
Highlights of the Urban NBS Day 2024

Event date: 31 May 2024

Location: Social Impact Factory (Utrecht)

Hosted by: Utrecht University School of Economics

I am fascinated by nature and eager to see its presence in cities. As an alumni of Utrecht University, I wrote a thesis on systemic and corruption-related risks in the European Banking Union. Though markets can be seen as 'man-made', there is a clear parallel to nature, understanding this parallel is necessary to really comprehend markets beyond the visible parts. This drove me to write a financial thriller named 'Discounted ... By a Lightning Strike!'. As a board member at Carpe Divitias, I take on an active position within the markets, and like to stay sharp on challenges in economics, environmental sustainability being a major one. More than sharing my own work, I'll be happy to take notes and learn from the other participants.

Ardi Kaars
Carpe Divitias

Carpe Divitias

*Discounted ...
By a Lightning Strike!*
Ardi Kaars

Currently I'm working on several economic topics of interest. Markets have a very physical component to them, this may well be best illustrated by environmental economics applied to cities.

Urban NBS Day 2024

Documentation by: Ardi Kaars

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Introduction: About the event itself

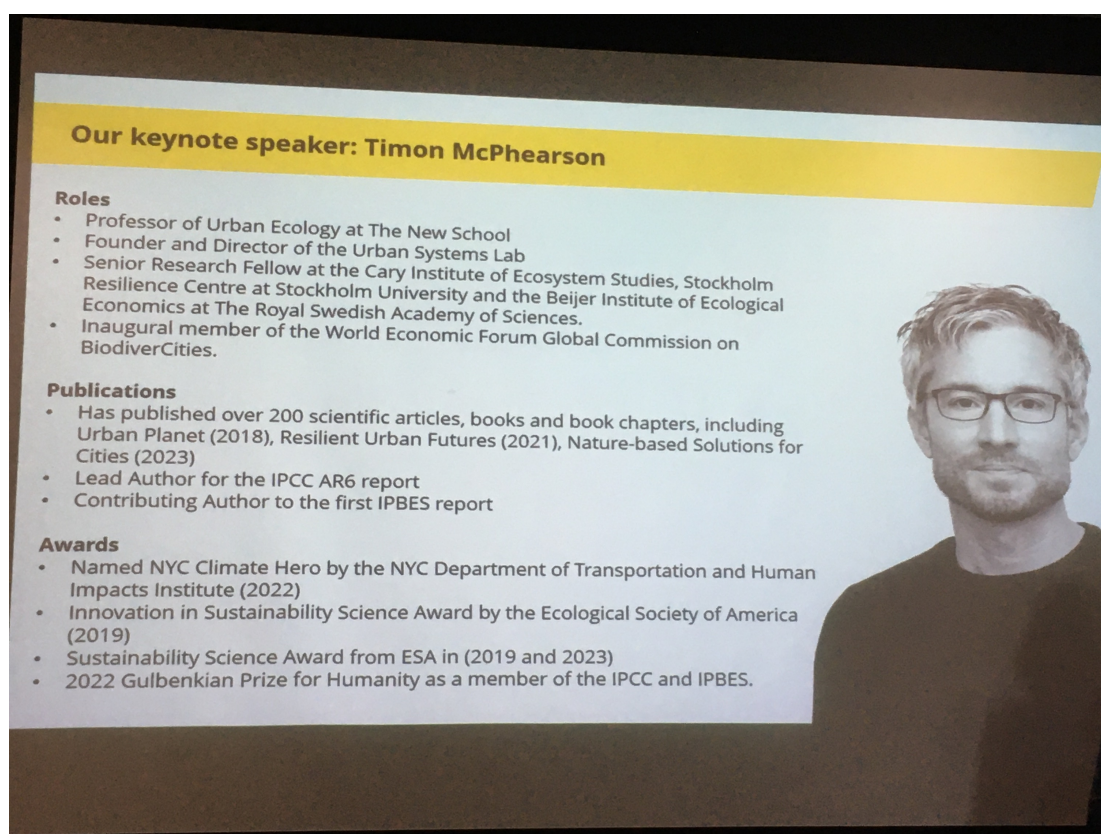
The Natural Based Solutions Day is an annual event at Utrecht University where scientists, practitioners, policy makers, entrepreneurs and other stakeholders gather to discuss the latest updates and concerns regarding the presence of nature and green facilities in cities. For the sake of convenience, I have indexed the key findings per session and per speaker/speakers, and have resorted to the schedule and sessions as specified by Utrecht University itself

In this document, I have used Roman numbers to rank the different parts of the schedule. There are no direct quotations, yet covered topics and answered questions have been documented below with utmost care and accuracy based on my own notes, careful listening and a final review. From 13h00 till 15h00, I have attended several discussions as part of the knowledge exchange, yet not all, due to constraints in time. Moreover, I have taken several photographs during the presentation by mr. McPhearson to support my written notes.

I. 10h00: Event introduction by Helen Toxopeus (researcher at Sustainable Finance Lab, Utrecht University School of Economics and Erasmus University Rotterdam)

- Natural Based Solutions are those solutions which are inspired by nature and are cost-effective -> meaning that multiple benefits are produced, including non-monetary ones such as physical and mental health
- Urban nature is still underdelivered
- Hence there are calls for a collective business case
- Question is who will pay?
- Examples include Utrecht stadstuin food for good (city garden)
- NHS UK uses 'green prescribing' -> actively encouraging patients to connect with natural environments
- From a policy and finance perspective, there is a persistent disconnect

II. 10h15: Keynote presentation by Timon McPhearson (Intergovernmental Panel on Climate Change Lead Author, researcher at Urban Systems Lab, The New School)



Our keynote speaker: Timon McPhearson

Roles

- Professor of Urban Ecology at The New School
- Founder and Director of the Urban Systems Lab
- Senior Research Fellow at the Cary Institute of Ecosystem Studies, Stockholm Resilience Centre at Stockholm University and the Beijer Institute of Ecological Economics at The Royal Swedish Academy of Sciences.
- Inaugural member of the World Economic Forum Global Commission on BiodiverCities.

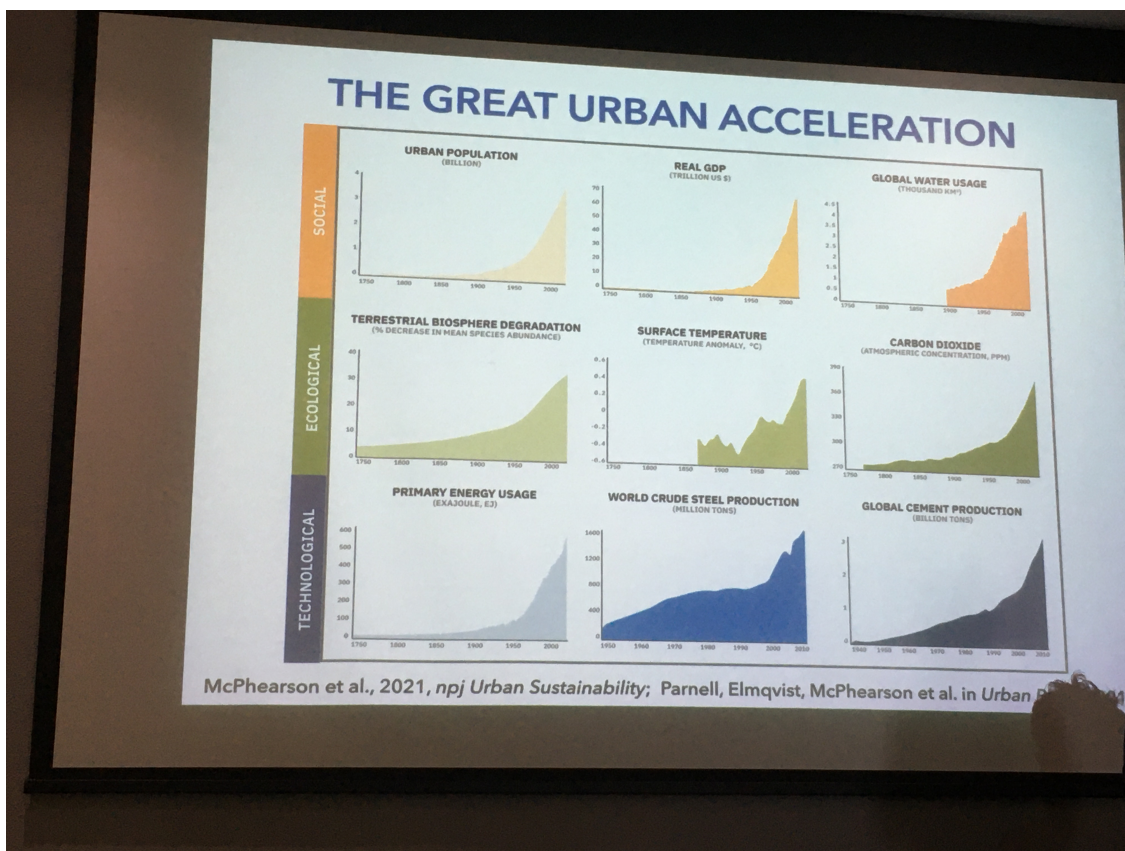
Publications

- Has published over 200 scientific articles, books and book chapters, including Urban Planet (2018), Resilient Urban Futures (2021), Nature-based Solutions for Cities (2023)
- Lead Author for the IPCC AR6 report
- Contributing Author to the first IPBES report

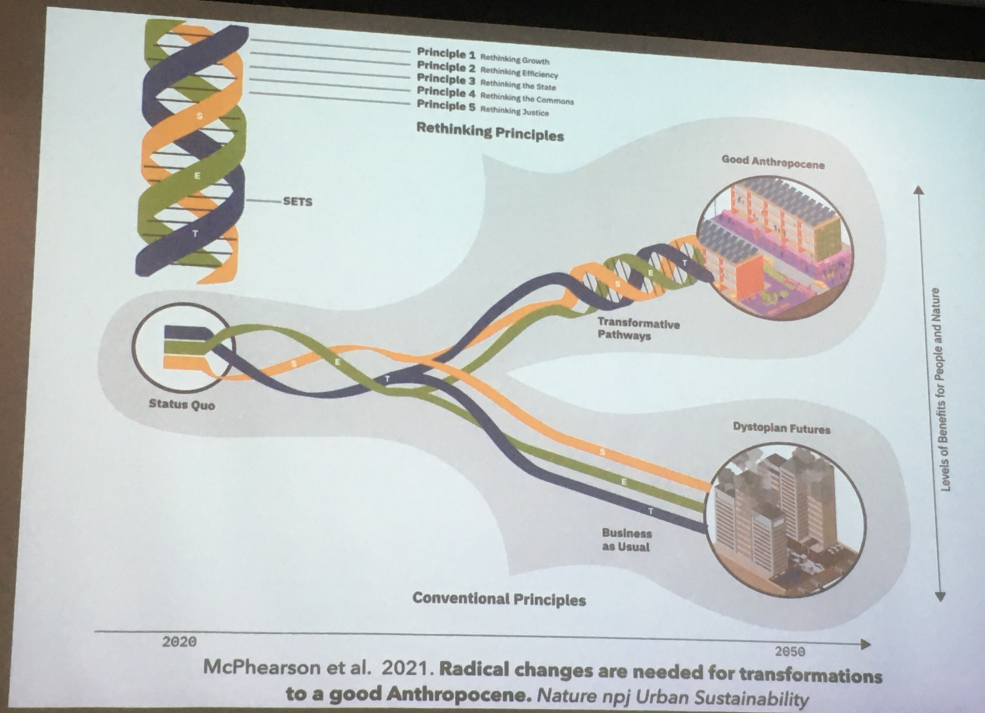
Awards

- Named NYC Climate Hero by the NYC Department of Transportation and Human Impacts Institute (2022)
- Innovation in Sustainability Science Award by the Ecological Society of America (2019)
- Sustainability Science Award from ESA in (2019 and 2023)
- 2022 Gulbenkian Prize for Humanity as a member of the IPCC and IPBES.

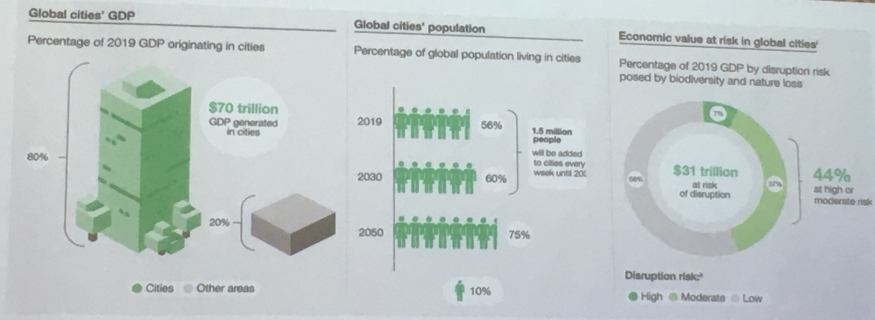
- There are mountains of evidence of health benefits associated with contact with nature
- \$90 trillion worth of infrastructure investments will be needed to facilitate global population growth
- A lot of urbanisation has taken place according to a 20th century model -> squeezing out nature
- The human nature (dis)connection is both physical and psychological, with implications for both individual and collective health
- Only 37% of the 500 most populous cities worldwide have a strategy dedicated to nature or biodiversity (WEF, 2024)
- Nature inequity and higher COVID-19 case rates in less-green neighbourhoods in the US result in citizens of color and lower income groups having less access to nature in their neighbourhood
- The way trees cool down cities has immense benefits such as filtering air pollutants, absorbing water, recreational activity also increases



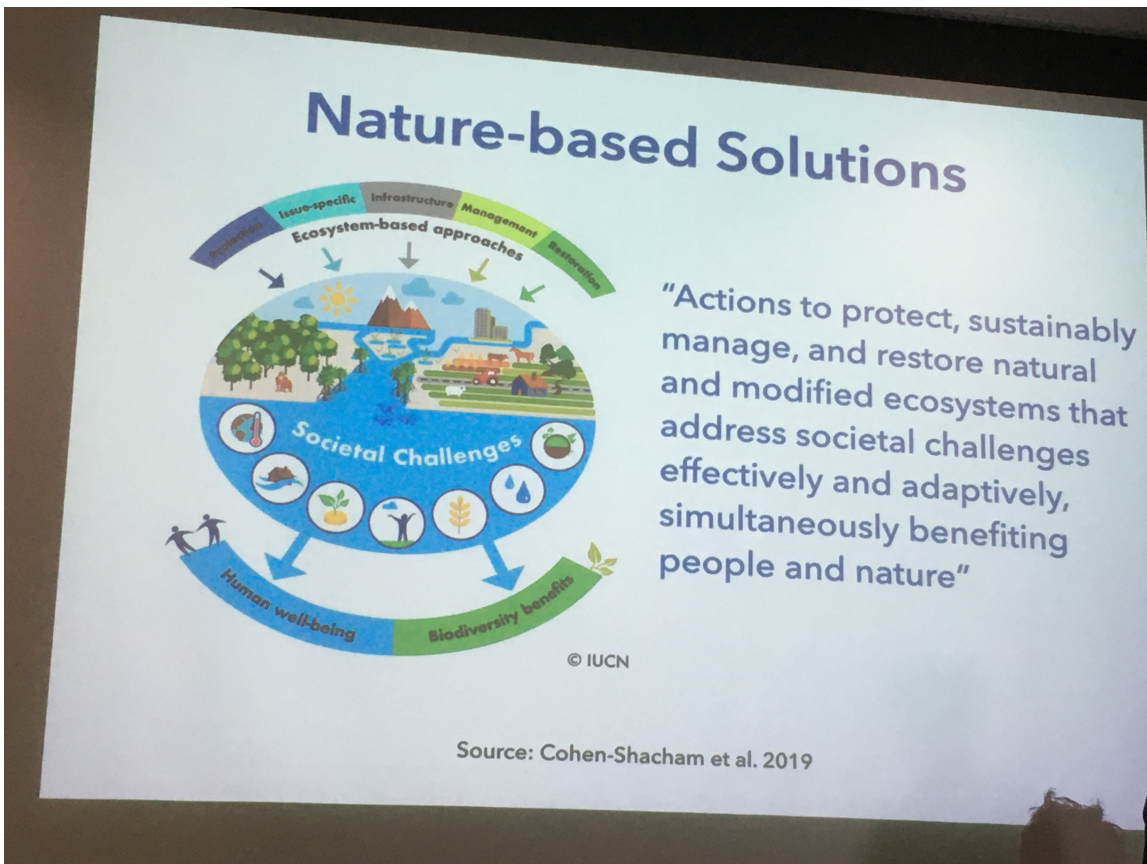
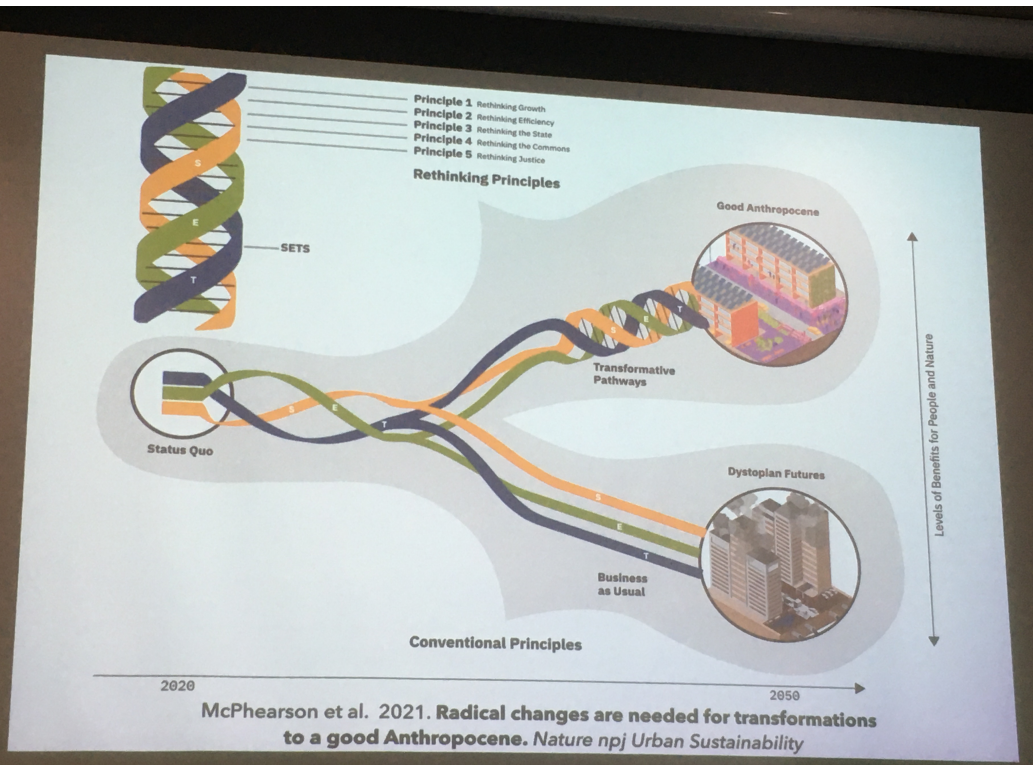
- There are 10 NBS pathways:
 - Psychological stress-reduction
 - Attention restoration and improvements in the parasympathetic nervous system, as well as improved cognitive function
 - Fosters social cohesion -> nature supports a sense of place and place identity
 - Improved immune function -> 'forest bathing' benefits immune responses and even triggers production of anti-cancer proteins (according to Japanese research)
 - Improved mental health
 - Enhanced physical activity -> improves fitness, reduces obesity, counters fourth leading factor of mortality worldwide
 - Reduction in 'noise' pollution
 - Reduction in air pollution
 - Reduction in urban heat island -> up to 1 degree cooling within a radius of up to 1 km from the park in question
 - Reduction in mortality rates for all causes, and better self-reported health



World Economic Forum: Global Commission on BiodiverCities



World Economic Forum, 2022. *BiodiverCities by 2030: Transforming cities' relationship with nature*




Greener cities: a necessity or a luxury?

Are urban trees and parks essential to improving the environment and human health – or just a sop to middle-class ideals of gentrification? Two books debate these opposing views.

By Timon McPhearson

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A vertical forest in Milan, Italy. Credit: Getty

The Living City: Why Cities Don't Need to Be Green to Be Great Des Fitzgerald Basic Books (2023)

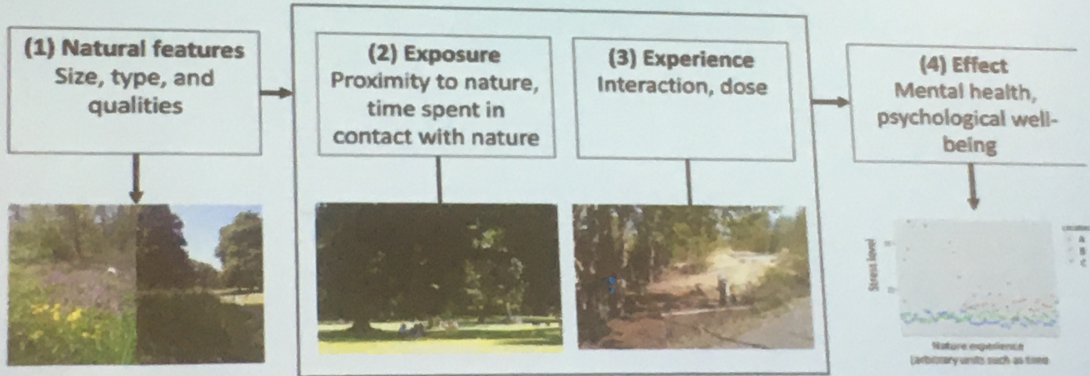
Age of the City: Why our Future will be Won or Lost Together Ian Goldin and Tom Lee-Devlin Bloomsbury Continuum (2023)

McPhearson, T., (2024) *Nature*

My questions to mr. McPhearson:

- I: Given that now only 37% of the largest 500 cities have NBS plans in place and the threat posed by global warming, how much could this effect be countered if 100% of these cities had NBS plans, all else equal?
- II: To what extent are your implementation plans which you present to the US government sensitive to election results?
- III: Can I add you on LinkedIn?
- Answer to question I: This is really difficult to predict, given the number of factors on which it depends. Moreover, cities form only 4% of the global land area, and absorptions of emissions is limited, though it must be said that 70% of emissions are driven by urban lifestyle -> there is a lot to win in terms of adaptation
- Answer to question II: This one is to be answered after the presentation, but the answer is yes.
- Answer to question III: The answer is yes.

NBS Pathway for Mental Health



Source: Adapted from Bratman et al. (2019); photographs by Nadja Kabisch.

(Kabisch et al. 2023)

NBS Pathway for Mental Health



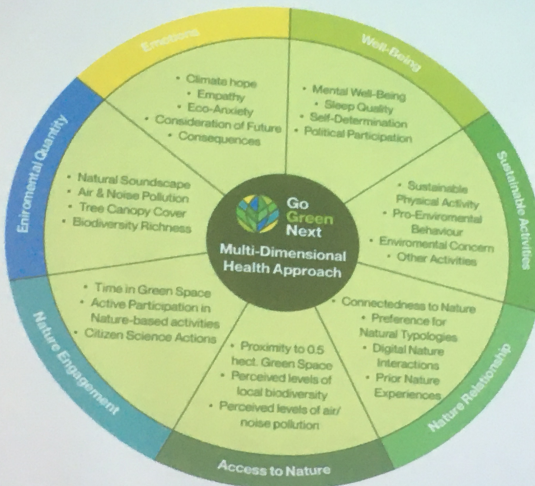
Source: Adapted from Bratman et al. (2019); photographs by Sukanya Basu.

Stress-releasing impacts of urban nature in Hyderabad, India
(Kabisch et al. 2023)

3-30-300 Rule



Konijnendijk, 2021



360 Approach

GGN Foundation

1. Access to nature is a human right
2. Nature relationships benefit us and nature
3. Multi-dimensional 360 approach has systemic potential

WHERE TO FROM HERE?

- ▶ Need for studies that directly relate measured biodiversity to human health outcomes (e.g. there is more evidence of self-reported psychological well-being than well-defined clinical outcomes)
- ▶ Which cultural and socio-economic factors influence the extent to which NBS interventions succeed?
- ▶ How will climate change and urbanization affect the role NBS play in improving health?
- ▶ How do we make access more equitable and inclusive? Which demographic groups benefit the most from NBS, who are typically left out, and how to include them?

III. 11h00: Panel discussion with the following three participants: i) Berry Gersonius (Advisor Green Blue City at Municipality of Dordrecht) ii) Wendy Chen (Professor and deputy-head of Geography at University of Hong Kong) iii) Hanneke Kruijze (Senior environmental analyst at Utrecht University and RIVM)

Berry Gersonius

- He has a local governmental mandate for implementing green facilities -> the sale of an energy company unlocked funds for his ideas as a green benefits planner -> he cooperates with the RIVM
- The projects result in about 45 million Euros increase in health benefits and property value -> health benefits outweigh the investment costs
- The greatest challenges lays in unlocking funds to cover maintenance costs
- Architecture company Mecanoo assists
- The most challenging sector to implement NBS is healthcare

Hanneke Kruijze

- Utrecht University and the Rijksinstituut voor Volksgezondheid en Milieu (RIVM is the federal institute for health and environment) are a good combination to put theory into practice
- Yet lot of unknowns in this field remain
- Practical reality matters, in particular when working with ministries -> that means striking a balance between what is scientifically right versus what is needed from a policy perspective
- Spatial planners need to explain how health and nature are taken into account
- That means setting up a monitoring plan
- As for existing areas, lot of restructuring takes place
- From a gentrification perspective, be careful when taking into account remigration

Wendy Chan

- She focuses on and propagates a scientific understanding of forestry as a type of NBS -> evidence is increasing yet still often limited to local cases -> compact-based evidence
- Either qualitative or quantitative evidence may be relevant
- Social cohesion is an important factor in many societies, Hong Kong included
- More research is needed to rebuild this cohesion
- Funding is still an important constraint

Q&A

- Question: What are the main challenges currently present in the field of NBS in relation to forestry? (question from the audience)
- Answer by Mrs. Chan: Two of the most challenging parts are bridging the gap between local versus global analysis and decision-making; as is the fact that inprints now largely depend on local cases
- Question: How do you measure the added value of NBS to property prices? (question from the audience)
- Answer by Mr. Gersonius: Property price increases are measured in Dordrecht through analysis of real estate in the proximity of green facilities. The model assumptions though can highly affect outcomes, with parameters such as distance from the green facility. Funding still comes in silos

IV. 13h00: NBS and One health knowledge exchange

i) Investeren in integraliteit by Merlissa Diele (analyst at De Natuurverdubbelers, specialised into NBS projects in cities)

- This initiative is a continuation of previous projects on multiple value creations
- Funding involves the municipalities and private investors alike, through a mixture of bonds and equities
- Repayment of financiers and the horizon over which this takes place are important ones
- There are thus various ways of funding projects, including bundled projects
- Tree planting is one of the methods of NBS
- Societal value is assumed
- There is an option to make a financial contribution during the process, as is pre-financing
- The municipality is being paid back by project developers
- Nota Kostenverhaal (public policy document on urban project financing) has proven effective, in Delft for example

My question

- Does monetary policy affect the financing of these projects in any way?
- Answer: There is some fluctuation, though it is limited due to the diverse sources of funding, and most projects involve high risks; a revolving fund would be best, may be achievable but not now

ii) Green Budgeting Buddies by Cathy de Jongh (Junior researcher at Utrecht University)

- Green Budgeting Buddies Cofinancing NBS (within EU)
- Often there are three sources of funding: NGOs, Municipalities and the EU
- Cogovernance arrangements are common, with national policies implemented at the local level
- NGOs are vital in brokering trust between the various other stakeholders
- Banks often provide the loans, and most money comes from public actors such as municipalities

My question

- Regarding international sources of funding, do you see any security risks posed by regimes that wish to gain terrain in the EU by funding the projects you described (I could think of several countries)?
- Answer by Mrs. de Jongh: As far as I am aware we have not seen such risks, however, in Tianjin, the so-called Eco-city is known for having one of the most complex funding structures ever

iii) Research on ecology on private properties by Floortje de Groot (researcher natural recovery and ecological conservation at Hogeschool Utrecht (University of applied sciences))

- This research has not started yet but is about to commence soon
- A lot has been said already about ecology in the public domain, however a lot of new information is to be gained about the private domain and houses in particular
- Several neighbourhoods will be subjected to research, to see what role nature plays and how to improve on that
- Utrecht is already a green city yet room for improvement remains
- Both quantitative and qualitative elements

My hint for collecting data -> search for observations in impoverished neighbourhoods -> here is the biggest potential for improvement in green facilities at home (my assumption)

iv) Adaptive capacity of São Paulo regarding Green Corridors by Jana K Peruzzo (PhD researcher at the University of Amsterdam)

- Green corridors are strips of urban land containing heightened concentration of vegetation, connecting different natural areas within cities
- In São Paulo, a project of green corridors started in 2002, yet disappeared in 2014
- Part of the plan is to renaturalise river streams
- Gentrification is a major problem -> housing department did not really take part and that is challenging
- There are abandoned railways and constant floods -> in fact, last rain seasons there were 700 floods
- Other barriers are mechanisms of transformation and public perception (with green facilities still often perceived as impediments to more hardcore economic development)
- There is a lack of vision
- Landscapes are a major problem too
- There is a map of risk areas in Favellas
- River restoration has interplay with housing waste
- Cleanup is not without tension among residents (according to Timon McPhearson)
- When trying to solve ecological problems, you will find yourself dealing with plenty of other problems too that are characteristic of the bottom of Maslow's pyramid
- KDI -> Kounkey Design Initiative -> based in Stockholm
- Corruption risk is still a major one -> status quo tries to preserve itself
- With the instruments in place, local governors still have a lot of discretion
- Transit-Oriented Development -> all collected funds spent on asphalt instead
- Organised crime is alive and well
- We are working with the Green department and local academia
- So many problems when implementing the green corridors -> design of public policy has to be improved

V. 15h00 Remaining questions prior to networking cocktail

- **My question: How to reduce corruption risks when making major green investments? And how to make sure bottom-up action is taken, starting with the on-site reporting and whistleblowing?**
- **Question from the audience: Can we please make sure that academics can provide a monetary discussion for green investments?**

On a final note

This years Urban NBS day was a refreshing reminder to take the challenges of climate change in cities seriously. The conversations were fruitful and informative, and have reaffirmed the importance of open debate and scientific contributions in this field, as well as a call to action. On a personal note, my questions were aimed at gathering information on how to make investments in cities' green facilities as effective as possible from the bottom up, taking into account persisting problems such as organised crime, corruption, and bureaucracy. The more efficient NBS can be achieved, the more NBS will be realised for the better. Thank you for reading!



I have no interests to declare other than my participation at this event as a board member of investment committee Carpe Divitias.