Chairs: Maria Ignatieva and Peter Werner

1. Andre Madler

- Global footprints works have been done in different cities
- South Africa and Brazil research- mostly on pristine biodiversity
- In Europe and US- emphasis: between urban and pristine nature

2. Norbert Müller - 40 years of applied urban research in Germany and its relevance for the CBD Plan of Action

- Beginning worked with Herbert Sukopp
    - The Project "Biotope Mapping in Urban Areas"
    - Local government and exchange of sciences
    - From the beginning it was focus on urban biodiversity, also ecosystem services and also taking into consideration human dimention
- 1978 working group "Biotope Mapping in Urban Areas"
- 50 cities were researched and bibliography published by order of European Council

Have done a lot in these years.

Discussion: to know what information we have from different countries, to be able to compare the data

Questions: Mark McDonnell: I was trained as a scientist, goal –publishing articles. Did you resample the same plots after 20 years later? Standardized method; but for the government, what happening in my city?

3. Sarel Cilliers – Research of papers in urban ecology published on S.A

36 papers from 200-2013

Mostly on plant related and on biodiversity conservation (hot spots of SA biodiversity) Cape Region mostly

North West province- private gardens

Problems: participation in many good treaties but very slow implementation in reality

Cape Town 3-ecosystem services: mapping

Cape Town 4-ecosystem services: economic valuation

Cape Town 5 –co-management: citizens science, involve people

Durban 1: Urban Environmental Management Local Agenda 21 programme: sustainable development in a post-apartheid city

North-West Province 1- private garden studies: floristics. Very complex and dynamic system, have many rare and endangered species

North West Province 4-private studies: socio-economic and cultural influences, gardens of Botswana communities. Specific garden layout which respect cultural traditions

Private gardens as part of urban green infrastructure

Implementation of urban biodiversity studies-planning

Implementation of urban biodiversity studies-decision makers

4. Chantal van Ham – Aim of the project URBES

- What is the monitary value of biodiversity
- How research knowledge can be translated into planning
- Survey of nature perception and appreciation of diversity in allotment gardens in Salzburg
- EU Biodiversity Strategy to 2020

- 7th Environmental Action Programme
- **EU Green Infrastructure Strategy**
- **EU Horizon 2020!!!**

Challenges

Science policy gap-available scientific information versus the applicability to urban planning

Integration of biodiversity in urban planning and management is limited

5. Mahito Kamada – Ecosystem services as the security against natural disaster -lessons from Japan

- Topographic characteristics of coastal area in disaster site
- Number of dead or missing persons
- Monitoring of landscapes
- Analysis of affected coasts after tsunami
- It was a planted pine forest as a barrier against tsunami but this tsunami was to strong and almost all pine forests were destroyed by tsunami.
- Anyone considered that coastal ecosystems completely destroyed but in reality there are some natural successions in affected areas.
- What can we learn from this situation? There were sand dunes 700 BC. There are still some villages located on these dunes
- Such tsunami once in 1000 years
- Conclusion: We should not use this coastal area for housing.
- Houses on natural levee escaped the tsunami
- Traditional landscape gives us a good advice how to design this area.
- Appearance of endangered species in areas inundated and disturbed by tsunami
- Endangered species as an indicator of potential risk of the land or ecosystem services
- Proposal to Science Council of Japan from Japanese Association for Landscape Ecology
- Make full use of potential of nature in terms of topography and landform
- Positive use of supporting and provisioning services -firewood from SATOYAMA and Water from spring
- Move people to safe highland
- Problems In recovery and restoration works: Miscommunication between agencies responsible for restoration.

6. Haripriya Gundimeda – Urban biodiversity, ecosystem services and Design. How to go forward in India?

- Try to connect ecology and Economy
- TEEB approach: Recognising value, demonstrating value and capturing value
- Biodiversity business
- Rural GDP-vs Urban GDP
- Services that biodiversity and ESS provides are often not visible
- How to integrate different
- In India: are very fragmented and connected agencies in decision making
- Very short time thinking strategy
- Examples from Sumatra (Integrating ES into Spatial Planning in Sumatra)

7. Nam Choon Kim – Adding and connecting more pieces of urban wildlife habitats

- Up Lift Approach identifying and putting higher priority
- Green roof promoting programme
- Environmentally friendly building certificate

- Cheonggyecheaon stream restoration in Seoul
- Big cities, flood problems. Very few green spaces, very few stepping stones for wild life
- 83 cities in S. Korea. Cities-more than 50.000
- Seoul 6, 1 mln. Very few m2 of green areas per person 11.6 compare to other cities

Green areas:

- Urban parks, home range parks and thematic parks
- Historic Park,
- Cultural Park,
- Cemeteries
- Many people have no walkable distance approach to green areas
- Green Roof Habitats programme in Korea
- Extensive and intensive green roofs
- Buildings that have green building certificates should be given tax reduction
  1. Aquatic biotopes in the city.
  2. Cheonggyecheon stream restoration project
     Completed 2005
  3. Very famous case study
  4. Thematic places: willow marshes

  Different research questions: can we improve retaining walls of stream and do better habitat

  Green network plan for new capital city (Sejong city ecobridge) Building connected by green roofs. Can we connect by green roof places inside to outside-?

  Ecological cities in cities

  Restored rivers in Seoul

  Ecological restoration sites in cities

  Purification wetlands

  Natueal Madang Project in Seoul (2012), 30 ha

  Natural Madang projects in Busan (2012), also in Daegu (2012)

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Summary

The session demonstrated the value of biodiversity and its connection to ecosystem functions and services, and how the development of a resilient city has to be worked out by research projects, intensively.

The experiences of latest natural hazards, natural processes and anthropogenic activities raise the following research questions:

- Can the improvement of urban biodiversity decrease, respectively,
- How urban biodiversity can mitigate the vulnerability of cities in time of climate change or natural hazards.

This includes links to strategies of land use planning and management, which integrates environmental assessment tools and consider experiences of historical or best practice land management.

The determination of the economic values of biodiversity, for example represented by the TEEB approach, could be a helpful tool to ensure the sustainable urban development. For that reason, information about biodiversity and ecosystem services should be linked to economic evaluation processes.

Environmental economy could be a strong partner for such interdisciplinary researches, also analyzing the question if high levels of natural capital can decrease vulnerability during finance crises.

The greening of cities is a strategy to improve urban biodiversity and ecosystem services. Greening is possible in different scales. The benefits of different greening measures has to worked out, also which standards, m^2 per persons, are needed for ecological and social purposes.

Greening is not only space outside of buildings and built-up areas. Hybrids of constructions and green buildings are possible to design. Their quality and benefits are areas for investigations.

Session 3 demonstrated that green city strategies – green in a wider sense, including green economy – and strategies for resilient cities are challenges for urban biodiversity research.

FINAL Summary:

The session demonstrated the value of biodiversity and its connection to ecosystem services as well as green city strategies in different scales, connections to green economy and development for resilient cities.

Research questions:

- How urban biodiversity can mitigate the vulnerability of cities in time of climate change or after natural hazards?
- How we can develop strategies for land use planning and management which integrates environmental assessment tools and consider experiences of historical or best practices?
- How we can determinate economic values of biodiversity to ensure the sustainable urban development?
- How to work out different greening measures and standards for ecological and social purposes taking into consideration different scales (from fine to the regional)?
- How can we incorporate “green architecture” with our biodiversity purposes?