

# **Towards a Global Research Agenda on Urban Biodiversity, Ecosystem Services & Design**

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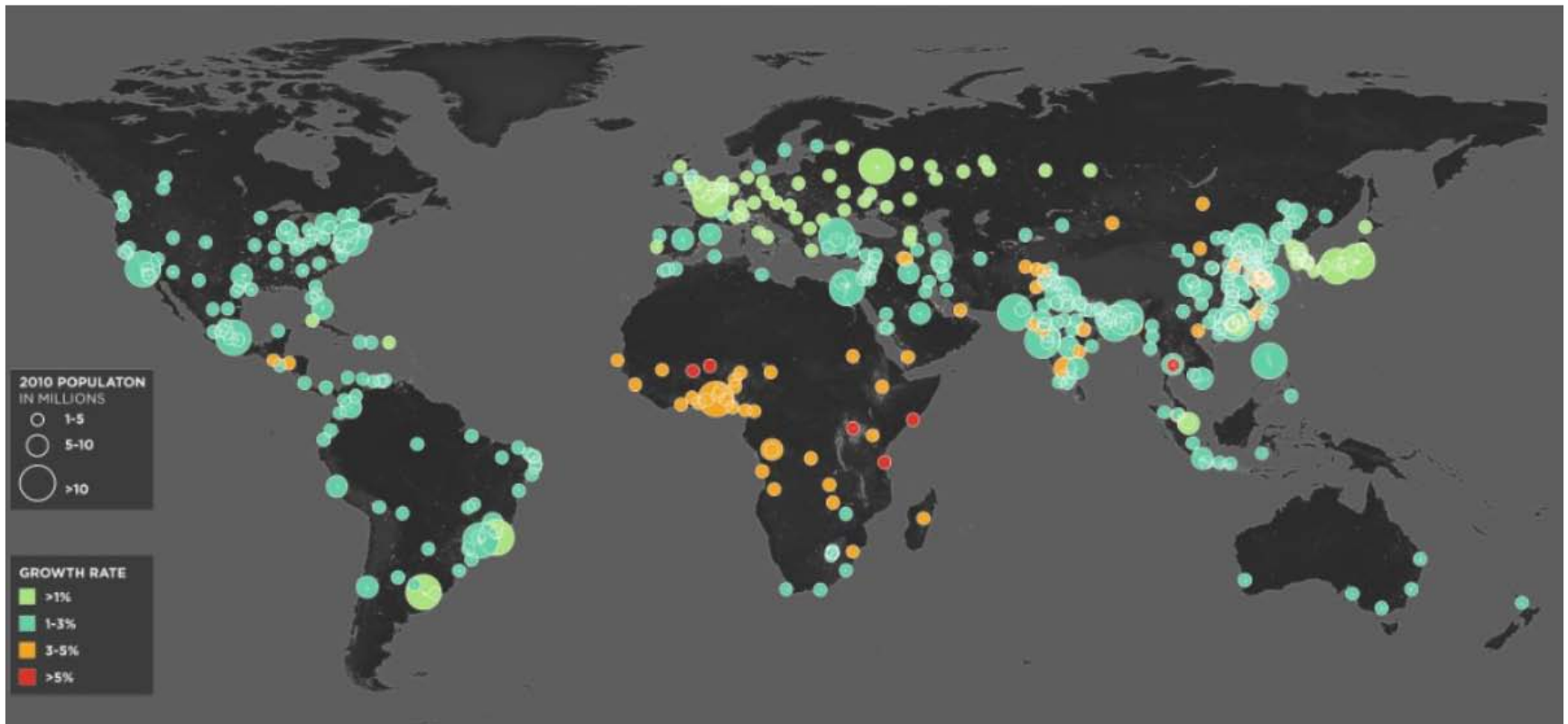
2012



# 1 The Urban Challenge

By 2050 about 6.3 billion people will inhabit the world's cities.  
The largest and fastest period of urban expansion in all of human history.

Urban growth will have significant impacts on biodiversity and ecosystem services that society relies on.



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# Towards a Global Research Agenda on Urban Biodiversity, Ecosystem Services & Design

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1 The Urban Challenge

2 The Consideration within the Convention on Biological Diversity

3 The "Global Partnership on Local and Subnational Action for Biodiversity"

4 Global Research Agenda on Urban Biodiversity, Ecosystem Services & Design

5 Outlook

6 Further Reading and Literature

7 Acknowledgements



“The challenges of urbanization are profound, but so too are the opportunities.





# 1 The Urban Challenge

....Well-designed cities can sustainably accommodate large numbers of people in a relatively small amount of space, offering improved quality of life and allowing for greater resource efficiency and the preservation of larger intact natural areas.”



*Ban Ki-moon  
Secretary-General,  
United Nations*



## 2 Consideration within the Convention on Biological Diversity

Until 2007 the opportunities cities and other local authorities offer in terms of implementation of the Convention on Biological Diversity (CBD) had received little consideration within the CBD.

**Convention on  
Biological Diversity**

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**Convention**

About the Convention

Introduction

Text of the Convention

History

Sustaining Life on Earth

Strategic Plan

UN Decade for Biodiversity

International Day of Biodiversity

**Thematic Programmes**

Agricultural Biodiversity

Dry and Sub-humid Land Biodiversity

Forest Biodiversity

Inland Waters Biodiversity

Island Biodiversity

Marine and Coastal Biodiversity

Mountain Biodiversity

**Major Groups**

Local Authorities

Parliamentarians

Business

Universities and the Scientific Community

Children & Youth

The Green Wave for Schools

Non-Governmental Organizations (NGOs)

**Cross-Cutting Issues**

Biological and Cultural Diversity

Biodiversity for Development

Climate Change and Biodiversity

Communication, Education and Public Awareness

Economics, Trade and Incentive Measures

Ecosystem Approach

Gender and Biodiversity

Global Strategy for Plant Conservation

Global Taxonomy Initiative

Health & Biodiversity

Impact Assessment

Identification, Monitoring, Indicators and Assessments

Invasive Alien Species

Liability and Redress - Article 14.2

Protected Areas

Sustainable Use of Biodiversity

Technology Transfer and Cooperation

Tourism and Biodiversity

Traditional Knowledge, Innovations and Practices - Article 8(j)

New & Emerging Issues



**What is the Convention?**

Signed by 150 government leaders at the 1992 Rio Earth Summit, the Convention on Biological Diversity is dedicated to



## 2 Consideration within the Convention on Biological Diversity

March 2007 Curitiba, Brazil – “Mayors meeting on the contribution of cities to the achievement of the 2010 Biodiversity Target” initiates the “Global Partnership on Cities and Biodiversity” (today “**Global Partnership on Local and Subnational Action for Biodiversity**”) and the **Mayor Group “Local Authorities”** within the CBD

„The battle for life on earth will be won or lost in cities“

*Dr. Ahmed Djoglaf  
(Executive Secretary  
CBD, left image)*

„Cities are not the problem, they are the solution“

*Dr. Jaime Lerner  
(Mayor of Curitiba)*



## 2 Consideration within the Convention on Biological Diversity

COP 9 Bonn (Germany) 2008 - **Decision IX/28**  
„Cities and Biodiversity“

*...encourages the 191 parties to recognize the role of cities in national strategies...and invites parties to support cities in implementing the Convention at the local level.*



ONE NATURE • ONE WORLD • OUR FUTURE  
COP 9 MOP 4 Bonn Germany 2008

Two side events

- Mayors Conference on “Local Action for Biodiversity” and adoption of the “Bonn Call for Action”
- 1. International Conference on “Urban Biodiversity and Design” in Erfurt (Germany) with the Erfurt Declaration URBIO 2008



## 2 Consideration within the Convention on Biological Diversity

COP 10 Nagoya Japan) - **Decision X/2**  
Aichi Biodiversity Targets



 > [Convention](#) > [Strategic Plan 2011-2020](#) > [Aichi-Targets](#)

### Aichi Biodiversity Targets

- **Strategic Goal A:** Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
- **Strategic Goal B:** Reduce the direct pressures on biodiversity and promote sustainable use
- **Strategic Goal C:** To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- **Strategic Goal D:** Enhance the benefits to all from biodiversity and ecosystem services
- **Strategic Goal E:** Enhance implementation through participatory planning.



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## 2 Consideration within the Convention on Biological Diversity

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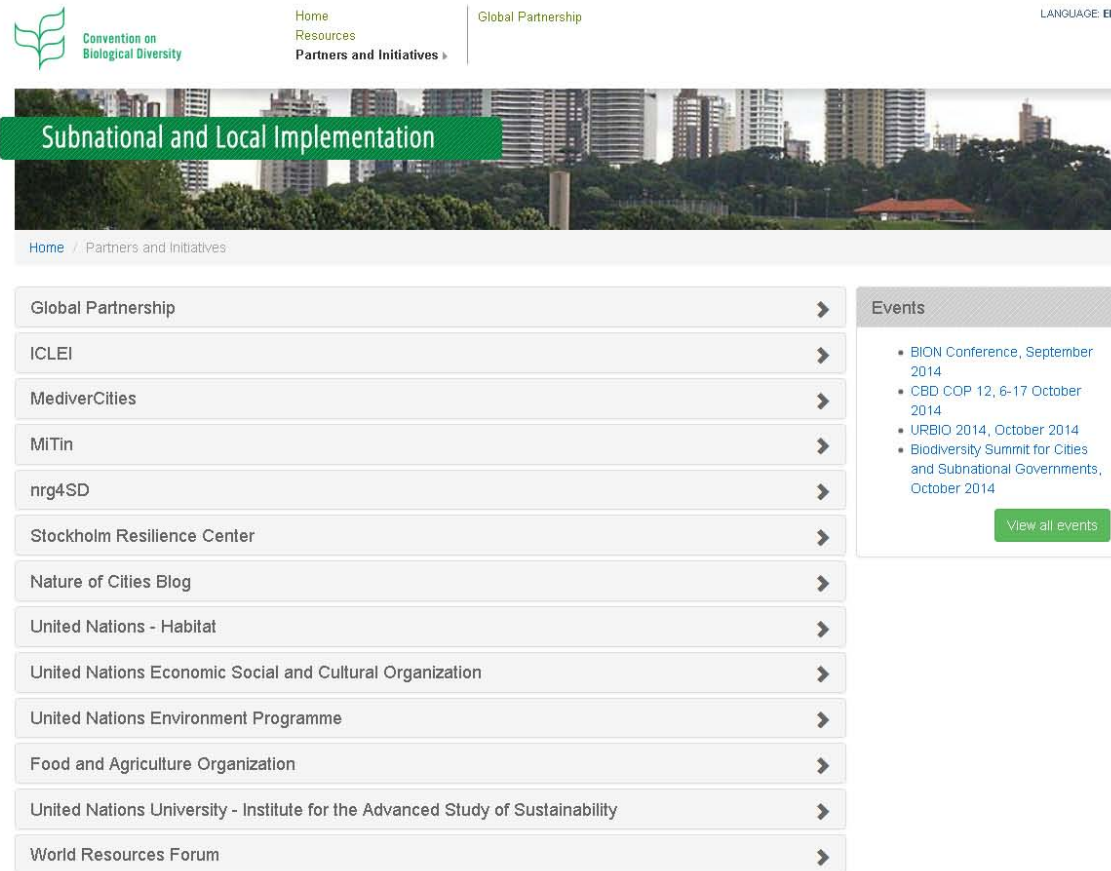
COP 10 Nagoya (Japan) - **Decision X/22**

"Plan of Action on Sub-National Governments, Cities and Other Local Authorities for Biodiversity 2011-2020"

The "Plan of Action" laid out options for national governments and their partners in supporting and promoting the subnational implementation of the Aichi Targets and a further development of the "**Global Partnership on Local and Subnational Action for Biodiversity**".

## 2 Consideration within the Convention on Biological Diversity

Today the “Global Partnership on Local and Subnational Action for Biodiversity”



The screenshot shows the website of the Convention on Biological Diversity. The header includes the logo, navigation links (Home, Resources, Global Partnership), and a language selector (EN). A banner image of a city skyline is displayed with the text "Subnational and Local Implementation". Below the banner, a list of partners and initiatives is shown, including Global Partnership, ICLEI, MediverCities, MITin, nrg4SD, Stockholm Resilience Center, Nature of Cities Blog, United Nations - Habitat, United Nations Economic Social and Cultural Organization, United Nations Environment Programme, Food and Agriculture Organization, United Nations University - Institute for the Advanced Study of Sustainability, and World Resources Forum. A sidebar on the right lists events such as BION Conference, September 2014, CBD COP 12, 6-17 October 2014, URBIO 2014, October 2014, and Biodiversity Summit for Cities and Subnational Governments, October 2014, with a "View all events" button.

Convention on Biological Diversity

Home  
Resources  
Partners and Initiatives »

Global Partnership

LANGUAGE: EN

Subnational and Local Implementation

Home / Partners and Initiatives

Global Partnership >

ICLEI >

MediverCities >

MITin >

nrg4SD >

Stockholm Resilience Center >

Nature of Cities Blog >

United Nations - Habitat >

United Nations Economic Social and Cultural Organization >

United Nations Environment Programme >

Food and Agriculture Organization >

United Nations University - Institute for the Advanced Study of Sustainability >

World Resources Forum >

Events

- BION Conference, September 2014
- CBD COP 12, 6-17 October 2014
- URBIO 2014, October 2014
- Biodiversity Summit for Cities and Subnational Governments, October 2014

View all events

Partners and Initiatives



## 3 Partners and instruments of the “Global Partnership....”

### 3.1 ICLEI







## 3 Partners and instruments of the “Global Partnership....”

### 3.1 ICLEI & IUCN Program – Local Action for Biodiversity Program (LAB)

Since 2006 almost 30 cities build a worldwide network of best practise exchange



LOCAL ACTION FOR BIODIVERSITY

HOME

ABOUT LAB

PROJECT TEAM

ADVISORY COMMITTEE

PARTNERS & ASSOCIATES

PARTICIPANTS

### Local Action for Biodiversity

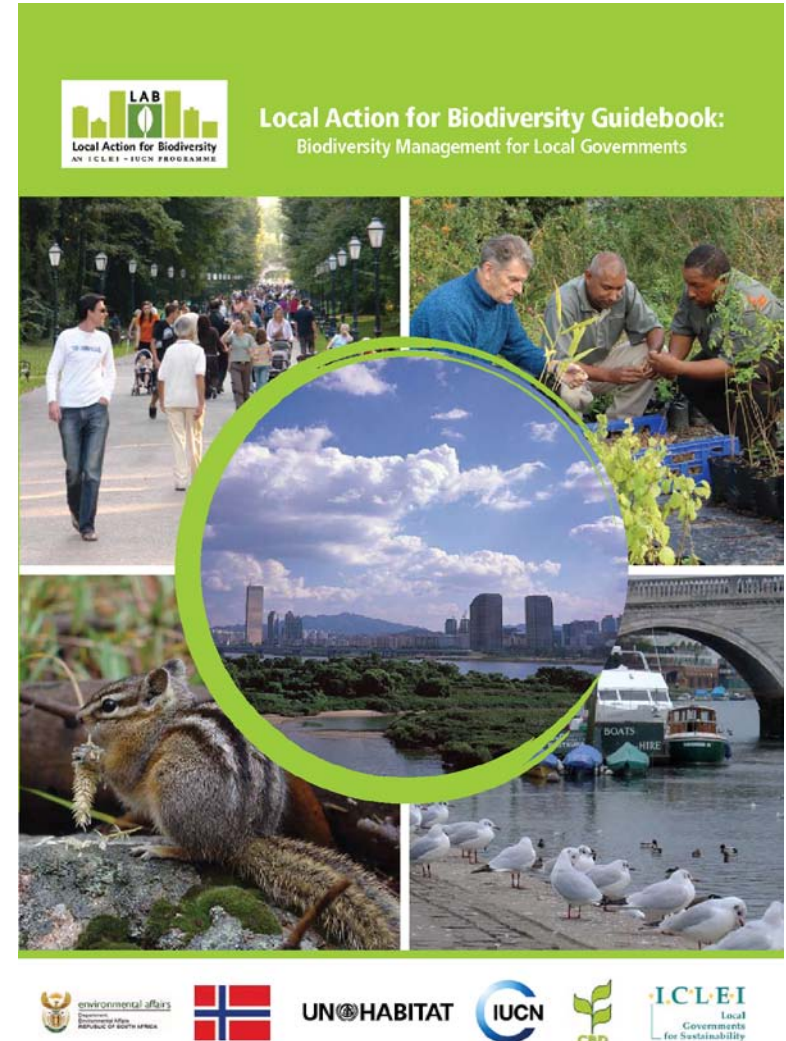
Local Action for Biodiversity (LAB) is a global urban biodiversity programme coordinated by ICLEI – Local Governments for Sustainability. The LAB Pioneer WorkNet began in 2006 with a select group of local and regional authorities from around the world, representing over 54 million citizens. Referred to as the 'LAB Pioneers', these local authorities are currently international leaders in managing and conserving biodiversity at the local level.

# 3 Partners and instruments of the “Global Partnership....”

## 3.1 ICLEI & IUCN Program - Local Action for Biodiversity Program (LAB)

This flagship program is the key contributor and driving force of the „Global Partnership“.

- Branched in thematic streams
- and published in 2010 the Guidebook documenting cities contributions to biodiversity conservation







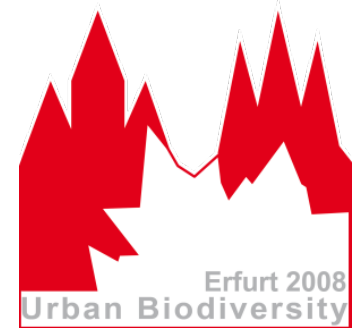
# 3 Partners and instruments of the “Global Partnership....”

## 3.2 URBIO network and scientific conferences

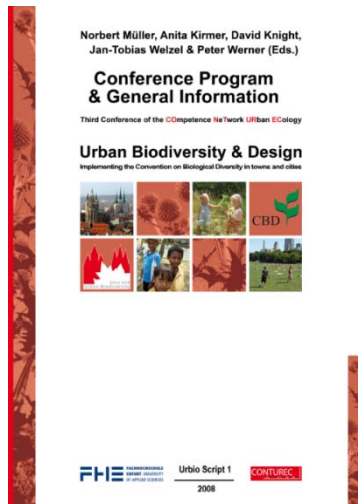
1. Conference in Erfurt (Germany) in May 2010 during COP 9 with the Erfurt Declaration URBIO 2008

Main theme:

**"Implementing the Convention on Biological Diversity in Towns and Cities"**



Foundation of the network



# 3 Partners and instruments of the “Global Partnership....”

## 3.2 URBIO network and scientific conferences

2. Conference in Nagoya (Japan) May 2010 prior to COP 10 with the Nagoya URBIO 2010 Declaration

Main theme:

**"Urban Biodiversity in the Ecological Network"**



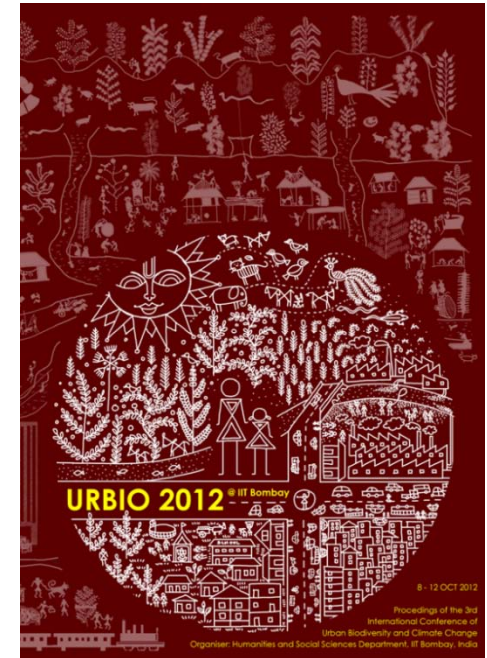
# 3 Partners and instruments of the “Global Partnership....”

## 3.2 URBIO network and scientific conferences

3. Conference in Mumbai (India) October 2010 during COP 11 with the Mumbai URBIO 2012 Declaration

Main theme:

**"Urban Biodiversity and Climate Change:  
Adaptation and Mitigation"**





# 3 Partners and instruments of the “Global Partnership....”

## 3.2 URBIO network and scientific conferences

### 4. Conference in Incheon (Korea) October 2014 during COP 12 with the Incheon URBIO 2014 Declaration

Main theme:

**"Cities and Water – Conservation, Restoration and Biodiversity"**

The graphic features a stylized globe with a city skyline on top, surrounded by greenery and water. A blue banner at the top contains the text "URBIO 2014". Below the banner, the text reads: "The 4th international conference of Urban Biodiversity and Design", "October 9 (Thu.) ~ 12 (Sun.), 2014", "Incheon City, Republic of Korea", and "Theme : 'Cities and Water' Conservation, Restoration and Biodiversity". A small inset photo shows a group of people at a conference, with the caption "URBIO 2012, Mumbai, India".

**URBIO 2014**

The 4th international conference of  
**Urban Biodiversity and Design**

October 9 (Thu.) ~ 12 (Sun.), 2014  
Incheon City, Republic of Korea

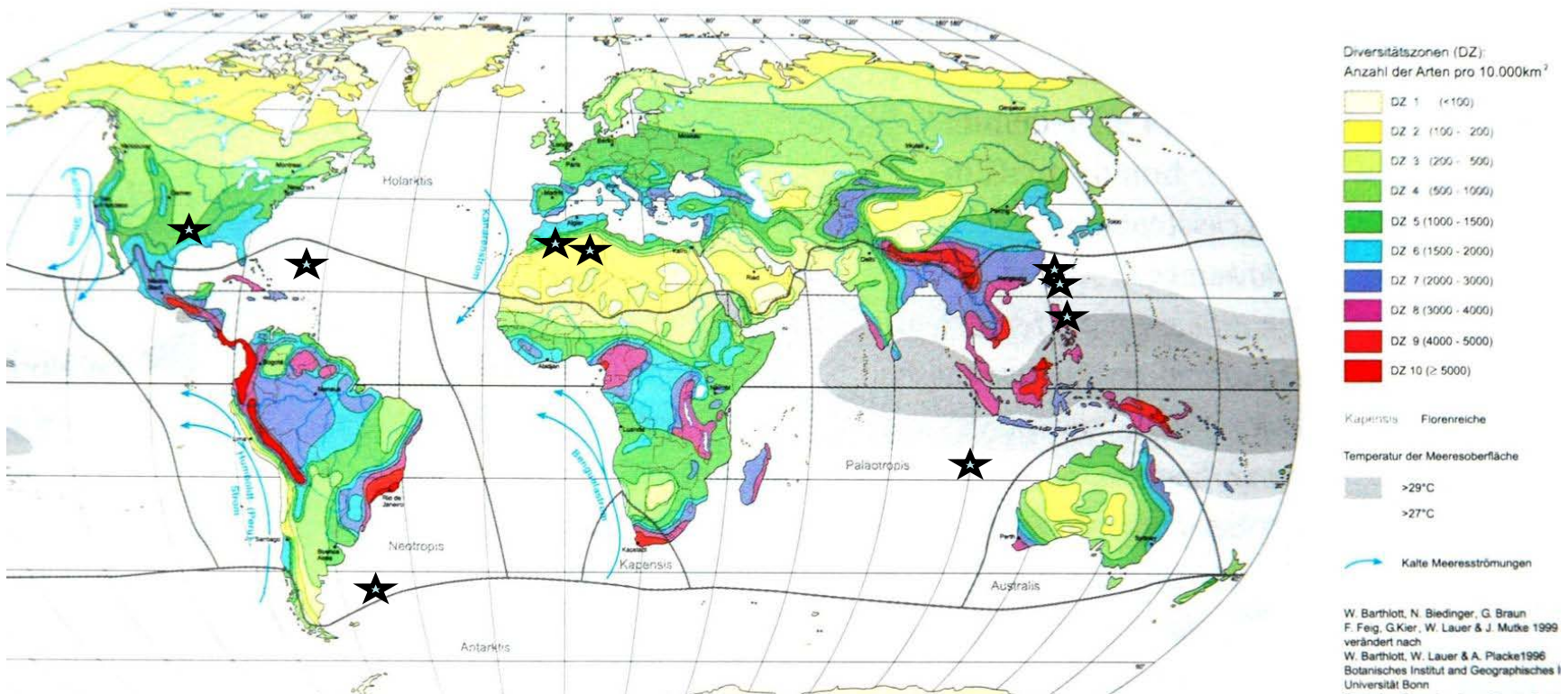
**Theme : "Cities and Water"**  
Conservation, Restoration and Biodiversity

URBIO 2012, Mumbai, India

# 3 Partners and instruments of the “Global Partnership....”

## 3.3 The “Singapore Index” (or City Biodiversity Index)

Self assessment tool to measure biodiversity, ecological footprint and biodiversity efforts in cities to achieve the 3 goals of the Convention  
Currently – already over 40 cities are test bedding

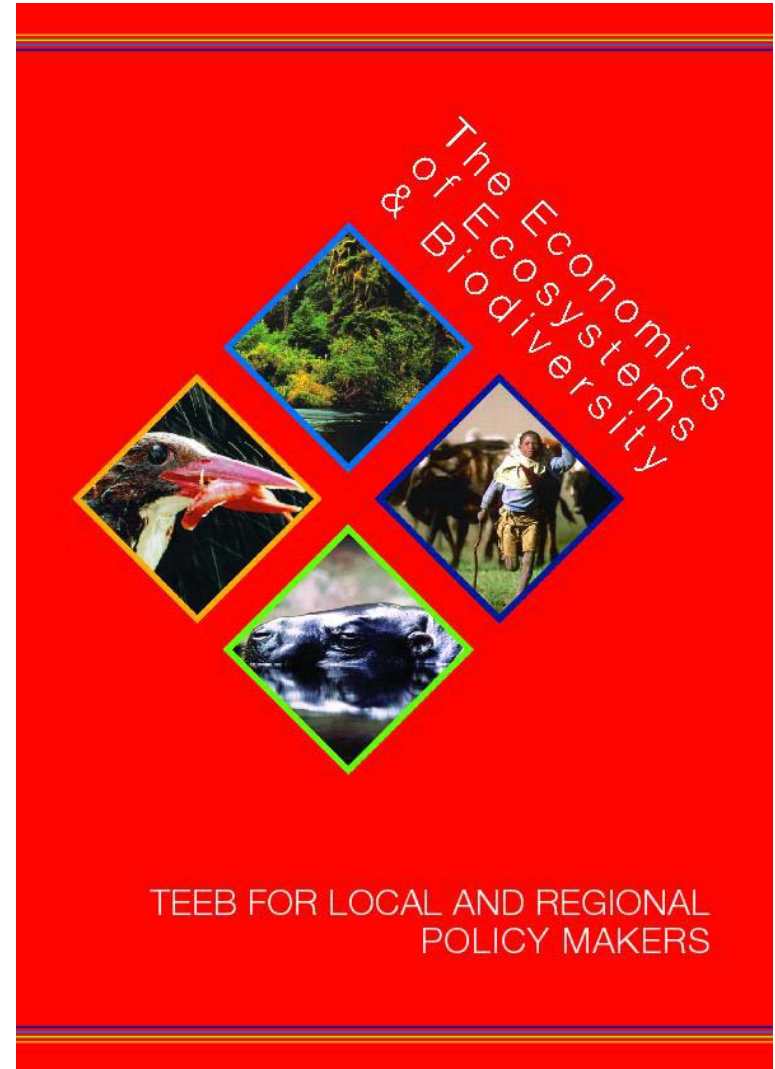


★ Results currently available from Edmonton, Montreal, Curitiba, Hamilton, Brussel, Singapore and numerous Japanese cities

# 3 Partners and instruments of the “Global Partnership....”

## 3.4 TEEB – The Economics of Ecosystems and Biodiversity

Within TEEB the special volume “TEEB for Local and Regional Policy Makers” were published to support subnational and local authorities (TEEB 2010)



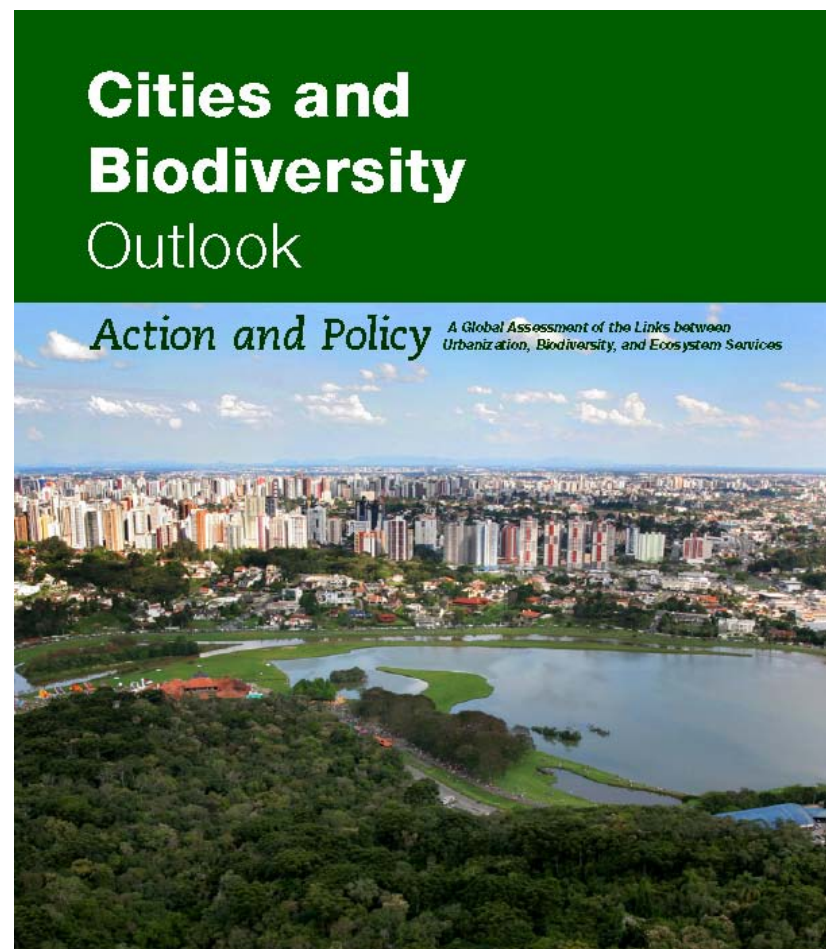


## 4 Partners and instruments of the “Global Partnership....”

### 3.5 CBO – Cities and Biodiversity Outlook

The “Cities and Biodiversity Outlook” (CBO) is the first global assessment of the links between urbanization, biodiversity and ecosystem services

Part I provides the summary of the assessment



Stockholm Resilience Centre  
SEARCH FOR RESILIENCE IN URBAN ECOSYSTEMS

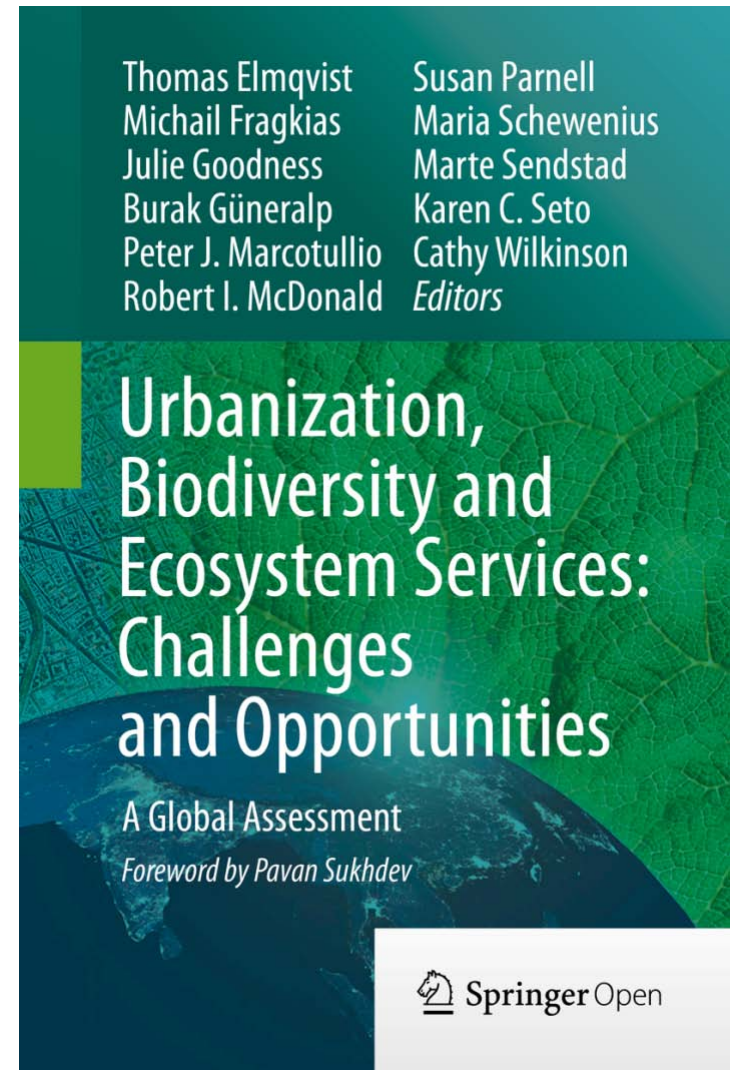


## 3 Partners and instruments of the “Global Partnership....”

### 3.5 CBO – Cities and biodiversity Outlook

Part II of the CBO – is a more detailed scientific analysis and assessment.

Besides 15 principle papers it provides 18 regional and local case study assessments.



# 3 Partners and instruments of the “Global Partnership....”

## 3.6 "The Nature of Cities" Blog



**A collective forum on cities as ecosystems, as designed and natural human habitat intimately connected to resilience, sustainability, and livability.**

### RECENT ROUNDTABLES

How much should we worry about exotic species in urban zones? How do we reduce damage from exotic invasives when management resources are limited? Are there conflicts between management or eradication efforts and building general support for urban biodiversity? 24 Comment[s]

Environmental education in cities focuses on youth and community development, restoring ecosystems, building green infrastructure, and more. But is urban environmental education really anything new? What should its goals and practices look like? 21 Comment[s]

A Sustainable Development Goal (SDG) on Cities and Human Settlements is competing for a place among the final United Nations SDGs that will be approved



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## Untapping the Potential of Science-Government Partnerships to Benefit Urban Nature

Posted on August 31, 2014 by Chris Ives and Yvonne Lynch

Promoting urban nature is a significant challenge for local governments. As demonstrated by so many posts on this blog, it is evident that it consists of much more than simply protecting areas of high biodiversity from human activity; it is about enhancing and even creating novel forms of 'nature' to promote the environmental and social sustainability of cities for decades to come. Such a task is unparalleled in its complexity and requires new knowledge to be achieved. This challenge calls for a close and effective interaction between science and governance. However, all too often, the potential for collaboration between local government and academic researchers to co-produce knowledge and develop policy and programs that benefit urban nature remains unexplored. In this post, we outline some of the lessons learnt from our individual experiences working in research and government in Melbourne and provide a series of tips to help others harness the potential of local government-science partnerships.

The need for science to be applied through practice is not a new concept in the academic literature on biodiversity and conservation. Much has been written on the science-policy interface and the need for 'actionable science' (see McNie, 2007; Palmer, 2012). Indeed, without good research, practice can be ineffective, inappropriate and unjustified; without an understanding of practice, research can be irrelevant. However, despite the obvious benefits of interaction, the

2 Comments  
Join our conversation



**About the Writer:**  
Chris Ives

Chris Ives takes an interdisciplinary approach to studying the ecological and social dynamics of cities and is part of the National Environmental Research Program: an Australian Government initiative to support environmental decision-making and provide research relevant to policy applications. He lives in Melbourne.

Mail

Web

More Posts



# 3 Partners and instruments of the “Global Partnership....”

## 3.7 URBES - Urban Biodiversity and Ecosystem Services

Research project (2012 -2014) aims to bridge the knowledge gap on the links between urbanization, ecosystem services and biodiversity

Case studies of 6 European cities and New York and 11 leading research institutes on social-ecological studies in Europe and USA



**Tweets**

**URBESproject** @URBESproject  
Become a citizen blogger for our synergy project ARTS! See bottom-left on: [acceleratingtransitions.eu](http://acceleratingtransitions.eu) #BiodiverCity @ICLEI\_Europe @drifteur

**URBESproject** @URBESproject  
The second URBES video is now out! Visit city of Barcelona - embracing the vision of greener future. [youtube.com/watch?v=ImWL3B...](https://youtube.com/watch?v=ImWL3B...) @IUCN

**URBESproject** @URBESproject  
Insights from last week's activities in Bonn

Tweet to @URBESproject

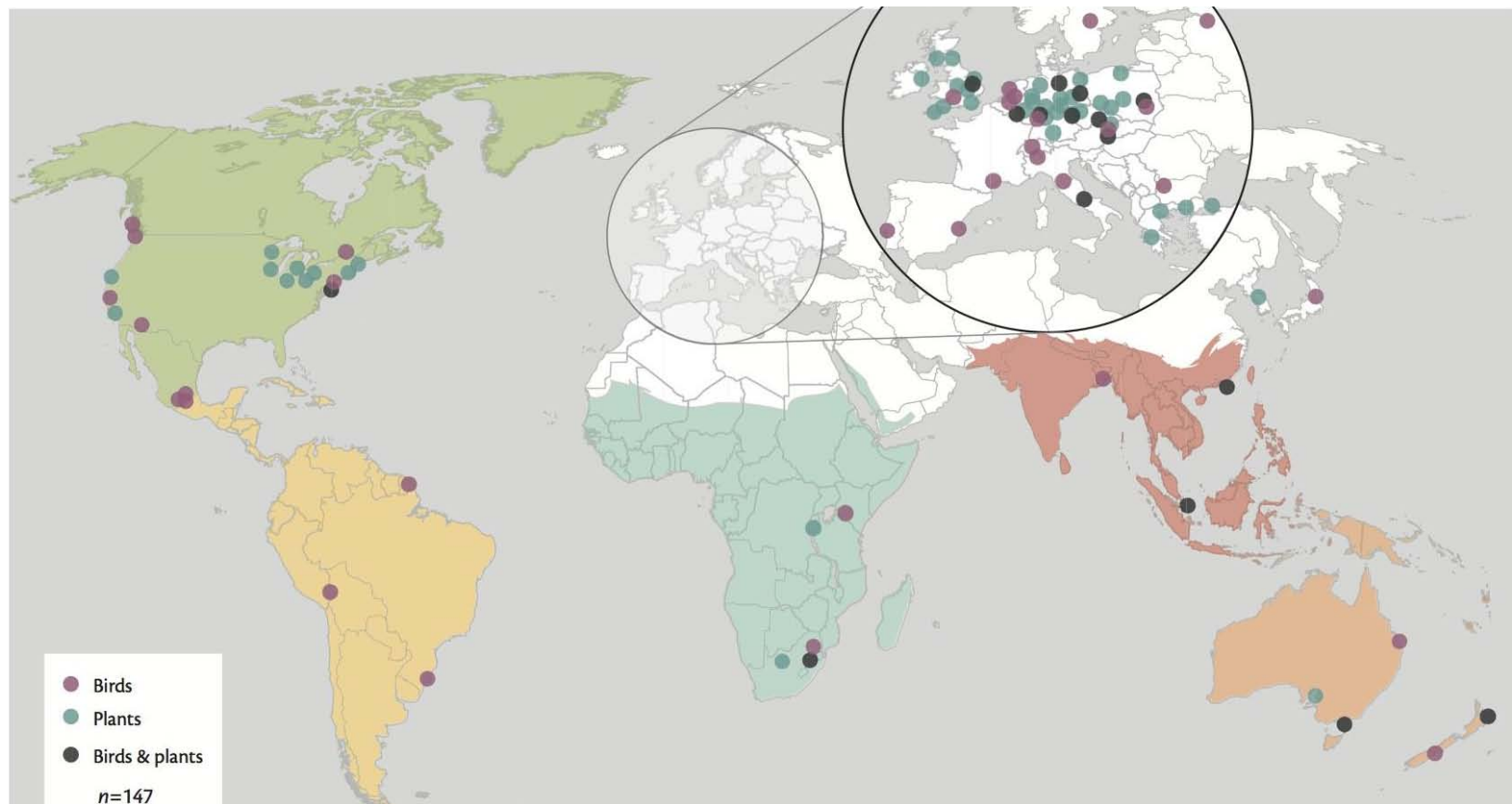
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### 3 Partners and instruments of the “Global Partnership....”

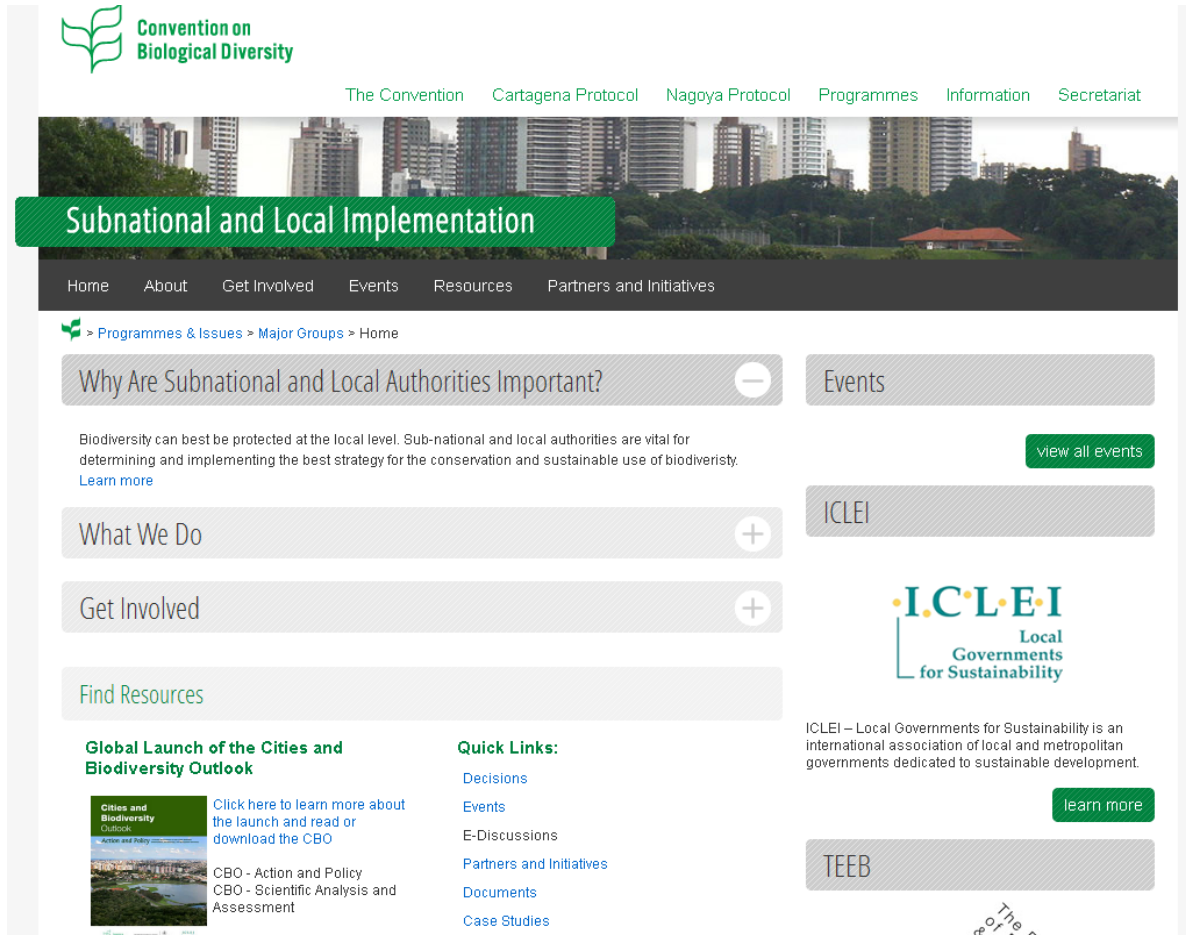
#### 3.7 UrBioNet – the Urban Biodiversity Research Coordination Network

Global research network funded by the U.S. National Science Foundation (2014-2017) that brings together researchers, land managers, and planners to address questions about biodiversity conservation in cities.



# 3 Partners and instruments of the “Global Partnership....”

The CBD "Plan of Action on Sub-National Governments, Cities and Other Local Authorities for Biodiversity 2011-2020" provided options for national governments and their partners facing the challenges of urban biodiversity loss.



The screenshot shows the Convention on Biological Diversity website. The header includes the logo and navigation links: The Convention, Cartagena Protocol, Nagoya Protocol, Programmes, Information, and Secretariat. The main banner features a cityscape and the title "Subnational and Local Implementation". Below the banner is a navigation bar with links: Home, About, Get Involved, Events, Resources, and Partners and Initiatives. The content area is divided into several sections:

- Why Are Subnational and Local Authorities Important?** (with a minus icon) - Biodiversity can best be protected at the local level. Sub-national and local authorities are vital for determining and implementing the best strategy for the conservation and sustainable use of biodiversity. [Learn more](#)
- What We Do** (with a plus icon)
- Get Involved** (with a plus icon)
- Find Resources**
- Global Launch of the Cities and Biodiversity Outlook** - [Click here to learn more about the launch and read or download the CBO](#)
- Quick Links:**
  - [Decisions](#)
  - [Events](#)
  - [E-Discussions](#)
  - [Partners and Initiatives](#)
  - [Documents](#)
  - [Case Studies](#)
- ICLEI** - Local Governments for Sustainability - [learn more](#)
- TEEB**

But what next?



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## 4 Global Research Agenda on Urban Biodiversity, Ecosystem Services and Design

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The Secretariat of the CBD (SCBD) invited URBIO to develop a research agenda for the necessary scientific fields and skills needed by local governments and practitioners.

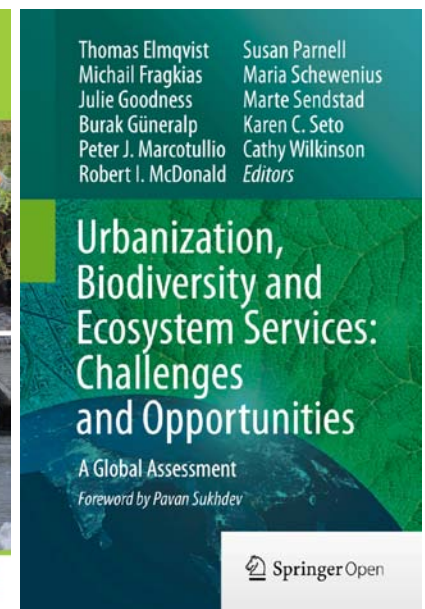
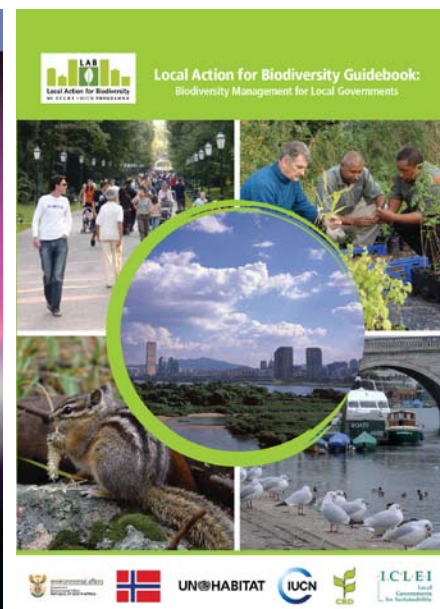
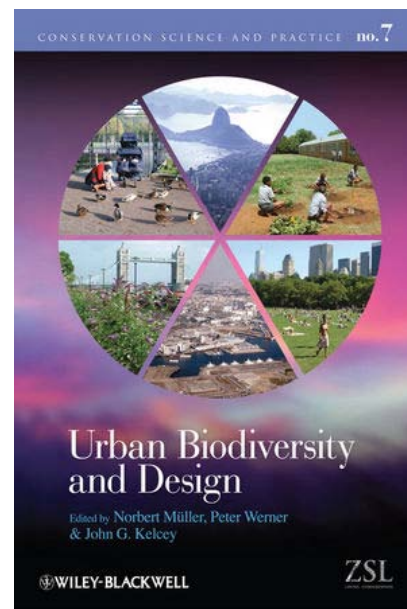
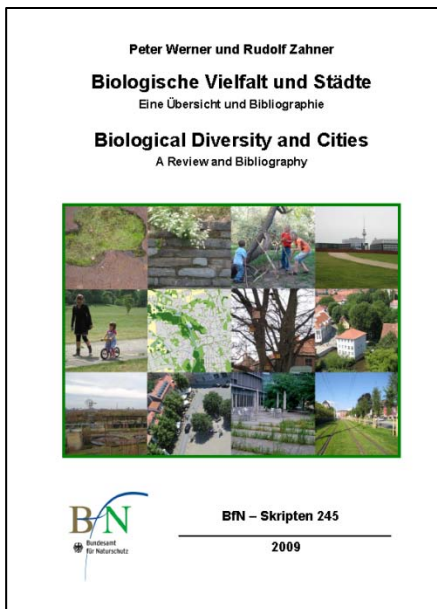
What new research is needed to support this “Global Partnership ”? What are knowledge gaps?



# 4 Global Research Agenda on Urban Biodiversity, Ecosystem Services and Design

Discussion based on:

- The perceived state of existing research and useful manuals for cities
- Findings of the “Cities Biodiversity Outlook”
- **The needs of local governments**





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## 4 Global Research Agenda on Urban Biodiversity, Ecosystem Services and Design

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URBIO started the discussion during a workshop in Erfurt 2013 in cooperation with the SCB and ICLEI and IUCN





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## 4 Global Research Agenda on Urban Biodiversity, Ecosystem Services and Design

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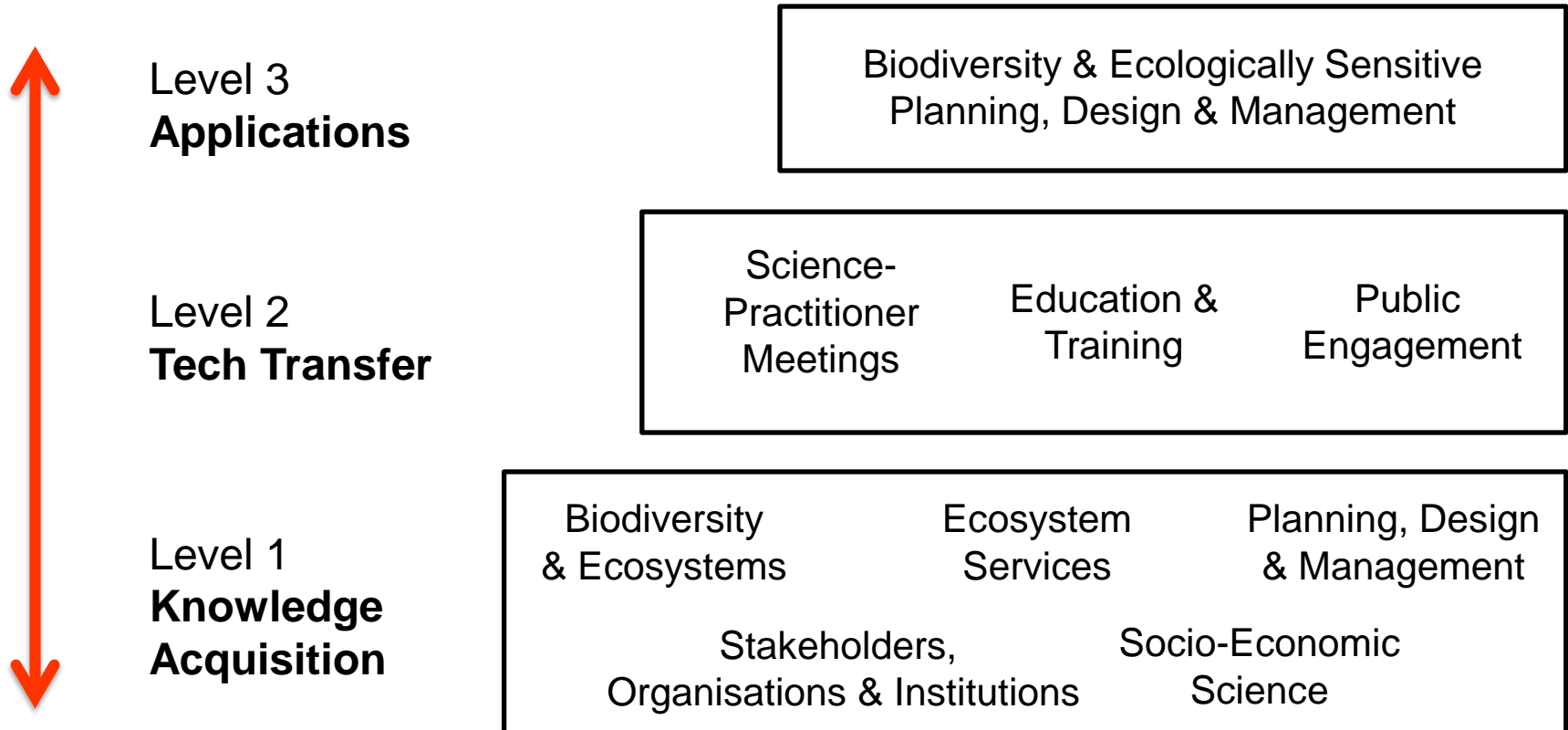
### Driving and Organizational Questions

- What information do decision makers & managers in governments and other sectors need to support biodiversity, expand ecosystem services & apply ecologically-sophisticated design?
- What knowledge is currently available in the cities & what are critical knowledge gaps?
- How can basic research support the specific need of cities?
- How can we communicate knowledge to decision-makers?
- What should next steps be to develop this agenda?

# 4 Global Research Agenda on Urban Biodiversity, Ecosystem Services and Design

A strategy for integrated creation of useful knowledge

**What information do decision makers & managers in governments and other sectors need to support biodiversity?**



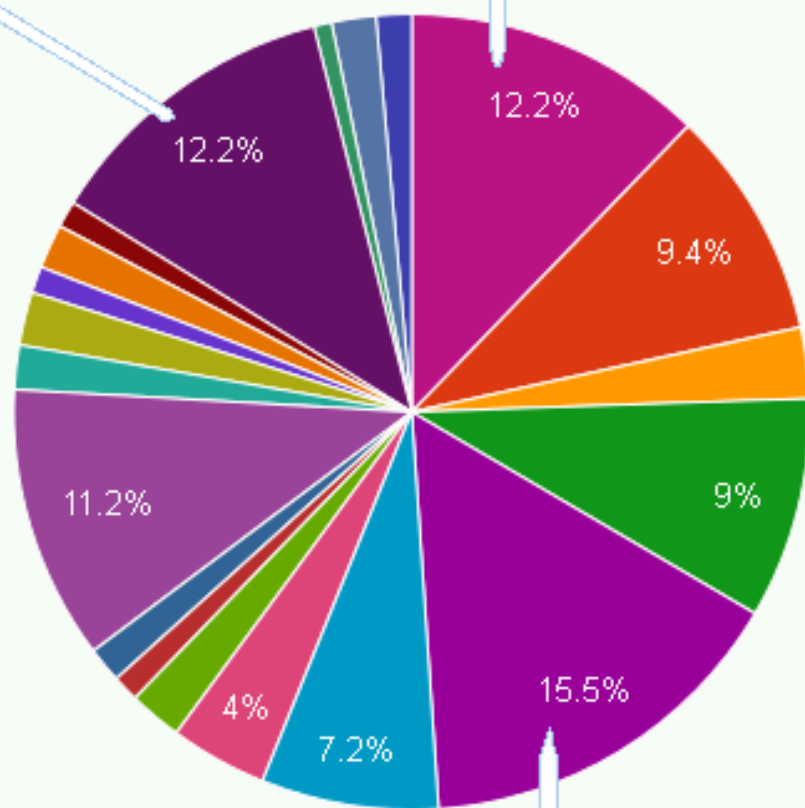
# Research Agenda Questions

Please vote for those five questions you consider most important!



12.2% How to set up a strategic policy to integrate biodiversity in the city?

12.2% What is the social and economic value of conserving biodiversity and ecosystems?



15.5% How can we integrate ecological design and tools into strategies for land use planning and management?

- What is the social and economic val...
- What are the ecosystem services off...
- What is the ecological pattern and pr...
- How can ecosystems in a given city ...
- How can we integrate ecological des...
- What should be the standards for gr...
- What are the drivers of biodiversity p...
- What have climate protection strateg...
- What ecological generalities can we ...
- What are the major ecological cause...
- How can we alter the structure, com...
- What are the predictor variables for s...
- How do we compare species compo...
- What are the threats to biodiversity a...
- What are the existing approaches to...
- Who are the stakeholders, ...
- How to set up a strategic policy to...
- In What ways Planning principle would...
- How to improve the appropriation of...
- Which communication strategies and...



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## 5 Outlook

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- To face the urban challenge a better understanding what local authorities need, will be important for researchers as well as to produce applied research which can be implemented immediately will be essential for practitioners.
- In the next step the dialogue with practitioners and city representatives should be enhanced within the “Global Partnership..”.
- A continuous dialogue between practitioners and researchers and new communication platforms will be necessary therefore.
- In order to support local authorities the “Global Research Agenda on Urban Biodiversity, Ecosystem Services and Design” should be developed as a further instrument within the “Global Partnership”.

## 6 Further reading - please visit URBIO website

### URBIO - Int. Network Urban Biodiversity & Design

Scientific Initiative of the UNCBD Major Group "Local Action"



Start

URBIO 2014 South Korea

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Corresponding Networks

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URBIO2014 Conference

**URBIO2013 Workshop**

URBIO2012 Conference

URBIO at IALE2011

URBIO2010 Conference

URBIO2008 Conference

Other upcoming conferences

CBD Activities

Publications & Research

### URBIO workshop 2013 - Global Research Agenda for Urban Biodiversity, Ecosystem services and Design

Erfurt/Germany 22 and 23 July 2013 with pre-excursion 21 July

Please find here for [download the Proceedings of the workshop](#) as PDF (3,3MB).

#### Aims:

Detect the research needs in and create ideas for a global research agenda on urban biodiversity, ecosystem services, and design for the CBD Major Group "Local Authorities".

#### Organisers:

URBIO Headquarters, Secretariat of the Convention on Biological Diversity (SCBD) & ICLEI

#### Workshop Chair:

Norbert Müller, URBIO President & Headquarters, University of Applied Sciences Erfurt, Germany

#### Funding:

German Federal Agency for Nature Conservation (BfN) & German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)

#### Participants:

URBIO Advisory Board members, CBO contributors and representatives of ICLEI & IUCN - by invitation only

#### Background:

The CBD "Plan of Action on Sub-National Governments, Cities and Other Local Authorities for Biodiversity 2011-2020" provided options for national governments and their partners in implementation for facing the challenges of biodiversity loss from the urban perspective. During the workshop the research needs will be discussed among the URBIO Advisory Board, the contributors of the CBO (Global Biodiversity Outlook) and representatives of the SCBD and ICLEI. The discussion should be based on existing bibliographic studies on urban biodiversity, ecosystem services and design, the findings of Cities and Biodiversity Outlook; as well as the needs stated by local governments.

## 7 Acknowledgements

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## 7 Acknowledgements



## 7 Acknowledgements

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