



NATURA All-Hands Meeting 2022

Summary Report

Nature-based solutions for Urban Resilience in the Anthropocene (NATURA)

Theme: NBS at a Critical Crossroads: Finding Synergies for Global to Local Impact

April 4 - 6, 2022

The Phoenicia Malta, The Mall FRN1478, Floriana, Malta

Contents

Overview	3
<hr/>	
Day 1 Takeaways	3
Welcome and Overview of Meeting	4
Round Robin NATURA Network Exchanges	4
Keynote Presentations	6
Lightning Talks Session	6
Breakout Group Plenary	12
Breakout Group Discussion	12
Day 2 Takeaways	20
<hr/>	
NBS Roadmap	20
Africa	21
Europe	22
North America	23
Latin America	24
Asia Pacific	25
Early-Career Network Research Presentation	26
Concurrent Work Sessions	30
Field Trip	31
Day 3 Takeaways	32
<hr/>	
Micro Talks	32
Network Presentation: NBS Roadmap Follow-Up	39
Panel session: NBS Policy Around the World	39
Breakout group discussion	39
Wrap-Up and Concluding Remarks	42
AHM Organizing Team	43
<hr/>	

Overview

The 2022 NATURA All-Hands Meeting (AHM) took place from April 4-6, 2022 in Valletta, Malta. Hosted by NATURA network member Dr. Mario Balzan, University of Malta, the meeting engaged network members in discussions, presentations and intimate break-out conversations at the Phoenicia Hotel in central Valletta. The meeting created an opportunity to deepen the work of network members, Thematic Working Groups, as well as an opportunity for network members to exchange ideas, ongoing research and to pitch new and novel projects exploring the theory, practice and applications of nature-based solutions globally.

Total # of Participants: 48 network members

Total # of Networks Represented: 26



Participating Networks:

- Baltimore LTER
- BIG Project
- Connecting Nature
- ENABLE
- ENVISION
- European Forest Institute
- European Forum on Urban Forestry

- Future Position X network
- GoGreenRoutes
- International LTER
- Natural Capital Project
- NATURVATION
- PlanAdapt Network
- Re-Nature Project
- Recycling the City Network
- San Juan ULTRA Network
- SETS Convergence
- SMARTer Greener Cities
- The Nature of Cities
- UNESCO Chair on Sustainability
- UNESCO European Regional Centre for Ecohydrology
- Urban Biodiversity Hub
- Urban Resilience to Extremes Sustainability Research Network
- Urban Sustainability Directors Network
- VIVA-Plan
- Western Center for Metropolitan Extension

This material is based upon work supported by the National Science Foundation under Grant No. (Grant #1927468 and #1927167). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Day 1 Takeaways

Monday, April 4, 2022

[Visit this link for photos from the meeting!](#)

Welcome and Overview of Meeting

Moderators: Timon McPhearson and Nancy Grimm (NATURA Co-Directors)

A brief introduction to the AHM meeting from NATURA Co-Directors) Nancy Grimm and Timon McPhearson featuring network updates and goal setting.

Round Robin NATURA Network Exchanges

Moderator: Elizabeth Cook (NATURA Co-Director; UREx SRN)

This session asked NATURA network members to introduce themselves and to share current research, projects, as well as challenges and opportunities they encounter both regionally and globally:

Group 1

- Innovation - health particularly mental health
- Anti-gentrification
- Informality and the use of space
- Effectiveness of NBS - what works / what doesn't
- Funding has an influence on the deployment of NBS leading elements being excluded
- Top down /bottom up contradictions providing /diluting the urban form by NBS
- Challenges of interdisciplinary and multi-stakeholder processes in practice

Group 2

- Interdisciplinarity & integrate across different regions
- Concept of soft infrastructure
- How to activate interface across science and policy

Group 3

- Equity within cities, regions, globally

- Equity considerations between human and non-human species
- Balancing benefits of NBS for people and biodiversity
- Top down processes between the Global North and Global South, including in the way we translate science into practice
- Multidimensionality

Group 4

- Value of multi-continental network
- Environmental law on NBS lacking
- Environmental and intergenerational justice
- MOOC for NBS
- How do we decide what knowledge is valuable across different communities with an interest in NBS

Group 5

- Who will maintain green spaces? Funding, stewards of NBS, etc - important to sustainability of NBS (but need to think about what this means and how this relates to communities including those that are marginalised)
- Are we educating citizens or are we trying to connect citizens to NBS?



Group Discussion Takeaways

- Co-creation of knowledge is also important at a local level including citizen science. Traditional knowledge, local knowledge

- How do we scale this up to a global level?
- How does political economy vary across regions, and how does this affect NBS?
- We need to incorporate ecological knowledge into the design of NBS
- Role of education across different scales.
- How do we think about the ‘perspectives’ of multiple species in the design of NBS?
- Political economic context is also important when designing NBS
- Rewilding parts of NBS - let nature naturalize urban spaces.
- Difference governance levels for NBS but also different implementation scales for NBS
- There are NBS which enable nature and those that enable humans (links to furniture issues - nature for people but where are places for nature to exist?) - also links to “rewilding” idea; that letting ecological processes play out can enhance biodiversity (can have benefits for nature with people)
- We’re missing discussions about NBS for people with disabilities - how to make nature something people can interact with (and use senses) which also links to health. We need methodologies to help assess this
- Cross-learning across cities to learn how governance structures work differently
- Differentiating between ecological and human health (but -- One Health?)
- What is knowledge, what sources and how do different communities contribute to that knowledge? Combining different types of knowledge that include indigenous knowledge. Ensuring that all voices are heard is important.
- How can we ‘let nature do its work’ despite cities being heavily regulated.
- What perspectives are represented here? Anthropocentric or ecocentric? World-view mapping would be helpful here. Can connect to the global roadmap.
- Connect ecology and art -
- Need to be careful about the biases around “nature is inherently good”.
- Important to understand the perspectives of people that are indifferent or in fear of urban nature, i.e., perceived risks of NBS
- Need to consider and learn from those examples of NBS that haven’t been successful.
- How do we communicate NBS for different audiences, stakeholders and users - science? Data? Visuals? Design? arts?
- Future Cities podcast - let’s think about collective podcast for NATURA?

Keynote Presentations

Moderator: Mario Balzan (NATURA AHM Planning Committee Member, ReNature)

[Download the audio file to listen here!](#)

- Dr. Marie-Louise Coleiro Preca, President Emeritus of Malta, President of the Foundation for the Wellbeing of Society
- Gwendolyn “Wendy” Green, Chargé d’Affaires of the United States Embassy in Malta ([link to bio](#))

Lightning Talks Session

Moderator: Marcus Collier (NATURA AHM Planning Committee Member, NATURA Coordinating Committee Member, Connecting Nature)

[Download the audio file to listen here!](#)

NATURA members presented relevant NBS-related research/projects that will provide opportunities for discussion during breakout group sessions.

- Chingwen Cheng and Giles Sioen (Design for Justice TWG) ([recorded video](#))
- David Iwaniec (Nature-based pathways TWG)
- Jennifer Rae Pierce (Global to Local TWG)
- Duvan López (Urban Informality TWG)
- Erik Andersson (Urban Ecological Resilience TWG)
- Yeowon Kim (Horizon Scan Themes)
- M’Lisa Colbert : ‘Food waste and food insecurity: how can urban nature based solutions help?’

David Iwaniec (Nature-based pathways TWG)

- ‘Transformative capacities and pathways toward urban nature-based futures’
- Looking to expand the team; led by Mandy Kuhn
- Focusing on nature-based transformations
- Examples of nbs in urban settings that have moved the needle in a variety of ways
- Compiling a database of them
- Analyzing their pathways to identify how to get them done



- Trying to learn from them to identify pathways we can use
- Pathways that enable or constrain the realization of positive futures
- Transformative governance framework
- Narratives, phases of pathways, processes in which they unfold, stewarding, unlocking, transformative and orchestrating capacities
- Goal: Develop/analyze database of nbs transformations
- Working on analytical methodology
- Recently added a new case studies, adding more
- This summer transition from pilot to full buildout and analysis of database
- Trying to find the inflection points and key transformative capacities associated with these successful cases

Q: What are transformative capacities?

A: Competing ideas around this, one framework shown, but what has to be done to enable these changes, enablers to lead toward transformations, what do they look like and how do we support them.

Jennifer Rae Pierce (Global to Local TWG)

- Connecting what’s happening in local practices to the largest scales of decisions
- Open to additional people; 15 members
- Overlap and coordination with Urban Nature TWG
- UBHub.org database of what is happening locally to feed into global decision-makers
- Started with publication in Frontiers in 2021
- Following with policy brief
- To put this together, NATURA supported a workshop in Geneva alongside convention on biological diversity, coordinating with action targets and the implementation to collect the national level action targets to what can be done to support local action.
- Policy brief targets national decision makers to know what they can do to scale up local actions - urban butterfly effect for larger scale impact
- Summary of recommendations of actions nations can undertake to benefit local governments and linked to biodiversity target accelerator actions

- Focusing on disseminating policy brief so that it will influence national policy, interested in support from Natura on this
- Interested in a policy brief series and continuing coordination with Urban Nature TWG
- Also moving into highlighting best practices that have been very effective
- Reviewing new Natura fellow proposals

Q: [Comment/question from David Iwaniec] How to run a policy brief workshop that ends with a brief?

A: Assume people haven't done one and identify it to end up with one, also make one, let it get rejected and rebuild it



Duvan López (Urban Informality TWG)

- Local labs: Informality Labs for resilient futures
- Work strategy: urban challenges
- Studying global challenges
- Examine the role of NBS within the context of urban informality - interrelationship between poverty, socio-economic context and ecology and conflicts that arise.
- Local partners and international support
- Relationship between nature and risks/dangers, ecological dynamics
- Also correlation between informality and poverty in human settlements, attempt to center these areas of conflict
- Obj: Methodologically structure an academic itinerary/field guide

- Want to be invited to different cities to spread and compare/contrast across LOCAL LAB sites in different locations to develop tools and guides identifying these processes
- Formal and informal sectors of the city approach NBS and nature differently

Q: Local labs are with the informal settlement communities?

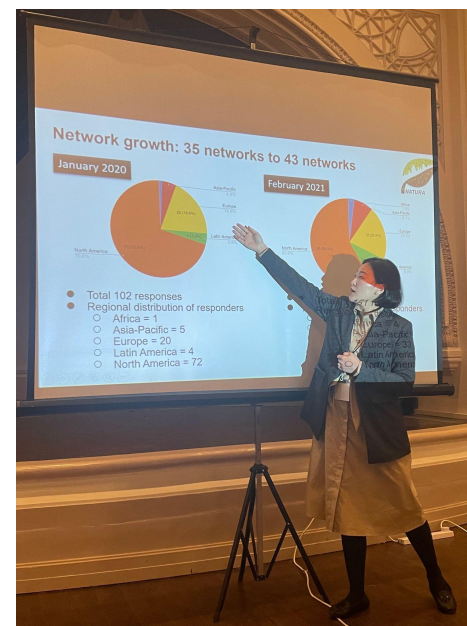
A: Yes

Erik Andersson (Urban Ecological Resilience TWG)

- ‘Ecological Resilience and Beyond: NBS fit (for fight?)’
- Foundation work being presented: to what extent are NBS themselves resilient.
- Hope NBS can help build urban resilience, but less attention to make NBS themselves resilience
- To extreme events, like heat
- New language needed; need to define language, terms like boundary concepts
- Asks: ‘diversity of what?’
- Resilience of ecological functionality versus ecological traits
- Management of NBS: emergent, cues to care, implications for management
- Looking at NBS through systems perspective
- Talk about different characteristics of management of NBS based on traits
- Identifying traits of NBS:
- Resilient functionality
- Multiple meanings
- Easy to measure
- Linked to action
- Workshop planned in late May
 - consolidate focus and plans
 - Synthesize tools/knowledge
 - Interested in others here joining

Yeowon Kim (Horizon Scan Themes)

- ‘Ideas for the Future NBS - The Natura Horizon Scan’
- Hear a lot about what are the knowledge gaps, don’t want to lose the voices of others in the



networks. Horizon scan from beginning of the network

- 5-question survey - focusing on knowledge gaps in nbs for urban resilience
- What are the long-term issues that we need to address?
- Disproportionate NA response at beginning of project
- Now more diverse, Africa still under-represented and NA still overrepresented
- Trying to increase recruiting efforts in other regions
- Knowledge gaps identified
- Public engagement policy
- Sociopolitical
- Implementation, design, and planning
- Knowledge to action; assessments/effectiveness/synergies, unpredictable nature of future challenges, provision of ecosystem services.
- Equity, providing ecosystem services, effective planning, innovation and design to meet challenges, public buy-in, eco-techno services
- GAPS BUT ALSO EXPERTISE
- Concentrating expertise to fill above gaps

Q: Clarifying who has what gaps and the pathways to address?

A: Yes, also identifying the stakeholders that are affected by bridging these knowledge gaps. Also similar presentation at a regional level tomorrow.

M’Lisa Colbert : ‘Food waste and food insecurity: how can urban nature based solutions help?’

- Local community project in St. Henri, Montreal, Canada
- Not part of a working group
- Small rural community with recent gentrification impacts
- High proportion of low-income and single-parent households
- New green infrastructure green lane project led to gentrification and displacement of low-income families
- Food insecurity a part of the displacement - high cost
- Increased awareness of food waste and to redistribute food
- Community fridge - community started project due to amount of food waste created by supermarket, our own homes, etc.
- Some people donate items, others make prepared meals from donated food

- Outlined governance structure and organizing community actions
- All-volunteer project, 1100 people
- Implemented via Facebook
- Work with city and local officials, mayor, to support
- Challenges
- How can we combine greening of the city with growing food
- Fresh produce is the big lack
- Food security has not been a priority of the city's nature based solutions projects
- Values: Inclusivity, Mutual Respect
- NBS that may support the initiative and its goals

Q: How do you sustain a project that is solely delivered by volunteers?

A: Actively looking for funding and the city helps pay for administrative staff, many volunteers are quite active and the fridge is accessible to a lot of people in the neighborhood, so many people bring food over regularly.

Q. [from Sabrina Drill] How do health regulations / hygiene impact the project? Had a similar one where I live and it was shut down for health regulations

A: We didn't ask, we built a structure, the borough neighbors know that, regularly cleaned, people label everything, but it is something to consider, it was very ground-up

Q: Have you considered an app to help connect people and food, also would be marketable and usable by other places?

A: No but that would help, that's a great idea. We're using a Facebook group right now.

Comment: An app like that is being developed in Trinity (Ireland?)

Breakout Group Plenary

Moderator: Timon McPhearson (NATURA Co-Director, Urban Systems Lab)

This plenary will be time to reflect after lightning talks and to focus on gathering ideas for the small group discussion time that follows.

Breakout Group Discussion

Participants organized into groups based on NBS ideas/specific topics gathered in the plenary.

Questions for groups to answer in breakout groups:

- What is the main question of your group? What is the spatial, temporal, and subject-matter scope? Who is involved? What networks could be brought together around this question?
- How would you go about answering it, within the available NATURA structures (regional nodes, new TWG, existing TWG, early-career fellow, TWG workshop)?
- What other products do you envision? (i.e., academic publication, white paper, podcast, research proposal, distributed course/seminar/project...)
- Would you like additional time to meet during this All-Hands meeting?

Interdisciplinarity and worldview mapping, cultural bias, transformation

Participants: Chris R, Melissa, Mariana, Elizabeth, David, Davide, Michael, Jennifer, Loan

- Role of worldviews in NBS
- There are not only different views of nature but also of solutions
- How do we understand worldviews at the interplay xxx and solutions
- Looking at transformations
- Things to look at: How do we understand ourselves, but also characteristics of solutions we are aiming to achieve
- But also potential of expanding or shrinking certain worldviews to support transformational NBS
- But need to define whose worldviews (Planners? Citizens?)
- Possibly define a tool to accommodate different worldviews towards a solution?



Equity/Justice - ensuring diverse perspectives, engagement, participation, access, food security

- Food sharing
- Citizen science
- Equitable distribution and climate change in a (SETS) Framework
- Advancing the sets framework to conceptualize power
- Map impacts of climate to understand inequities at a global and local scale
- What is the relationship with this inequity with NBS (all aspects? Who decides what and where?)
- How are we measuring where access to green is? (Typology, and social + political context)
- Mapping, equality, risk, danger, disservice, green isn't always good, distribution and access under the equity lens. What are the quality and hazards associated with different types of natural areas? Will access benefit? Will it shift the focus away from mitigation? ...Not all nature is a nature-based solution...
- Recognition of justice, procedural justice, involve the communities that use that area.
- Equity in pollution and climate justice, the critique of participatory not always equalizing power. Ex. Sovereign indigenous nations recognized by the UN?

- Whose version of justice counts? Depends on the harm being addressed?
- Who frames the problem puts a banner around the solutions you come up with?
- Gender component, and how to grow agency of those disenfranchised
- Where do you go to listen to the voices that are speaking?
- What kind of a governance context do you have?
- Connecting communities with resources?
- Access to resources...extractive vs regenerative, benign neglect,
- Who adjudicates the choices?
- Whose knowledge counts? Time to engage?
- Connections between ecosystem services?
- Aspects of intersectionality between access to resources, gender, vacuums of power.
- Informality in cities, and solutions for whom? Building solutions out of code? If you are too strict about how you're going to help?
- Levels and degrees of challenges for many.
- Thinking about Puerto Rico makes me think about New Orleans.
- Disciplining of environmental citizenship
- Citizen led initiatives and response time and effectiveness
- Map out in a broad way the governance aspects of each NBS context and see if the issues are generally the same in each case? Is the governance context, determining the issue?
- Post-colonial impacts and context
- The context of scale and how big solutions need to be?
- Responded through lived experiences and case studies
- How do you define injustice?
- A rich storytelling around what can be done based on the research.

Health - mental/physical - human well being

- Polish law - food security must be present in urban areas but not always enforced.
- Research has progressed: Restorative experiences - perceptions of green - forest bathing
- Health information missing from spatial modeling - challenge to make practical models

- How do we harness empirical research and add on health promoting green? Which type and how much nature?
- Cultural aspects - can what works in one area convert into another area e.g. what works in Sweden will it work in Ireland?
- All nature is good for our health - is it meaningful - satellite imagery isn't going to pick up the meaningfulness of nature on the individual level
- The experience can be more important than the actual scale of the natural space
- The perception and the richness of environments is important
- CWN is important for mental health benefits e.g. stress
- Can't generalize on this - individual differences (don't be reductionist)
- Exposure versus perception versus interaction
- Adverse effect on nature connection and experience
- Multiple explanations as to why women are more caring/connected - biological? Cultural?
- Local ecosystem is important to experience
- Social and environmental constructs influence this
- A space does not force a behavior but allows for it. Certain experiences don't allow for restoration in comparison to others. Not causation.
- How do we differentiate between green/blue and move to a more balanced approach and appreciation for their benefits
- Synergistics approach to NBS and MH/PH
- Importance of perception and relating it to deterministic approaches
- Anybody in health, biodiversity researchers, NBS researchers

Design and innovation for future challenges: NBS for what?

- Future challenges in urban areas? Lack of space, increasing population density, rising temperatures and other climate risks. We might lose nature before we get inspired. Technological advancement is faster than building infrastructure. Yesterday's solutions are today's problems. Focus needs to shift from having rigid and robust systems that can last longer, but flexible systems that can adapt to changes.
- Cities have higher biodiversity in some cases because forests are managed and biodiversity is lost.
- Any research scope? Any particular sub-questions that you can identify?
- Solutions to what future changes?

- Fire
- Flood
- Extreme heat
- Drought/water scarcity
- Changes in human needs
- Loss of biodiversity locally/regionally/globally
- Shifting biotic ranges
- Narrowing the gap of high - low income population
- Infrastructure might need to change more rapidly to adapt to changing needs
- NbS can provide flexibility to adapt faster
- How do you plan for challenges that you are not aware of?
- NbS get efficiency with time as well - tension in the assumption that nature is easily adaptable
- Tradeoff between efficiency and value
- We need to address biodiversity loss and cities could provide refuge
- Cultural aspect to maintain NbS
- Example of cutting grass: the system is too rigid. Without proper regulation the system will proceed as normal.
- Treating the city as a living organism instead of a technogarden
- Ensure that we recycle the resources
- Resources are a key: human invention, land, biodiversity, water. Will your Nbs survive if the resources are cut? To what degree is it self-sustaining?
- Communities cannot be burdened with supporting NbS that require resources that communities do not have
- Rewilding nature idea (from Swedish arboretum example), sometimes when the finance is removed nature takes over
- Depending on the question, 'what is the primary function?' Nbs can have levels of management: from managed to unmaintained. Example: water management NbS should be managed more than a forest.
- What are the biggest challenges in urban areas that need to be addressed with NBS (climate risks?)
- Future challenges in urban areas? Lack of space, increasing population density, rising temperatures and other climate risks. We might lose nature before we get inspired. Technological advancement is faster than building infrastructure. Yesterday's solutions are today's problems. Focus needs to shift from having rigid

and robust systems that can last longer, but flexible systems that can adapt to changes.

- NBS need to be more flexible systems so we can adapt - no need to last for a long time (20-30 years)
- How can NBS address climate risks and loss of biodiversity & Narrowing the gap of high low income population
- In terms of design and innovation need to think about next generations' needs (which might be different from current needs)
- Conserving natural resources or using/recycling resources when implementing NBS?
- NBS need to provide ecosystem services to communities
- What paper could be brought around these Qs? Data sharing (some regions have rich data sets and some do not!)
- NATURA networks, researchers, and practitioners can provide evidence of success. And It is necessary to share failures too so cities can learn from mistakes.

Biodiversity, rewilding, ecological (non-human) justice

- Develop a typology of different diverse NBS connected to green infrastructure
- Connectivity and complementarity between different NBS to support species - wWhat would we need to co-locate different types of NBS to create a landscape approach
- Cross roads between language of current discourse for nature/rewilding and the past - shifting ecological context
- Perception of what is a weed or 'good' urban habitat
- Temporal and function of interstitial spaces - patch diversity. We see this more in the agricultural literature.
- Removal of overwintering habitat (leaf waste) in urban areas. We rarely measure these impacts. Good examples of this kind of monitoring in the US through partnerships with universities and agriculture.
- How do we engage with people with the idea of wild spaces versus highly managed green spaces?
- Contestation between biodiversity versus availability of greenspace for recreation. Mapping of values suggests that people want both.
- Communication of biodiversity value, ecological literacy

- Why can't spaces be both biodiverse and recreational or utility use. Ecological design that incorporates multi-species perspectives.
- Lack of baseline co-created data about how society values urban nature.
- Are there practitioner networks that have access to this data that we're not connecting with? CNCA (top 30 cities, some European networks)
- Evolution of language and communication on BD
- How can we mobilize an ecological food web/landscape complementarity approach to designing effective urban NBS?
- How can we advance both functional approach as well as community structure approach to NBS implementation and management?
- How can we better assess the role and value of ruderal species (weedy spp.) for NBS?
- How can NBS be spaces to conserve not only common species, or increased diversity, but also rare and threatened species?
- What are the unique qualities of urban landscapes that we could build on?
- How can we shift the language about plants and insects to reconnect people to nature and enable 'non-natives' as NBS?
- How can we better communicate the value and importance of biodiversity?

Post-breakout Synthesis

Group 1: Worldviews - Chris Raymond

- Different world view of nature, different world view of problems, and solutions.
- Characterize world view in context of nature and solutions
- Understanding of self and non-self in relation to nature and solutions
- Rockstrom planetary boundaries concept: expand or shrink worldview in the light of different NBS
- How can we promote solution spaces that target or appeal to dominant world views in specific contexts? - what worldviews are alternatives?

Group 2 Equity - Natalie Gulsrud

- Group had a wide range of peerspectives, was diverse
- How do we address issues of justice in NBS?
- Shared case studies in different cities
- Build up to broader questions about justice in different contexts

- Intersectionality? Nested? Governance systems
- Extractive vs. inclusive institutions
- SETS perspective, cross-cutting
- Services or disservices of NBS

Group 3 Health & well being - Matteo Giusti

- Now just nature but also perception of nature that provides mental-health benefit
- Not only green infrastructure, but a more nuanced idea of what is nature
- SETS perspective for services, health

Group 4 Design and innovation future - Yeowon Kim

- Future challenges? Population density? technology>> needs, need shifts?
- Two questions
- Equity codes, ecological codes, technological codes
- NATURA can provide examples of successes but also failures.

Group 5 Biodiversity, rewilding - Erik Andersson

- Language laden with values, experience and exposure to nature, information/knowledge

Day 2 Takeaways

Tuesday, April 5, 2022

[Visit this link for photos from the meeting!](#)

NBS Roadmap: presentation and group session

Moderator: Timon McPhearson (NATURA Co-Director, Urban Systems Lab)

[Download the audio file to listen here!](#)



Presentation by NBS Roadmap TWG leads and members: Loan Diep, Erik Andersson, Timon McPhearson, and Yeowon Kim . Breakout session Mural board

NBS roadmap format

- Co-created with practitioners - do that in regional nodes
- MOU for bringing people together - have a template - mandatory representation from different planning offices etc.
- Infrastructure and research through Horizon 2020 - together; NBS is key component
- National agreements
- Vienna case – 60% public housing and right to city - good example; alongside green city concept; resisting gentrification
- Structural solutions
- ARUP - create scenarios - experiential trends - take into account dynamics/changes/ transformations; what are the key areas - projecting in future



- Take into account scaling up
- Private sector - future proof strategies;

NBS Global Roadmap
All-Hands Meeting 2022

GROUPS
6-7 people

TIME
45 minutes

PHASE 1

QUESTION 1

What are NBS **opportunities** and **challenges** in your region?

What are the current main NBS drivers across stakeholder groups in your region? Are there policies in place? What are the main (dis)incentives? What are knowledge gaps? What evidence is needed to encourage institutional uptake and investment?

QUESTION 2

Can you share NBS **case studies** that can enhance our understanding of NBS challenges and opportunities (whether successful or not so successful)?

Case studies that do not only focus on an infrastructural intervention, also those which make us understand the enabling environment; NBS for what purposes/what functionalities and at what scale(s)?

Group 1

Region	Challenges	Case studies	Opportunities	Case studies
Europe
Africa
North America
Middle east
Latin America
Asia-Pacific

Group 2

Region	Challenges	Case studies	Opportunities	Case studies
Europe
Africa
North America
Latin America
Asia-Pacific

Group 3

Region	Challenges	Case studies	Opportunities	Case studies
North America
Europe
Africa
North America
Global
Latin America
Asia-Pacific

Group 4

Region	Challenges	Case studies	Opportunities	Case studies
Europe
Africa
North America
Latin America
Asia-Pacific

Group 5

Region	Challenges	Case studies	Opportunities	Case studies
Europe
Africa
North America
Latin America
Asia-Pacific

Group 6

Region	Challenges	Case studies	Opportunities	Case studies
Europe
North America
Latin America
Asia-Pacific

Group 7

Region	Challenges	Case studies	Opportunities	Case studies
Europe
Africa
North America
Latin America
Asia-Pacific

"Online" group

Region	Challenges	Case studies	Opportunities	Case studies
Europe
Africa
North America
Latin America
Asia-Pacific

Africa

Challenges

- Rapid urbanization
- Informality and land rights
- (Lack of) political will and private sector buy-in
- IPLCs not included

- Cases in Europe and N America not always replicable

Opportunities

- Linking gray infrastructure to development (including social development)
- Tree planting

Cases

- Cape Town ecological preservation in urban informal settlements
- South Africa (related to flooding in Cape Town and Durban)
- Peri-urban Buffelsdraai Reforestation Project

Europe

Challenges

- Legislative gap between EU and national/regional governance
- Implementation challenges (community needs not addressed, just reinforcing existing problems)
- Project-based approaches which are not systematic
- NBS acceptance in planning
- Impact value - biodiversity, functionality, compatibility
- Green New Deal and Euro Commission - conflicts
- Conservation-focused
- Large, central cities have resources, unlike smaller cities which don't have access to funding
- Regional differences across Europe (esp. West-East)
- Instability of municipal priorities ('trendiness')
- Branding, PR of green/blue infrastructure or NBS
- NBS not connected to other urban agendas (e.g., SMART cities)
- Implementation is piecemeal (e.g., Build Back Better project)

Opportunities

- Evidence of clear health benefits of NBS
- Demonstrated cost-effectiveness of NBS
- Knowledge-sharing
- Multilateral coordination and linking NBS to other urban agendas

- Public input to drive change
- Youth climate activism
- Post-hostility rebuilding
- Complementary co-benefits - social cultural ecosystem
- Emerging Technology and biomaterials
- European nature restoration law (June 2022)
- European municipalities with more than 20,000 inhabitants are supposed to develop urban greening plans

Cases

- London Olympic Site
- EU Capital Award
- Green roof of the library of the Uni of Warsaw
- Tyne Estuary Partnership
- Growing Green Communities (Build Back Better fund)
- Red Green Coalition in Munich
- UK Water Industry Assessment Management
- Malta ReNature - Connecting Nature
- GreenCities case studies
- Finnish municipalities are implementing NbS as a part of greening plans
- Leiden municipality (NL) neighborhood retrofitting
- Copenhagen
- Stockholm
- Lodz
- Gavle
- Radom
- Poland: urban ecology planning since 70s
(<https://biodiversity.europa.eu/countries/poland/green-infrastructure>)
- UNESCOSOST has tested positively a NBS technic to remove pollutants from agricultural activities and favor grave industry in Catalonia

North America

Challenges

- Difficult to quantify monetary and other benefits of NbS

- Perception that GI doesn't perform as well as gray infra
- Need regional NBS to “compare apples to apples”
- Difficulty of getting dedicated funding
- Scales of implementation limited by levels of funding
- Aging infrastructure
- Data is not going to the right people
- How to design and scale NbS for extreme weather
- Policy makers lack information
- Evidence needed: Cost for value + impact scenarios, achievable deliverables attached to investment, scenarios of achievable deliverables matched to NBS options
- Main Drivers: Climate Change, Urbanization, Changing social values
- Pitting NBS and inequality against each other - need a narrative shift about how GI goes in gentrifying places not that GI causes gentrification

Opportunities

- Interregional differences in the power of communities/CBOs
- Community support food and resource networks
- Cost-benefit analyses that add in multipliers for social benefits, equity benefits, and ecological benefits helps compete with gray/traditional solutions

Cases

- San Antonio Waterfront (<https://www.sanantonio.gov/CCDO/riverwalk>)
- Elizabeth River Project (<https://elizabethriver.org/>)
- Corporate daylighting in downtown cities
- Rooftop urban Farming/greenhouses:
- Citizen green lanes in Montreal
- Funding after California wildfire crisis to address issues
- Staten Island Blue Belt
- USDN working on unlocking NBS benefits as opposed to gray/traditional solutions

Latin America

Challenges

- Historical injustices perpetuating the problems

- Priority on water resource management but lack of sanitation investment
- Agriculture and livestock
- Govt. Corruption
- Lack of trust in institutions
- NBS term is not commonly used (rather using 'ecosystem-based', urban biodiversity)
- Language / Jargon are disconnected from concepts and needs
- Knowledge gaps on the role of historical and current colonial power relations and other local/global uneven power relations
- Gaps in cost-benefit analyses for NBS (e.g., how it is done, by whom, for whom)
- Gaps in mapping of actors and NBS knowledge
- Gaps in measurement and monitoring of ecosystem services multifunctionality and disservices within context of climate variability
- Data gaps on ecosystem functionality and resilience to extreme weathers
- NBS can create jobs but also further inequalities (those knowledgeable get jobs)

Opportunities

- Indigenous networks
- The Peace Agreements recently brokered – restorative justice
- empowerment of marginalized communities
- Leveraging capacity/funding opportunities available to private companies and nonprofits
- New urban development & planning can incorporate NBS because of new development (as opposed to already highly developed areas)
- Research on biodiversity and integration with NBS
- Top-down governance may drive NBS policies; NGOs and communities drive NBS implementation
- Traditional agricultural practices still active (Mexico, Brazil)
- In Puerto Rico, policies mostly related to forest/ habitat-species conservation; watershed and soil conservation; State (Environmental law; Forest Law), Municipal (ordinances some cities) and Federal (species conservation)

Cases

- RECNET climate risk study

- The Bogota River is one of the most polluted rivers in the world and probably one of the oldest projects of water sanitation
- a NBS technic recently introduced in the country called Bioingeniería used to introduce vegetal species taking advantage of natural functions to control runoff and land stabilization
- Corruption - Venezuela's civil crisis and international conflicts
- Private ecotourism companies implementing NBS in communities - Mexico, Venezuela, Colombia - RedeAmerica (<https://www.redeamerica.org/>)
- traditional agriculture practice still active in developing countries (Philippines, Mexico, Brazil)

Asia Pacific

Challenges

- Lack of compliance with existing regulation (India)
- Australia - Billions of dollars going towards dubious carbon credits e.g., to 'save' forests that were never intended to be cleared (Australia)
- Australia - tensions between bushfire risk management and biodiversity
- Australia - rapid increase in land prices fuelling subdivision and loss of NBS
- increase in densification and urbanization. How NbS is going to be incorporated?
- Integrating biodiversity in NBS
- Resource-intensive NBS

Opportunities

- Traditional cultural and religious linkages between people and nature
- Compliance with existing regulations derived from top-down governance approaches (Japan, China, Singapore)
- Expertise on solving relevant environmental (sanitary) problems that can be transferred
- Trees in TCD planted to suit future climates
- Rethinking biodiversity offset policies and carbon credits - no net loss
- Rapid growth as an opportunity to implement NbS
- Retrofitting neighborhoods (gray infra) - also 'retrofit'/green them according to urban challenges

- Integrated biodiversity
- China: funding available; afforestation targets
- Traditional agricultural practices still active (Philippines)

Cases

- Kitakushu pollution reduction project
- Cheonggyecheon project
- Adelaide - recent study on death of green spaces by 1000 cuts
- Singapore green plan 2030 as an example of multi sectoral policy implementation
- Sejong Special City, South Korea - city-wide water resource management plan
- <https://www.theguardian.com/environment/2021/sep/22/one-in-five-carbon-credits-underaustralia-main-climate-policy-arejunk-cuts-research-finds?share=reddit>
- <https://www.theguardian.com/environment/2022/mar/23/australias-carbon-creditscheme-largely-a-sham-sayswhistleblower-who-tried-to-reinit-in>
- Regenerating Australia <https://theregenerators.co/regenerating-australia/>

Middle East Africa

Challenges

- Disconnected from global conversation
- War and conflict

Opportunities

- Faith-based approaches to human-nature relationships

Cases

- See: <https://onlinelibrary.wiley.com/doi/10.1111/gcb.15513>

Early-Career Network Research Presentation

Moderator: Yeowon Kim (NATURA Executive Team member, UREx SRN)

[Download the audio file to listen here!](#)

- Presentations from members of the NATURA Early-Career Network

Zbigniew Grabowski (SETS Convergence, Urban Systems Lab)

- Green infra in the US
- Lots of hybrid infra
- 20 cities across the US: many of them leading GI as the predominant type of NBS in the US but overall talking about it in different ways
 - Squares diagram: in the top they explicitly use GI term (green) and implement it “properly” as opposed to those in the bottom which don't address it
- Landscape level planning type of conservation
- Who is the society? What are the goals? Who's this going to serve?
- How do we want planning to function? Diagram from conceptualisation to new geographies of values of GI
- Most of the plans reviewed are not explicit about equity and justice issues - most planners not thinking about causal processes
- Life cycle of GI diagram: showing how it is predominantly a social process
- Physical landscape <-> societal change
- Geographies of NBS match GHG emissions map (TNOC blog) - equity questions about who's pushing agenda
- Link to decolonized regime
- Democratic is used in a sense where there is a general consensus



Megan Maurer (ENVISION, VIVA-Plan)

- Cultural anthropologist by training but working in an interdisciplinary environment

- Interested in the relationships human-nature and how these affect production of inequalities
- How the human are entangled with the non-human in an everyday basis in the face of the climate crisis
- SMARTer Greener Cities
 - Smart technologies to conduct PPGIS for more just NBS
 - Paper on the multi-sensory aspects of NBS
 - Youth inclusion and intergenerational justice (?) framework for planning
 - Conflicts over biodiversity conservation and restoration in Copenhagen
- Focused on getting biodiversity a better focus (Also biocultural biodiversity)
- WE are changing a lot the landscape of cities and thinking about how this changes everyday urban life
- Walking and listening as methods

Joeri Morpungo (Natural Capital Project)

- Consolidated urban GI classification
- Expensive LR with 9 different GI perspectives (urban heat island, etc.) and 4 different taxons (mammals, etc.)
- Classification made to be easily reusable across the world
- Aiming to inform multifunctional ES and biodiversity research

Yuliya Dzyuban (URExSRN)

- Introduction of project currently working on for postdoc in Singapore School of Economics/Management (tbc)



- Goal of the project is to address urban heat challenges
 - Planting one million tree scenario and difference between small and large parks
 - Case study park also provides flood management type of services
 - Feedback into microclimate modeling and analysis of scenarios

- Thermal analysis to assess thermal comfort (?) but also exploring how sounds affect their perceptions
- Also working on the feeling of pleasure in the city

Konrad Buzinski (UNESCO European Regional Centre for Ecohydrology)

- Functions of the allotment garden as element of blue-green infra in the city of Lodz
- Lodz post-industrial city of Poland - affected by heatwaves and pollution. Population is aging.
- Differences between formal and informal spaces
- Urban allotments are refuges for Lodz' residents and can provide them with happiness
- In the past many allotments characterized by community cohesion - strong community feeling
- Allotments : from agricultural to recreational functions/provision of ESS
- Allotments and multifunctionality/provides of multiple functions

Cassie Murphy (GoGreenRoutes)

- PhD on nature interconnectedness
- Everyone has a different relationship with nature and this changes over time
- Looking at 'what is nature to people?' how can we really assess how for example people in a wheelchair's experience of going to the beach
- Did a collaborative survey on the perception of nature in the time of COVID-19
- Nature was participants' social connection during the pandemic
- Did data collection (?) with 'experts' but led to thinking 'what is an expert?'
- Also interested in the cultural aspect of this and the notion of safety in nature interconnectedness
- Interviews showed that childhood experience is key, people's preference is key (you will be more connected to blue space if you want to go to a blue space!), and nature is their friend

Karin Burghardt (Baltimore LTER)

- Community ecologist (insects, including caterpillar)
- Exploring street -tree communities in Baltimore, Maryland
- Looking at how diversity patterns are represented

- When breaking down with larger trees: small trees reflect (recent) investment in the city
- Arguing we need to think about the distribution of species when investing in NBS
- Also interested how management is affecting insect communities
- In Maryland, recent bill to plant 10 million trees, but this will change distribution of insect and this will affect their life cycles

Matteo Giusti (Future Position X)

- PhD on children's connection with nature
- In order to develop different types of connection with nature you need different types of nature experiences
- Mindfulness and restoration correlations
- Geographical analysis of Gavle (permeability etc.)
- Study of people: geographically explicit analysis of health - use of an app where people can report how they perceive nature
- Combine info of where people go with health rate variability (geolocated health data)
- Baseline surveys on seasonal levels

Laura Costadone (ECN)

- Pilot ecosystem accounts for ESTAT2020
- 3 pilot cities in Finland, doing ecosystem analysis and ecosystem supply assessment
- Digging into data availability (major obstacle to implement these ecosystem accounts)
- Also involved in biodiversity-friendly city projects
- Leading the 'Greening cities' project
- Under Biodiversity2030 strategy, cities over 20,000 inhabitants need to have a green plan
- This should help mainstream urban green development, together with citizen engagement
- LR reveals the mess of European guidance...

Claire Cooper (NATURVATION)

- PhD results on relationship between heart and respiratory diseases and NBS

- Looking at different health indicators focusing on mortality and the ecosystem services NBS provide for health
- PhD filling gap: we don't know which types of NBS have an impact on health
- Used indicators of health from the Urban Atlas
- Found strong relationships between green roofs, green walls, parks (lack of?) and mortality
- Gender as an influencing factor but not consistent through time
- Looking at different stakeholders' perspectives
- Also looking how people interacted during COVID

Mariana Hernandez (Connecting Nature)

- There are many questions about the future in cities will look like (will NBS be part of it?)
- Will start research with a systematic review of NBS and participatory planning in cities of the Global South
- Analyze whether cities are moving towards desirable futures

Melissa Ingaruca Moreno (ECN)

- What is the transformative potential of NBS urban innovation (an integrated view of systems SETS)
- Looking at sets of cognitive technologies e.g., use of AI for design of NBS
- When talking about transformation, need to look at worldviews
- Since we agree we are facing multifaceted crisis we need to think about the crisis of values
- Scale of worldviews relates to dominance of certain regimes enabling or not alternative (niches) to take more space
- Dominant regimes are made of sets of internally consistent (stable) paradigms
- How is innovation to part away from the dominant paradigms
- We should also understand how worldviews are not static
- E.g., Transhumanic thinking does not question hierarchies and it's important to challenge since many of the technologies in place come from this narrative
- We should be able to track what worldviews influence our systems

Concurrent Work Sessions



**Session 1:
Early-Career
Network Gathering
and Working Session**

*Moderator: Yeowon Kim
(NATURA Executive
Team member, UREx
SRN)*

Session 2: Open work and discussion time

Field Trip

Field Trip Guide: Mario Balzan (NATURA AHM Planning Committee Member, ReNature)

Tour of the Valletta Design Cluster ([Valletta Cultural Agency \(gov.mt\)](http://valletta.culturalagency.gov.mt)) and local Botanical Garden



Day 3 Takeaways

Wednesday, April 6, 2022

[Visit this link for photos from the meeting!](#)

Micro Talks

Moderator: Marcus Collier (NATURA AHM Coordinating Committee Member, Connecting Nature)

Brief presentations from NATURA members on topics/ideas gathered during Days 1/2.

Erik Andersson - Smarter Greener Cities

- Andersson, E., Grimm, N. B., Lewis, J. A., Redman, C. L., Barthel, S., Colding, J., & Elmquist, T. (2022). Urban climate resilience through hybrid infrastructure. *Current Opinion in Environmental Sustainability*, 55, 101158.
<https://doi.org/10.1016/J.COSUST.2022.101158>
- Branny, A., Møller, M. S., Korpilo, S., McPhearson, T., Gulsrud, N., Olafsson, A. S., ... Andersson, E. (2022). Smarter greener cities through a social-ecological-technological systems approach. *Current Opinion in Environmental Sustainability*, 55, 101168.
<https://doi.org/https://doi.org/10.1016/j.cosust.2022.101168>
- Hybridity - another way to look at GI
- Intersects with gray infra and people - they are SETS infrastructure
- Resilience - multiple ways of looking but here looking at resilience to new disturbance regimes
- What does resilience looks like in that context
- Layers of resilience needed that are complementary
- With increasing magnitude, need greater robustness or greater capacity for recovery or both - otherwise collapse
- Disturbance
- Before, preparation, during, after
- Attenuation, connectivity, reorganization, and flexibility aspects of resilience to evaluate for in the below:
- Link to resilience
- Green/blue infra/ecology
- Built environment/engineering
- Hybrid infrastructure
- Hybrid infra can contribute to all of these aspects of resilience
- Jennifer Rae Pierce 'Urban Nature Measurement and Reporting'
- Global policy measure recently released, it's a IUCM measurement product

- Recording on the GPSC Webinar Series
- Many great updates and presentations linked there
- <https://www.thegpsc.org/events/gpsc-webinar-series-bringing-nature-cities-measuring-and-reporting-urban-ecological>
- Urban Nature Index: intended to be aware of and incorporate other indexes
- In cases where measuring what is captured by another index, accepts those indexes' scores
- But is more comprehensive
- https://iucnurbanalliance.org/tools_and_resources/resource-1/?utm_source=rss&utm_medium=rss&utm_campaign=resource-1
- Flexible based on the capacity of the city
- Capacity evaluated through survey
- Items to complete range 6 - 30 depending on capacity of city
- Six themes with five indicator topics each
- Minimum one question per theme for a 6-factor score
- Then merged at thematic levels
- Themes:
 - Consumption drivers
 - Human pressures
 - Habitat status
 - Species status
 - Nature's contribution to people
 - Governance responses
 - Impact levels
- Combines elements of social and environmental assessment
- Mapped against equity, local, hinterland, global, connectivity
- Cities can get tailored ways of reporting approved to fit their city
- Working with TNOC platform features
- Singapore Index integrated into the tool for the beginning
- Measurement development orgs are in conversation to develop these tools collaboratively

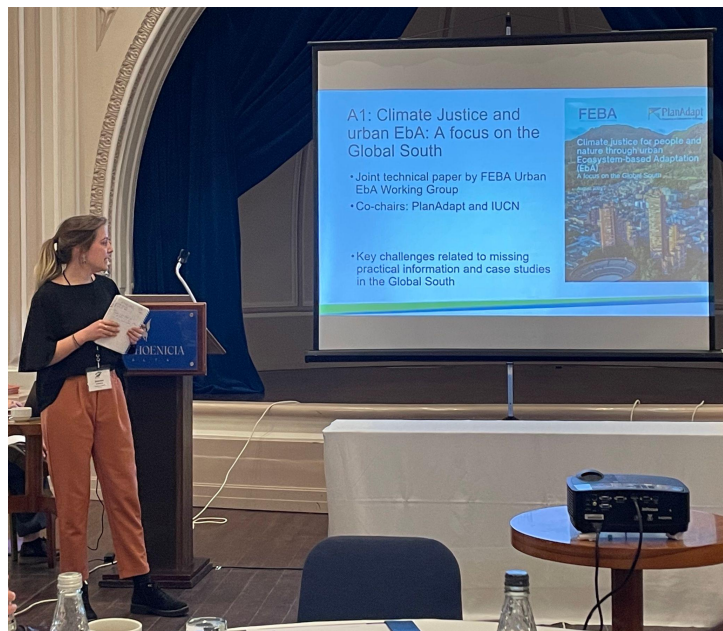
Zbigniew Grabowski - Design for Justice Thematic Working Group Synthesis

- How to evaluate the intersection of justice and NBS? Drafting a paper following up from the white paper/blog
- Large literature of justice, trying to synthesize this lit on what justice means and see what that means for just NBS practice

- What does justice-informed design around NBS look like?
- Mapping transformative, recognitional, procedural, restorative, and distributional justice in relation to one another
- Transformative justice: consider entire system of injustice and the ways that systems tasked with redressing injustice also perpetuate harms and need to be addressed themselves
- Need to interrogate foundational assumptions, institutions, and procedures of societies for injustice
- Also considering:
 - Critical EJ
 - Indigenous EJ
 - Ecological Justice - consider nonhuman perspectives in this process as well

Alannah Hofemeier - ‘Strengthening Just outcomes in urban NBS’ - PlanAdapt

- Equitable, socially-just and economically fair solutions
- Including NBS and climate solutions
- Paper in progress: Climate Justice and urban EbA: A focus on the Global South
- FEBA and PlanAdapt collaborating
- Key challenges related to missing practical information and case studies in the Global South
- Climate justice
- Social principles of urban EbA
- Participation and inclusiveness
- Capacity building
- Fairness and equitability
- Gender consideration
- Livelihood improvement
- Appropriateness of scale
- Integration of indigenous and local knowledge
- In-depth case studies



- 31 gathered through survey
- Example Palmiet River Rehabilitation Project (PRPR) - Durban, South Africa
- Activities to reduce flood risk
- Focus on women and youth

Rik De Vreese - European Forum on Urban Forestry / Clearing House

- Event, 17-21 May 2022 Belgrade Serbia www.efuf2022.com conference upcoming, plenty of spaces available
- Green4C Business Innovation Challenge - opportunity to access Green4C Summer School
- Beyond business
- Any good idea nexus, many relevant to here would be welcome
- UForest network
- Should link with NATURA!
- Many universities involved
- Developing an e-learning course (avail Autumn)
- Urban greening projects
- www.uforest.eu
- Inspirational package for pre-teens: Urban Forests as nature-based solutions
- Available in several languages
- Very successful so far
- Beyond environmental education
- <https://clearinghouseproject.eu/city-of-trees>

Christopher Kennedy - Ecological art in cities

- Exploring the potential for art to promote and advance nature-based solutions
- Art and design effective to engage youth and communities to have experiences together
- Getting designers to think about sustainable design
- Using nature as interface for experiences - environmental performance agency
- Work with urban plants of NYC as a lens to think of new ways of organizing and thinking about environmental justice
- Shift perspective about our relationships to nonhuman life
- Embodied scientist parkour
- Multispecies care survey: website with activities and protocols to interrogate relationship to nature and other species
- Global archive of how we related to nature during Covid
- Ecological art: creative practices that take inspiration from natural systems

- History evolved from 1950s on
- Bringing urban ecological issues into the public realm
- Functions
- Art and regeneration
- Remediating damaged landscapes
- Envisioning positive solutions
- Bridge-building with planners and communities
- Examples from various cities
- Visually communicating sea-level rise
- Participatory re-greening/planting procession
- Community garden as art project
- Liaising on daylighting river

Yeowon Kim - Failure stories and NBS for flood mitigation in various climate conditions

- Hard to find stories of attempts that have failed!
- Important to have accounts of NBS that did not work or effectiveness was less than expected
- Working on a report
- Starting with flooding but can expand from that
- Valuable way for us to learn from each other

Roy Remme - Pioneering science, technology, and partnerships that enable people to thrive

- InVEST tool: urban models relatively recent addition
- Updates relevant to urban
- Climate change mitigation
- Access to open space
- Urban cooling
- Flooding mitigation
- Case studies, building user base
- China, Europe
- Exploring equity
- Adding social data
- Defining a 'disparities index'
- See changes over time
- Wallpapering - rerun models with changes to land use
- Comparisons across cities using this data/model

- Ready for most major US cities
- Next steps
- theory/models, building out the platform, looking on temporal scales
- Opportunity to use case studies for capacity building
- Integration more broadly into national/global scale

Timon McPhearson - Nature-based Solutions for Cities book

- Chapters from many NATURA folks
- Targeted as primer for grad students on range of what people are doing and state of the research
- Mix of authors:
 - from around the world
 - established and early-career
- Will be available for free online through open-access (Can also buy a physical copy)NBS for what?
- For whom?
- Health outcomes
- Mental health
- Biodiversity
- Urban Ecological Resilience - species traits
- Comes from NATURA thematic working group
- Governance
- planning/maintenance
- Stormwater
- Heat
- Mapping, measuring, and valuing
- Urban designs as social-natural resolutions
- Ecological art in cities, art as NBS
- Stories of radical imagination and the art of NBS
- Keep an eye out for it soon

Tadgh Macintyre - Go Green Routes

- Public perception of NBS is through health and wellbeing
- This needs to be centered for successful implementation
- As primary rather than co benefits
- GoGreenRoutes summer school 360 Health: where nature and health rhyme late June/early July

- Sleep is an indicator of wellbeing but not often measured
- Creating a metric for cities of their positive and negative environmental characteristics
- Not just toxic elements
- Keynotes by vote
- audience decides on topics, dance between audience and presenters
- Range of presentation types including activity
- Classified - designed by ECR's for ECR's
- Need profitable ideas for them to get anywhere
- Confession room to share
- Competition
- Early Career fellows can apply to be hosted
- GoGreenRoutes may sign up to host

Duván López - Local LABS strategy

- Movie shown: <https://www.youtube.com/watch?v=KANJ4VwbsOo>
- Projects on implementation: <https://www.recitynet.org/>
- Question of the Local LABS strategy: How we provide urban form to informal city?
- NBD is very much about introducing certain forms into the landscape, with an intentionality to channelize a dedicated balance between the SET dynamics
- In this sense NbS is an appropriate approach to understand how to provide a balance in the urban form
- UNESCOSOST /RECNET offers local laboratories in Bogotá, Medellín and now in the Mediterranean area thanks to projects under development
- <https://www.unescosost.org/informality-program>
- <https://www.unescosost.org/post/unescosost-seleccionado-justicia-global-barcelona>
- <https://www.unescosost.org/post/approved-a-new-project-surenexus-eu-prima>
- The role of RECNET would be to accelerate the interaction between these projects and the Academia having as local hubs the University La Salle / Technological Institute of Medellín /UPC-Barcelona
- The collaboration will consist on intersect the early career research and practice offer into a training process about urban form including: ontological discussions, epistemological instruments to enhance sensibility, design and planning approaches, implementation methods and governance gaps. Other collaborators welcome
- We remark Relationship between truth, sensibility, harm recovery and environmental health. The restorative justice agenda with the environmental recovery agenda
- We kindly invite you to continue in this discussion next April 26th at noon (NYC) see the link for the academic agenda to be developed with Spanish / English simultaneous

translation

<https://docs.google.com/document/d/1827BLtalozr745cgmDgSnjb2DIWmcpsGoJ5KdO19Cgg/edit>

Network Presentation: NBS Roadmap Follow-Up

Moderator: Timon McPhearson (NATURA Co-Director, Urban Systems Lab)

[*Download the audio file to listen here!*](#)

Follow up to the NBS Roadmap session from Day 2 to discuss the way forward

- Core next steps + essential questions to bound the project, still figuring things out
- Virtually to increase participation and be more inclusive re time zones and different regions
- Still fuzzy regarding impact on policy
- Core group will continue working on this
- Planning out the virtual sessions and repeat what was done here in Malta
- Loan will be in touch
- Also want to bring in local representation
- Suggest that the core group develop a charge for the reg nodes to think about the type of info wanted/needed (to better recommend and approach local experts)

Panel session: NBS Policy Around the World

Moderator: Elizabeth Cook (NATURA Co-Director, UREx SRN)

Download the audio files ([file 1](#) and [file 2](#)) to listen here!

Gather around a panel of practitioners on national and international policy on NBS!

- Jennifer Rae Pierce (Urban Biodiversity Hub, North America)
 - Usually funds come after an emergency happens but after these emergencies, land use accommodations plans are not well planned.



- Kristin Baja (Urban Sustainability Directors Network, North America)
 - Rethink of ownership and success, move beyond the planning process and take the data to the implementation process.
- Natalie Gulsrud (European Forum on Urban Forestry, Europe)
 - Trade-off of big infrastructure planning such as transportation options like railroads. There is political window open for change
- Elvia Meléndez-Ackerman (San Juan ULTRA, Latin America)
 - Most of the projects are small scale (small fundings). Lack of monitoring and metrics to measure success.

Breakout group discussion

Moderator: Loan Diep (NATURA Executive Team member)

Continued individual time to further work with other network members (thematic manuscript, proposal, or other work development)

Group 1: Interdisciplinary and worldview mapping, cultural bias, transformation

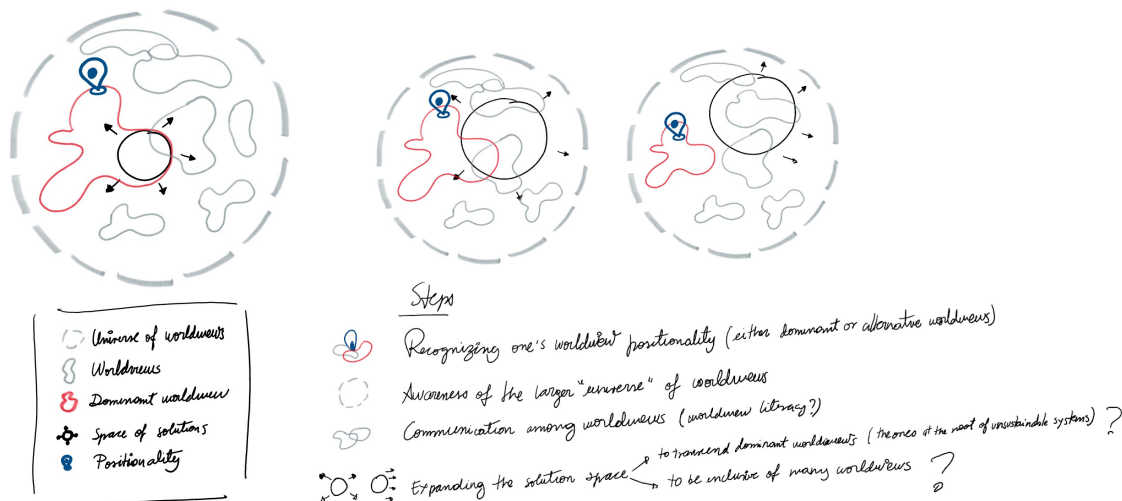
Speakers: Melissa Ingaruca Moreno and Jennifer Rae Pierce

Future proposal to set up a TWG

- Aims: Design of universe/space of worldviews to find positionalities within that space. Within that space we are recognizing what is the dominant worldview and want to see how to expand/shrink the space occupied by different worldviews

Conceptual reflection:

- How do we expand the solution space to design urban NbS that don't carry dominant worldviews and are inclusive of alternative worldviews ?
- How do we make sure that NbS are not reproducing dominant worldviews (human-nature dualism, value-hierarchical thinking, determinism, etc) at the root of unsustainable systems (e.g. cities)?
- How can urban NbS be inclusive of alternative worldviews and critical of dominant worldviews?



Next steps:

- Interested people can contact Melissa
- List of notes from Day 1 discussions can be shared (add Rik, Timon)
- Timeline of next steps including a plenary session at TNOC festival
- Workshop to be organized
- Paper

Group 2: Equity Justice

- Speaker: Zbigniew Grabowski, Natalie Marie Gulsrud
- Summary
- The AHM working groups on equity and justice tested and iterated an emergent conceptual framework for integrating diverse conceptualizations of justice that emerged out of TWG DFJ meetings
- AHM working group also discussed diverse case studies on NBS in practice and identified many justice issues that fit well within the conceptual framework, but also merit some further elaboration.
- Next Steps
- Would like to move ahead with a case study oriented paper led by Natalie Gulsrud (nagu@ign.ku.dk)
- Seeking more input from African and Asian regions for case studies

- Existing TWG DFJ meetings will be used to continue to elaborate conceptual framework for application in NBS design practice
- Identified need for more focused work on transformative governance - potential for WG on Transformative Governance - email Zbigniew Grabowski (grabowsz@newschool.edu) if interested

Group 3: Health group

- Speaker: Matteo Giusti
- Moving forward with Slack group

Group 4: Biodiversity/ Radical Rewilders

- Speaker: Karin Burghardt (email= kburghar@umd.edu if interested)
- Summary:
- “Biodiversity” support/value is part of definition of NBS; even when not the main goal of NBS should be a co-benefit
- We would like to define a continuum of biodiversity support in NBS projects from furniture—> self perpetuating populations—>ecosystem ideal
- See if we can come up with a core set of building blocks/elements of NBS where co-location or landscape siting of elements could have multiplier effect on biodiversity through increased habitat elements
- Gather case studies on rewilding in cities and think how this could conceptually integrate
- Are there better metrics of diversity to measure value (i.e. functional diversity, evidence of populations etc.)
- Moving forward- David Iwaniec will set up slack channel
- Possible product= paper
- Potential Ecological Justice sub-group

EC Working Group Summary:

- Discussed existing work on TNOC essay and want to turn it into a perspective paper, emphasize creating new trajectories of research and practice that do not reproduce existing issues identified in the essay, journal TBD
- Identified desire for in person working group meeting
- Want to create repository for EC / Natura Papers relevant to expansion of Research to practice agenda
- Wanted to create methodological repository - identify and facilitate training needs
- Identify potentials for collaborative grant writing opportunities

- Next Steps:
- Communication through existing slack channel and EC TWG meetings, potentially through a linked in group
- Paper development will be discussed on slack but can also email Zbigniew Grabowski (grabowsz@newschool.edu)

Wrap-Up and Concluding Remarks

Moderator: Timon McPhearson (NATURA Co-Director, Urban Systems Lab)

An opportunity for each group to talk about next steps and their future directions

AHM Organizing Team



- Nancy Grimm, Regents Professor, Arizona State University and co-Director, UREx SRN
- Yeowon Kim, Assistant Professor in Civil and Environmental Engineering, Carleton University
- Timon McPhearson, Associate Professor of Urban Ecology, The New School and Director, Urban Systems Lab
- Marcus Collier, Assistant Professor of Botany, Trinity College Dublin
- Eizabeth Cook, Assistant Professor in Environmental Science, Barnard College
- Loan Diep, Postdoctoral Fellow, The New School
- Tessa Martinez, NATURA Project Coordinator, ASU
- Christopher Kennedy, Urban Systems Lab, The New School
- Mario Balzan, Malta College of Arts, Science and Technology

Attendee List

- Carlos Agudelo | Recycling the City Network, Latin America Node
- Per Andersson | Future Position X Network, European Node
- Erik Andersson | ENABLE, ENVISION, SMARTer Greener Cities, Natural Capital Project, European Node
- Kristin Baja | Urban Sustainability Directors Network, North American Node
- Mario Balzan | Re-Nature Project, European Node
- Maria Elena Bini | Re-Nature Project, European Node

- Konrad Budzinski | UNESCO European Regional Centre for Ecohydrology, European Node
- Karin Burghardt | Baltimore LTER, North American Node
- M’Lisa Colbert | The Nature of Cities, North American Node
- Marcus Collier | Connecting Nature, European Node
- Elizabeth Cook | UREx SRN, North American Node
- Clair Cooper | NATURVATION, European Node
- Laura Costadone | Re-Nature Project, European Node Node
- Rik De Vreese | European Forest Institute, European Node
- Loan Diep | Urban Systems Lab, Latin American Node
- Sabrina Drill | Western Center for Metropolitan Extension, North American Node
- Yuliya Dzyuban | UREx SRN, North America Node
- Davide Geneletti | Re-Nature Project, European Node
- Matteo Giusti | BIG Project, European Node
- Zbigniew Jakub Grabowski | ENABLE, North American Node
- Charlyn Green | SETS Convergence, North American Node
- Nancy Grimm | UREx SRN, North American Node
- Natalie Gulsrud | European Forum on Urban Forestry, SMARTer Greener Cities, VIVA-Plan, European Node
- Mariana Hernandez-Montilla | Connecting Nature, European Node
- Alannah Hofemeier | PlanAdapt Network, European Node
- David Iwaniec | SETS Convergence, North American Node
- Christopher Kennedy | Urban Systems Lab, North American Node
- Yeowon Kim | UREx SRN, Asia-Pacific Node
- Kinga Krauze | UNESCO European Centre for Ecohydrology, European Node
- Duván Hernán López | Recycling the City Network, Latin American Node
- Tadgh MacIntyre | GoGreenRoutes, European Node
- Lelani Mannetti | UREx SRN, SETS Convergence, North American Node
- Tessa Martinez | UREx SRN, North American Node
- Megan Maurer | ENVISION VIVA-PLAN, European Node
- Timon McPhearson | Urban Systems Lab, North American Node
- Elvia Meléndez-Ackerman | San Juan ULTRA Network, Latin American Node
- Michael Mirtl | International LTER, European Node
- Melissa Ingaruca Moreno | Urban Systems Lab, European Node
- Joeri Morpurgo | Natural Capital Project, North American Node

- Cassie Murphy | GoGreenRoutes, European Node
- Noemi Nagy | Re-Nature Project, European Node
- Guillermo Penagos | UNESCO Chair on Sustainability
- Jennifer Rae Pierce | Urban Biodiversity Hub, North American Node
- Christopher Raymond | ENABLE, SMARTer Greener Cities, European Node
- Roy Remme | Natural Capital Project, North American Node