention soil filters.

Zach Ferdaña is a Senior Marine Conservation Planner for the Global Marine Initiative (GMI) of The Nature Conservancy (TNC). Zach helps design and support approaches and methods for ecosystem-based management and marine spatial planning in U.S. and international geographies (www.marineplanning.org) and ecosystem-based adaptation planning in climate change arenas (www.coastalresilience.org). Over the past decade Zach has conducted and managed spatial analysis projects in marine conservation planning in coastal, nearshore, and offshore environments. Using Geographic Information System (GIS) and online decision support technology, Zach has focused the organization to adopt marine planning innovations and apply them in conservation projects in North, Central and South America, Asia, the Pacific Islands and in the Caribbean.

Stephen Flood received his Bachelor of Commerce International (German) from the University College Dublin (UCD) Quinn School of Business in 2004. He obtained a MA in European Studies from the UCD School of Politics and International Relations (SPIRe) in 2007. He also holds a postgraduate diploma in Statistics from

Trinity College Dublin (2008). Stephen worked as a policy analyst in Comhar Sustainable Development Council (SDC) from November 2007 to September 2008. He is currently writing up his doctoral thesis at the Irish Climate Analysis and Research UnitS (ICARUS), NUI Maynooth.

Hartmut Fünfgeld is a research fellow for Climate Change Adaptation at the Global Cities Research Institute of the Royal Melbourne Institute of Technology (RMIT) in Australia. His research focuses on planning approaches and frameworks for local and regional level climate change adaptation. Prior to his current role, he led the development and piloting of a local government capacity building program on climate change adaptation at ICLEI Oceania. Hartmut has several years of experience in research and practice on social vulnerability and local sustainability in developed and developing countries. He holds a Ph.D. in human geography from the University of Heidelberg, Germany.

Steve Gawler is director of International Programs for ICLEI Oceania, based in Jakarta. His recent work has included technical support to the GIZ Climate Advice programme (PAKLIM) in Indonesia and developing a dissemination and replication strategy for the next phase of the Rockefeller Foundation ACCCRN project. Steve has extensive experience in local government management. With over 20 years in senior management roles in Australian councils, Steve has had responsibility for most functional areas in local government, including 7 years as city manager.

Birgit Georgi is project manager for urban issues, regional vulnerability and adaptation to climate change at the European Environment Agency since 2007. Acting at the the interface between science and policy, she currently conducts a European study on urban vulnerability and adaptation to climate change. Trained as a landscape architect and planner, she started working with environmental issues at the Federal Environmental Agency of Germany in 1989, where she also gained experience in different areas, such as ecological planning, biodiversity, environmental management and sustainable transport.

Ben Gilmer is a Conservation Geographer with the Global Marine Team of The Nature Conservancy. Ben works to develop innovative spatial analysis and community engagement tools and techniques to help decision makers and coastal communities plan for global climate change, ecosystem-based adaptation, and marine and coastal resource conservation. Ben came to the Conservancy in 2008 with a background in environmental modelling, spatial analysis, and remote sensing. Ben was most recently an instructor in the Radford University Department of Geography and has worked in natural resource conservation with state and local governments, academic research institutes, and NGOs. Ben has a master's degree in geography from West Virginia University and a BSc in geography from Radford University, Virginia.

Iratxe González-Aparicio is researcher on Urban Climate and Air Quality Modelling in Tecnalia. Her background is in chemical engineering specialized in atmospheric environment, gaining her MSc in Impacts and Mitigation of Climate Change in the University of Heriot-Watt, Edinburgh (Scotland). Currently, she

is in the last stage of her Ph.D.: “Air Quality and Meteorological Modelling in urban areas.” She is involved in activities with the online regional-scale model (Enviro-HIRLAM) at Danish Meteorological Institute and in teaching courses about integrated modelling of meteorological and chemical transport processes under the framework of the European networking project MUSCATEN. Moreover, she is working in other national and European research projects such as K-EGOKITZEN and in the FP7 MEGAPOLI. Her main fields of interest are the atmospheric chemical transport modelling, mesoscale meteorology, air pollution and mitigation and adaptation measurements for the definition of strategies to climate change in urban areas.

Frank Gössel was more than 20 years mayor of Geising town and went to pension in March 2011. He contributed to the development of the town in a substantial way and received the full appreciation of the Geising inhabitants for his work.

Javier Barros Guerton holds degrees and postgraduates in architecture and planning from Spanish, Belgian and French universities and has practiced regional and urban planning and architecture for more than a decade, first in north-western Spain and later from Madrid. He has been head of projects at Ezquiaga Arquitectura, Sociedad y Territorio since 2001, working in all scales of planning, architecture and consulting, involved in Spanish as well as international projects. He has taught master classes in various Spanish universities.

Raffaella Gueze works as Responsible of Sustainability Office at the Environment Sector of the Municipality of Bologna, specialized in participatory processes and sustainability projects. She is the referent for the Environmental Budget in the city of Bologna. She is the coordinator on behalf of the Municipality of Bologna of several European projects. She graduated in Environmental Engineering in 2001 at the University of Bologna.

Nicole Gurran Dr. Gurran holds a Ph.D. from the University of Sydney in Urban and Regional Planning and is the program head for the department. She teaches and researches in land use, demographics, and climate adaptation for sea change communities.

Elisabeth M. Hamin Dr. Hamin holds a Ph.D. from the University of Pennsylvania in City and Regional Planning and a Master of Management from Northwestern University’s J.L. Kellogg Graduate School of Management. She teaches and researches local level climate adaptation and land use planning at the University of Massachusetts.

Jens U. Hasse Dipl.-Ing (MSc) in Civil Engineering at RWTH Aachen University, M.A. in European Public Affairs (EPA) at Maastricht University; since 2007 working at FiW on future strategies for the water sector, climate change adaptation and project management.

Ann Henderson-Sellers is an ISI “most highly cited” author of over 500 publications on climate and climatic change. Prior to holding her post as an Australian Research Council Fellow at Macquarie University, she was Director of the United

Nations' World Climate Research Programme and Deputy Vice-Chancellor of RMIT. A Fellow of Australia's Academy of Technological Sciences and Engineering, Ann received the Centenary Medal of Australia for Service to Australian Society in 2003.

M. Karmele Herranz-Pascual is researcher in the Unit of Environment of Tecnalia from 1998. She holds a PhD in Social and Environmental Psychology from the University of the Basque Country (1994). Since the beginning of her activity, she has specialized in psychosocial studies concerning environmental subjects working with the top council of scientific investigations (1989–1995). From 1995 up to 2002, she has collaborated with the Department of Social Psychology and Behaviour Science of Methodology of the Basque Country University in several researching projects. She joined Tecnalia in 1998, continuing with her investigation work within the area of the environmental psychology. She has more than 20 relevant publications in books and magazines and has participated in more than 50 communications to national and international congresses and in almost 70 projects, among which should stand out: the organization of desks, workshops and forums.

Ishtiuq Hossain is an urban planner by profession. He graduated in Urban and Rural Planning from Khulna University, Bangladesh, and obtained a master's degree in Urban Management from the Technical University Berlin (TUB), Germany. He has comprehensive experience in the urban planning and urban governance field in Bangladesh and was involved in many urban development, good urban governance, and master plan preparation projects for municipalities in Bangladesh. Mr. Hossain is currently working as an expert on urban governance performance in e-governance on a municipal administration project with GIZ Bangladesh. His field of interest is urban governance and urban planning.

Dr. Matthew Inman is a Research Scientist working for Australia's national science agency – the CSIRO. Within the Sustainable Cities & Coasts Theme of CSIRO's Climate Adaptation Flagship, his research focuses on development of knowledge on the performance of alternative coastal management and adaptation options and practical guidance for their implementation. Matthew's work includes climate change adaptation research within the AusAID/CSIRO Alliance addressing development challenges in Indonesia and Vietnam – as well as sustainable urban development projects in Australia.

Seong Woo Jeon works as a chief researcher in Korea Environment Institute. He researched climate change impacts on forest in Korea. Currently, he makes an effort to set up the integrated information system for climate change adaptation.

Prof. C.M. Kao is a distinguished professor with the Institute of Environmental Engineering at National Sun Yat-Sen University, Kaohsiung, Taiwan. He received his MS and Ph.D. degrees in Civil and Environmental Engineering from North Carolina State University in 1989 and 1993, respectively. Prof. Kao is a fellow member of American Society of Civil Engineers (ASCE), a fellow member of American Association for the Advancement of Science (AAAS), a registered professional engineer in the branch of civil engineering, a certified ground water

professional, and a professional hydrologist in the United States. He is also a diplomate of the American Academy of Environmental Engineers and diplomate of American Academy of Water Resources Engineers.

Christoph Kasper is a certified landscape planner and has worked as a project coordinator and research assistant on the Moroccan-German BMBF research project *Urban Agriculture as an Integrative Factor of Climate-Optimised Development, Casablanca, Morocco*, at the TU Berlin since 2006. He is also experienced in teaching and has worked for design offices in Potsdam and Berlin. In 2010, he won the BMBF Young Researchers Award, which focuses on ‘Forschung für die nachhaltige Entwicklung der Megastädte von morgen’ (Research for the sustainable development of future megacities).

Aleksandra Kaźmierczak is a research associate in the School of Environment and Development at the University of Manchester, UK. Her research concerns adaptation of cities to climate change in Europe and the UK, with a particular focus on the use of urban green spaces in adaptation, vulnerability of urban communities to extreme weather events and planning processes leading to development of adaptation action plans. Aleksandra holds a Ph.D. in urban geography from the University of Salford, UK.

Robert Kehew is a human settlements advisor at the United Nations Human Settlements Programme (UN-Habitat), based in Nairobi, Kenya. He holds a Masters degree in Public Policy from Harvard University (1991) and a Bachelors in City Planning from the University of Virginia (USA; 1982). Mr. Kehew coordinates UN-Habitat’s Cities and Climate Change Initiative.

Eunyoung Kim received her Ph.D. from Seoul National University. She works as a post-doctoral fellow in the Korea Environment Institute. Her research interests include landscape ecology, spatial interactions among forest management and natural disturbances, forest fragmentation, and methods of spatial analysis.

Junghee Kim is a staff of Sustainability Management team at Amorepacific Corporation. She studied environmental management and is now in charge of the company’s environmental management coping with climate change and water risk.

KyungHyun Kim received his M.Sc. degree in Environmental Technology in 2010 from the Imperial College London in the UK. Since 2011, he has been working in the field of socio-economical vulnerability assessment of sea level rise due to climate change at the Korea Adaptation Centre for Climate Change in the Korea Environment Institute.

Mthobeli Kolisa is an executive director of Municipal Infrastructure and Services at the South African Local Government Association (SALGA). He has been in the public and development management field for more than 15 years as a researcher, a consultant and a senior manager. He holds a Masters Degree in Public and Development Management.

Kerstin Krellenberg is an environmental scientist, holding a Ph.D. in Physical Geography. Since 2007, she is working at the Helmholtz Centre for Environmental

Research – UFZ where she is involved in research on megacities, urban vulnerabilities and urban climate change adaptation. Currently, she coordinates a project on climate change adaptation in Santiago de Chile, including other Latin American cities. Her special interest is on cities and adaptation to climate change.

Adrien Labaeye contributed to the Resilient Cities’ congress series project at the ICLEI World Secretariat. He previously worked with ICLEI in supporting the coordination of local governments’ advocacy in climate negotiations and conducted research on the way local governments participate in international environmental governance. Adrien completed his education at the Institute of Political Studies of Grenoble, France, with an M.A. (hons) in International Relations.

Jungwon Lee received M.Eng. degree in Department of Environmental System Engineering. She works as a researcher at the Korea Adaptation Center for Climate Change in the Korea Environment Institute.

Dr. M.S. Lee is the Director of Environmental Protection Bureau of Kaohsiung City, Taiwan. Dr. Lee received his M.S. degree in Environmental Engineering from National Central University, Chungli, Taiwan, in 1990 and earned his Ph.D. degree in Environmental Engineering from National Sun Yat-Sen University, Kaohsiung, Taiwan, in 2000. Dr. Lee is a registered professional engineer in the branch of Environmental Engineering in Taiwan. He has earned numerous governmental awards including the distinguished governmental employee award. He is also an adjunct assistant professor at Cheng Shiu University, Kaohsiung, Taiwan.

Lykke Leonardsen has worked for the city of Copenhagen since 1997 mainly with urban development and regeneration issues. Since 2008, she has been the head of Strategy for the Centre for Parks and Nature in the Technical and Environmental Administration where she has among other things been responsible for the city’s first climate change adaptation plan.

Norbert Lewald is a project manager at EIFER. He has long-time experiences on renewable and distributed energy systems as well as on the smart-grid approach. He has coordinated the BMWI lead-project EDISon, participated at the European project DISPOWER and the IEA PVPS Task III for stand alone systems. Joining EIFER since 2008, he is in charge of regional energy systems, smart grids and access to energy in developing countries. Aside from these, he is a university lecturer on wind energy at the Karlsruhe Institute of Technology (KIT).

Alexandra Linden has been working as an urban/regional planner and consultant for the private and public sector, NGO’s, research institutions and international organizations in Europe, Africa, Asia, and Latin America. Her assignments dealt with urban development, infrastructure and resource management, urban upgrading, institutional capacity building and participation, network development as well as policy advice. She is currently advising the German Federal Ministry for Economic Cooperation and Development, Division 313 “Water, Energy, Urban Development, and Geo Sector”, on international urban development issues in the context of development cooperation on behalf of GIZ (Gesellschaft für Internationale Zusammenarbeit GmbH).

Ms. S.F. Liu is the Deputy Mayor of Kaohsiung City Government, Taiwan. Ms. Liu received her M.S. degree in Environmental Engineering from Oklahoma State University in 1985. She has a wealthy professional knowledge in engineering and management. Ms. Liu is always an advocate of environmental protection, human rights, and democracy. She has an outstanding record in her career of public service. Before she became the Deputy Mayor of Kaohsiung City Government in 2010, she had been designated as many important governmental officials including the Chief Secretary of Executive Yuan of Taiwan Government, Deputy Chief Secretary of President Office of Taiwan, Minister of the Executive Yuan of Taiwan Government, and Director of Environmental Protection Agency of Taipei City Government. Ms. Liu is the recipient of many governmental awards including the distinguished governmental official award and outstanding governmental employee medal.

Ralf Löser received an engineer degree in forestry from the Technical University Dresden, Germany, as well as a certificate as waste engineer. He is specialized in modelling of environmental topics. He works as scientific co-worker in the Department of Environmental Remediation Concepts at the C&E Consulting und Engineering GmbH in Chemnitz.

Darryl Low Choy is Professor of environmental and landscape planning in the School of Environment, Griffith University, Australia. His current research is focused on values-led planning and indigenous landscape values, resilience of peri-urban landscapes and climate change adaptation for human settlements.

Ulrich Mans has a background in International Development Studies and is currently working on his Ph.D. for the University of Amsterdam. His research focuses on the role of renewable energy in emerging market cities. Part of this work analyses the participation of the private sector (the green energy business) in urban energy transitions towards carbon-neutral cities.

Julia Marton-Lefèvre has been director general of IUCN (International Union for Conservation of Nature) since January 2007. Prior to this position, she was rector of the University for Peace, executive director of LEAD International and executive director of the International Council for Science. She is a member of several boards in the fields of environment, development, science and international cooperation. In 1999, she received the AAAS Award for International Cooperation in Science. In 2008, she was made “Chevalier de l’Ordre national de la Légion d’Honneur” by the French Government and was named Global Ambassador for Hungarian Culture. She is a fellow of the Royal Geographical Society of the United Kingdom and a fellow of the World Academy of Art and Science. She studied history, ecology and environmental planning in the USA and France.

Supriya Mathew is a PhD student in the Department of Environment and Geography, Macquarie University, Sydney. She also works with researchers in the sustainable ecosystems group of CSIRO, Australia. Her current research focus is in developing an adaptation decision framework for local governments.

Dafne Mazo Bachelor of Environmental Sciences by León University (Spain) with master's degree on "Ecotechnology and Sustainable Development" by Mid Sweden University (Sweden). She is currently project assistant in the non-profit SME Ecoinstitut Barcelona, giving environmental advice for green purchasing and sustainable public procurement to public administrations. But she is mainly taking part in various 7th FP European projects such as the EUPOPP "Policies to promote Sustainable Consumption Patterns", which analyses public policies for sustainable consumption and the efficiency in consumption patterns and the environmental impact of these, and SPREAD Sustainable Lifestyles 2050 "Social Platform Identifying Research and Policy Needs for Sustainable Lifestyles", which aims to develop a vision for sustainable lifestyle models of the future by means of mobilizing existing and available knowledge, experiences, best practices and new models for sustainable lifestyles and by creating a social platform.

Darryn McEvoy is a qualified geographer, with an interest in interdisciplinary 'solutions-oriented' action research. In his early research career, the primary research focus was on the decarbonisation, urbanization and sustainable development agendas. Since 2003, he has increasingly specialized in issues related to climate risks, vulnerability, adaptation and the building of local adaptive capacity. Since July 2009, his role has been as leader of the Climate Change Adaptation Program (CCAP), Global Cities Research Institute, RMIT University, as well as acting as deputy director for the Victorian Climate Change Adaptation Research Centre. His current research and leadership activity is multidisciplinary and multi-institutional, with interests crossing local, regional, national and international scales.

Philipp Meidl is a research engineer at EIFER with expertise in Smart Grid, distributed energy and the prediction of thermal and electrical loads. He has experience in projects about the potential of district heating using large-scale CHP units in Great Britain, funded by the ETI, and a fundamental research project about the acceptance of home owners, landlords and tenants to join a micro-district heating network or share one common heating system.

Nidhi Mittal is working as the climate change adaptation adviser in the Humanitarian Policy Team in Save the Children UK. She supports global climate change adaptation policy, programmes and advocacy. Her policy and research interests include a focus on adaptive capacity, resilient livelihoods, vulnerability and equity and urban resilience.

Marcus Moench is president of ISET. Dr. Moench has extensive experience working with communities, non-government, government and international organizations on climate, water, energy and urban issues in South Asia, the Middle East and the Western United States. He combines a strong technical background with training and experience in the design and initiation of management institutions. Dr. Moench received his Ph.D. from the University of California at Berkeley in 1989. He has published numerous articles and papers.

Philip Monaghan is a recognized writer, speaker, strategist and change manager in the fields of economic development and sustainability. He is acclaimed author of

'Hard to Make, Hard to Break' (2012) and 'Sustainability in Austerity' (2010). In April 2011, 'Sustainability in Austerity' was named as one of the 'The 2010 Top 40 Sustainability Books' by the University of Cambridge Programme for Sustainability Leadership.

Daniel Morchain has an M.Sc. in Environmental Management and Policy from Lund University's IIIIEE and has completed postgraduate courses on climate change adaptation at the UN University in Tokyo. Daniel's focus of research has been on adaptation of European and Asian cities to climate change and to other environmental and socio-economic pressures. He has led and collaborated in writing reports on the issues of climate change adaptation, resilience and disaster risk that have been published by the EEA, the ETC/ACC (now ETC/CCA), the Council of Europe and the Committee of the Regions. Before joining SEI Daniel was working with ICLEI – Local Governments for Sustainability.

Dr. Carlos Afonso Nobre has a Ph.D. in Meteorology from Massachusetts Institute of Technology. He is a professor and senior researcher at Center for Earth System Science (CSST) from National Institute for Space Research (INPE).

Marta Olazabal is researcher in the Unit of Environment of Tecnalia from 2006 where she has been actively participating in diverse local and European projects related to environmental management and spatial planning. She gained an M.Sc. on environmental engineering (2007) at the School of Engineering of Bilbao (Spain) where she originally studied Chemical Engineering from 1999 to 2004. After graduation, a 2-year abroad training scholarship allowed her to undertake scientific stays in Germany and The Netherlands. Marta is also developing her PhD thesis in the Department of Land Economy of the University of Cambridge (UK). Her main fields of interest and research are in relation to sustainable spatial planning, urban ecological services and urban resilience and adaptation to climate change.

Konrad Otto-Zimmermann is the Secretary General of ICLEI – Local Governments for Sustainability. He holds Masters' Degrees in Architecture & Urban Planning and in Public Administration. He has held positions in national and local governments as well as an inter-municipal consultancy. He is a Member of the World Economic Forum's Global Agenda Council on Infrastructure and Urban Development, the German Association of Town and Regional Planners and the German Environmental Law Society. Mr. Otto-Zimmermann is the initiator and Chair of the 'Resilient Cities' global forum on urban resilience and cities' adaptation to climate change.

Jon Padgham is the Director of the International START Secretariat's vulnerability and adaptation programme. START's V&A programmes includes climate change and Asian coastal megacities; biodiversity conservation in East Africa; global environmental change, agriculture and food security in Sub-Saharan Africa; and climate change and urban and peri-urban agriculture in Africa and South Asia. Prior to joining START in 2008, Jon worked at the World Bank and USAID. He holds a PhD in soil science from Cornell University, USA.

Yong-Ha Park received a Ph.D. in Plant Pathology and Microbiology. He works as a Chief Research Fellow in the Korea Environment Institute.

Florian Rapp is working as researcher and urbanist since 2007 at EIFER in the field of integrated urban planning and sustainable development (Energy in Urban Context). His main working fields are the conceptualization of energy concepts for cities and quarters in Europe and Asia. He has several experiences in urban design and master planning, for example, in India, Ethiopia and Latin America. As an architect and urban planner, he held seminars at the Karlsruhe Institute of Technology (KIT) at the Institute of Urban and Regional Planning since his graduation in 2005.

Christoph Rat-Fischer is a researcher at EIFER since 2010 and actually project manager of a 'smart city' research and survey project. He studied politics at 'Sciences Po' in Strasbourg; then, he was in charge of the European Affairs for the city of Mulhouse (France) with a major focus on climate policies, to which he was introduced during his internship at the city of Freiburg im Breisgau (Germany). He is focusing at EIFER on urban systems and municipal climate policies.

Andrea Rau is a certified landscape planner and has worked as a pilot project coordinator and research assistant on the Moroccan-German BMBF research project *Urban Agriculture as an Integrative Factor of Climate-Optimised Development, Casablanca, Morocco*, at the TU Berlin. She finished her studies in 2006 at the Leibniz Universität Hannover. She also studied in Jerusalem and at the Norwegian University of Life Sciences (UMB) in Norway. She gained her scientific experience from her work at the TU München as a teaching assistant and a research assistant. She also worked at the Leibniz Universität Hannover as a research assistant and is a qualified gardener as a result of a 2-year apprenticeship at a nursery.

Christopher Rollo currently serves as the officer in charge and knowledge management specialist of the Philippine Country Office of the United Nations Human Settlements Programme (UN-Habitat). He developed and led the implementation of the knowledge management framework of the agency as well as the climate change project in partnership with the City of Sorsogon, the Department of Interior and Local Government and the Housing and Urban Development Coordinating Council. Mr. Rollo studied business management, economics and law.

Peter Rooney has an M.Eng. in civil engineering and is a member of the UK Institution of Civil Engineers (MICE). He is a senior technical expert and procurement specialist at KfW Development Bank in Germany, where he is responsible for a range of transportation and other civil infrastructure projects in Asia and Latin America.

Priscilla Rowswell currently holds the position of professional officer within the Adaptation Workstream, Energy and Climate Change at ICLEI Africa. She began her career with ICLEI Africa in February 2010 after graduating from the University of Cape Town with BSc Honours in atmospheric science at the end of 2009. Her thesis research was analysing and calculating South African seasonal forecast skill and comparing it to the respective observed seasonal rainfall for South Africa.

Marcello Sano is a Postdoctoral Research Fellow at Griffith Centre for Coastal Management, Griffith University, Australia. He holds a PhD from the University of Cantabria, Spain, and a combined BSc/MSc in marine environmental science from the University of Genova, Italy. His current research interests include coastal policy analysis, complex systems thinking and climate change adaptation.

Giulia Sateriale works with Indica Srl as an expert in climate change policies for several projects including the support of carbon neutral processes for both public administrations and private companies and LIFE projects. She graduated with an M.Sc. in Environmental Policy and Regulation at London School of Economics and Political Science in 2008.

Ulrike Schinkel is a research associate engaged in the *Megacity Research Project TP. Ho Chi Minh*, based at the Brandenburg University of Technology Cottbus (BTU), funded by the German Ministry for Education and Research (BMBF). Within the project, she is responsible for the work package *Liveable City HCMC – Urban Regeneration and Community-Based Adaptation*; her work mainly focuses on social vulnerability assessments, structural climate change adaptation measures on the neighbourhood level, capacity building among relevant stakeholders, community action planning and consultancy services for local government institutions.

J. Alexander Schmidt studied architecture, city planning and urban design and environmental psychology at the University of Stuttgart, Germany. He graduated at the University of California, Berkeley, USA, (M.Arch.) and received his Ph.D. from the University of Stuttgart. He is the chair of city planning and urban design, Department of Building Sciences, Faculty of Engineering Sciences, University of Duisburg-Essen and speaker of the university's joint centre "Urban Systems". He is the co-principal in urban design firm working in the fields of urban development, urban design and open space design. His key research areas include urban energy efficiency, city and climate change, city and health, city and beauty and urban infrastructure.

Petra Schneider received a PhD in hydrogeology from the Mining Academy in Freiberg, Germany. She has a long-term experience in the field of environmental assessment, analysis and planning. She works as chief of the Department of Environmental Remediation Concepts at the C&E Consulting und Engineering GmbH in Chemnitz.

Christian Schönhofen, M.Phil., M.Sc., works as a project manager in the Transport and Communication Asia Team of KfW in Frankfurt. His projects include rural and urban transport infrastructure projects of the German Development Cooperation with Bangladesh, Laos, Indonesia, and Timor-Leste. He started working for KfW in 2007. Before that he did post-graduate training and research at the German Development Institute in Bonn. His academic background is economics and philosophy, which he read in Bayreuth, London, and Cambridge.

Engelbert Schramm is a co-founder of ISOE and head of the research unit Water Infrastructure and Risk Analyses. He studied biology, chemistry and education at Goethe University, Frankfurt am Main. Engelbert Schramm received his doctorate in 1995 from Darmstadt Technical University, with a thesis on the history of the concept of circulation. His research focuses on sustainable resource management, support research and regional sustainability.

Dr. Michael Schwarz, Sociologist, is a scientific co-worker at Sozialforschungsstelle Dortmund (Center for Social Research) at the Technical University Dortmund/Germany, Research department “Learning Organizations and Networks.” His major fields of work include organizational research and consulting, network management, sustainable development, climate change, and social innovations.

Silvia Serrao-Neumann is a Research Fellow in the Urban Research Program, Griffith University, Brisbane, Queensland. She is currently involved in the South East Queensland Climate Adaptation Research Initiative. Her role is the investigation of climate adaptation related to human settlements in South East Queensland, particularly focused on urban planning and management.

Jiyoung Shin received a Ph.D. in Engineering (Environment and Landscape Planning). Currently, she works as a senior researcher at Korea Adaptation Center for Climate Change in Korea Environment Institute. She is now coordinating and supporting local government’s adaptation planning.

Purnomo Sidi (Mr) currently works with the Indonesia-Germany Cooperation Programme Policy Advice on Environment and Climate Change being responsible for the development of an integrated climate change strategy for several cities on Java focusing on adaptation.

Andrés Simón-Moral is researcher in the Unit of Environment of Tecnalia from 2008, where he focuses on urban air quality and climate. He has studied physical science at the Complutense University of Madrid, focusing on atmospheric physics from 2000 to 2007. After graduation, he has gained an M.Sc. on climatic risks and environmental evaluation (2008) and an M.Sc. on climatic sciences (2010). Nowadays, he is developing a Ph.D. thesis in Tecnalia, with the collaboration of the CIEMAT (Spain). His main fields of interest are air quality and climate in general, with special focus on the urban scale.

Richard Simpson leads the urban research team of the Capacity Center in the ICLEI World Secretariat. Previously he worked as a researcher at the Urban Age programme at the London School of Economics. Richard holds an M.Sc. in Human Geography Research and in Cities, Space and Society from the London School of Economics, and a B.Sc. (hons) degree in Environment and Development from the University of Durham, UK.

Bach Tan Sinh is the director of the Department of Science and Technology Human Resource Policy and Organization, National Institute for Science and Technology Policy and Strategic Studies – a policy advisory institution to the Ministry of Science and Technology. He has more than 20 years’ experience on policy analysis and

governance in science, technology, environment and development in Vietnam. He has currently coordinated research for the Asian City Climate Change Resilience Network supported by Rockefeller Foundation. Dr. Sinh received his Ph.D. in environmental social science at Aalborg University, Denmark, in 1998. He was awarded as Fulbright postdoctoral visiting Scholar at University of California, Berkeley, during 1999–2000.

Dr. Wendy Steele is a research fellow co-located within the Urban Research Program and Climate Change Response Program at Griffith University, Australia. Her current research focuses on urban governance, policy and planning in climate change with an emphasis on issues of justice and security.

Dr. Harry Storch is a senior researcher at the Department of Environmental Planning at the Brandenburg University of Technology Cottbus, Germany, since 2008. He is scientific coordinator of the Action Field ‘Urban Environment’ and co-leader of the work package ‘Adaptation Planning Framework’ within the ‘Megacity Research Project TP. Ho Chi Minh: Integrative Urban and Environmental Adaptation Planning Framework’, funded by the German Federal Ministry of Research and Education (BMBF). Additionally, he acted as coordinator of the MSc. Programme ‘Urban Development Planning’ at the Vietnamese-German University in Ho Chi Minh City from December 2009 to April 2010 and from November 2010 to March 2011.

Professor John Sweeney has been a lecturer at the Geography Department NUI Maynooth since 1978. He received a First Class Honours B.Sc. from the University of Glasgow in 1974 and was awarded a Ph.D. also from Glasgow in 1980. John has taught courses primarily related to climatology, but he has also taught biogeography, geomorphology, and environmental resource management and has taught and researched at a number of universities in North America and Africa. He currently leads a number of nationally funded research projects examining various aspects of climate change in Ireland. As one of the contributing authors and review editors of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), John shared with several hundred other climatologists the 2007 Nobel Peace Prize. John is currently President of An Taisce, the National Trust of Ireland.

Dr. Bao Thanh is Director of the Sub-Institute of Hydrology, Meteorology and Environment (SIHYMETE) of South Vietnam, a sub-institute of the Vietnam Institute of Meteorology, Hydrology and Environment of the Ministry of Natural Resources and Environment in Hanoi explicitly responsible for the coordination of major international research activities in the field of adaptation to climate change within the southern regions of Vietnam.

Ly Khanh Tam Thao is vice chief of the Division of General Planning Management at the Department of Planning and Architecture (DPA) in Ho Chi Minh City, Vietnam. He is also a member of the Ho Chi Minh City Climate Change Steering Group and responsible for the implementation of the Program to Respond to Climate Change within the Department of Planning and Architecture.

Dr. Nguyen Anh Tuan is Head of the Research and Training Division of the Architectural Research Center at the Department of Planning and Architecture (DPA) in Ho Chi Minh City, Vietnam. He is also a member of the Ho Chi Minh City Climate Change Steering Group.

Rafael Tuts is Chief of the Urban Environment and Planning Branch of the United Nations Human Settlements Programme, UN-HABITAT, based in Nairobi. He is responsible for the Cities and Climate Change Initiative, with activities in Africa, Asia and Latin America. He earlier headed the Training and Capacity Building Branch, the Urban Governance Section and the Localizing Agenda 21 Programme of UN-HABITAT. Local government capacity development and environmental planning and management are key focus areas of his work.

Agate Goyarrola Ugalde has a degree in management and business administration UPV/EHU in 2001. Currently, Agate Goyarrola Ugalde is project coordinator of the Technical Secretariat of Udalsarea 21, Basque Network of Municipalities Towards Sustainability. Her principal tasks involve the coordination and management of the services offered under the Network, promoting the implementation of Local Agenda 21 processes and consolidating the Local Action Plans as a integrated management tool of municipal policies for sustainability.

Nguyen Van Phuoc is vice-director of the Department of Natural Resources and Environment (DONRE) in Ho Chi Minh City, Vietnam. DONRE is responsible for the preparation of the Ho Chi Minh City land-use strategy and action plan, reviewing and commenting on all other sectoral and spatial plans for the city with regards to their environmental sustainability and their effectiveness in meeting climate change adaptation requirements.

Carmen Vogt is the Senior Policy Advisor for the Sector Project “Urban Development Policy Advice” with the German Development Cooperation (GIZ). She is coordinating on behalf of BMZ the Cities and Climate Change component of the Urban Sector Programme, including the development of new tools and instruments, and participating actively in international conferences and debates. Besides analysis on urbanization and urban development, her thematic priorities focus on climate-friendly city development, particular in creating “resilient cities” and dealing with “urban vulnerabilities”. She was coordinating several GIZ projects in Latin America (and Asia) in the field of decentralization, urban and municipal development, disaster risk management, and environmental management.

Sylvie Wabbes is one of Food and Agriculture Organization of the UN (FAO) focal person for UNISDR working on food and nutrition security disaster risk reduction and management in the Emergency and Rehabilitation division. She co-leads FAO agriculture and food emergency efforts in urban and peri-urban crisis and has extensive experience in responses to large disasters such as the Indian Ocean tsunami and the Haiti earthquake. She is actively supporting the right to food in humanitarian context, promoting self-reliance and local food systems.

Dipl.-Ing. Christian Walloth studied electrical engineering with focus on renewable and decentralized energies at RWTH Aachen University of technology, which led him to begin his career working for Eurospace, a consultancy to high-tech firms. Before starting his PhD, he worked as senior consultant for Roland Berger Strategy Consultants on various national and international projects during 3 years. In his PhD thesis, he is seeking to combine interdisciplinary and system thinking approaches to facilitate sustainable urban development of Central and Eastern European cities.

Bob Webb is convenor for Integration and Projects with the Climate Change Institute and visiting fellow with the Fenner School of Environment and Society at the Australian National University (ANU), where he has focused on integrated and interdisciplinary approaches to adaptation drawing on local, national and international experience. He joined the ANU in 2009 following senior leadership positions in the private (resource and manufacturing) and public (Australian government) sectors, which included strategy and change management, large-scale program delivery, policy development, economics, finance and investment. He holds a Ph.D. in physics from Sydney University and a Masters in political science and international relations from the ANU.

Monika Wiebusch urban planner by profession, with long-standing experiences in German urban policies and development cooperation in African cities is now working on urban strategies for KfW Entwicklungsbank.

Assoc. Prof. Annemie Wyckmans PhD, is an architect with 13 years of experience in interdisciplinary and cross-institutional project development and research related to zero emission buildings and built environments. She is the head of the international, interdisciplinary MSc programme in Sustainable Architecture at NTNU.

Mr. B.M. Yang is a Ph.D. candidate of the Institute of Environmental Engineering at National Sun Yat-Sen University, Kaohsiung, Taiwan. He received his M.S. degree in Environmental Engineering from Tajen University, Pingtung, Taiwan, in 2007. Mr. Yang has received numerous distinguished research paper awards from the Chinese Environmental Engineering Association. Currently he is working on water and wastewater reclamation projects funded by the Taiwan National Science Council and Taiwan Water Resources Administration, Taiwan Water Treatment.

Dr. Andrea Ferraz Young is an architect and has a Ph.D. in Agriculture Engineering from State University of Campinas. She is a researcher of the Brazilian Network for Climate Change (REDE CLIMA).

Kristina Yuzva graduated with a Bachelor of Science degree from the University of Toronto, focusing on environmental science and biology. After that she obtained a master's degree in Public Administration at Queen's University with main interests in environmental and energy policy. Upon completion of her studies and after doing an internship with the United Nations Volunteers program, Kristina actively took part in the Resilient Cities Congress in 2011 as a congress assistant. Currently, she is working as a research assistant at the United Nations University Institute for Environment and Human Security (UNU-EHS) on the MRF Chair Project on Social Vulnerability.

Monika Zimmermann is Director of the Capacity Center at the World Secretariat of ICLEI – Local Governments for Sustainability dealing with knowledge management, urban research, organization of ICLEI’s global events, and capacity building within the organization and within ICLEI’s membership. Until June 2010, Monika was director of the until then existing International Training Centre (ITC) of ICLEI, based at the European Secretariat in Freiburg, Germany, which she had built up and managed for 18 years. Having done studies in political and administrative sciences and journalism at the universities of Konstanz and Berlin, Germany, Monika holds a master’s degree in Political Science (FU Berlin).

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With 535 participants from 65 countries worldwide, this event far surpassed our expectations, generating significant interest and demonstrating the continued need for such a global platform.

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All of us look forward to continuing the exchange and dialogue at Resilient Cities 2012.

Konrad Otto-Zimmermann
Congress Chair
ICLEI Secretary General

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