

# NATURE FOR AND INNOVATIVE INCLUSIVE URBAN REGENERATION

International Conference

*Milan, 16-17 June 2022*

**BOOK OF ABSTRACTS**

CONFERENCE ORGANISATION



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 775793.



## TECHNICAL DATA

### BOOK OF ABSTRACTS

**Title:** Nature for Inclusive and Innovative Urban Regeneration International Conference

**Venue Day 16:** Giangiacomo Feltrinelli Foundation, Milan, Italy

**Venue Day 17:** IULM University, Milan, Italy

**Date:** 16-17 June 2022

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**Design:** Susana Leonor, GUDA

**Project:** URBiNAT H2020 Project

#### **Organizers:**

Centre for Social Studies, University of Coimbra, Portugal

Giangiacomo Feltrinelli Foundation, Milan, Italy

IULM University, Milan, Italy

ITEMS, Paris, France

GUDA, Portugal

The URBiNAT project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 776783

#### CONFERENCE ORGANISATION



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# 1 | ORGANISATION

## 1.1 | ORGANISING COMMITTEE

### **CES Centre for Social Studies**

Gonçalo Canto Moniz, Beatriz Caitana da Silva, Isabel Ferreira,  
Nathalie Nunes, Fábio Sampaio, João Rui Pereira

### **Giangiaco­mo Feltrinelli Foundation**

Federico Magrin, Andrea Zucca

### **IULM University**

Guido Ferilli

### **ITEMS**

Tom Mackenzie, Susanne Siebald

### **GU­DA**

Susana Leonor, Américo Mateus, Sofia Martins

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Américo Mateus (GUDA, Portugal)

Susana Leonor (GUDA, Portugal)

Nathalie Vallet (UA, Belgium)

## 1.2 | SCIENTIFIC COMMITTEE

### EXTERNAL SCIENTIFIC COMMISSION

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Marcus Collier, Connecting Nature H2020 project / Trinity College Dublin, School of Natural Sciences, Ireland

Margarida Queirós, Institute of Geography and Spatial Planning, University of Lisbon, Portugal

## 1.2 | SCIENTIFIC COMMITTEE

### EXTERNAL SCIENTIFIC COMMISSION (cont.)

Maya Grekova, Department of Sociology, University of Sofia, Bulgaria

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Wanda Capeller, Sciences Po Toulouse, France

Yves Cabannes, Bartlett Development Planning Unit of the University College London, UK

Zaida Muxi, Barcelona School of Architecture, BarcelonaTech, Spain



## 2 | INTRODUCTION TO THE CONFERENCE

Cities are at a crossroads, moving from a traditional development model to an urban regeneration process that promotes a sustainable, inclusive, healthy, innovative and equitable change in dialogue with citizens and nature.

**Nature for Innovative and Inclusive Urban Regeneration (NATiURB)** is the first international conference organised by [URBiNAT](#), an H2020 project, funded under the European programme [Demonstrating innovative nature-based solutions in cities](#). The event will address the main themes of the project: Nature-based Solutions (NBS) and the Co-Creation of Healthy Corridors for Inclusive Urban Regeneration.

**NATiURB** is a two-day public conference to be held in Milan, on 16-17 June 2022. The first day is a **“Cities Conference”** that will be organised in [Fondazione Giangiacomo Feltrinelli \(FGF\)](#) venue where URBiNAT cities will share in the “Cities Fair” the co-creation of the healthy corridor that is being developed in their intervention area with the local communities. The day will end with the 2nd Broken Cities Session a parallel programme organised by FGF.

The second day is a **“Scientific Conference”** held at [IULM](#) university campus. URBiNAT partners propose twenty sessions to promote the discussion on the concepts, methodologies and practices that are being developed. The sessions are organised according to 5 themes related to URBiNAT goals:

- 1- Co-creating NBS for Sustainable Cities
- 2- Innovating Public Space for Inclusive Cities
- 3- Transforming Governance for Innovative Cities
- 4- Engaging Citizens for Healthy Cities
- 5- Changing Economy for Equitable Cities

The conference aims to discuss URBiNAT scientific and practical proposals by welcoming contributions from the scientific community as well as by practitioners and social movements. A special thanks to our scientific committee that did a double-peer review to the 100 papers submitted from all over the world.

We are working for the URBiNAT conference to be gender responsive. For that, we are following international recommendations for gender-responsive organization of conferences

### About URBiNAT

URBiNAT is a 5-year EU Horizon 2020-funded project (2018-2023) targeting the regeneration and integration of social housing and city areas through co-creation of healthy corridors consisting of innovative and flexible NBS.

In partnership with an international network of cities, the project proposes new models of urban development in the public space encouraging positive social interactions and foster social cohesion in ways that enhance the well-being of the citizens. The cities of Porto, Nantes and Sofia act as

“frontrunners”, due to their innovative use of public space with nature-based solutions (NBS). The cities of Siena, Brussels, Nova Gorica and Høje-Taastrup, acting as “followers”, share and replicate the URBiNAT concepts and methodologies. Moreover, the project collaborates with a network of non-European cities, such as Khorramabad City in Iran, acting as “observers”.

After 4 years of activity, URBiNAT is developing the co-implementation stage in the frontrunner cities and the co-design stage in the follower cities, including Khorramabad. Meanwhile, more than 25 reports, papers, policy briefs, toolkit and handbooks can be accessed in our website: <https://urbinat.eu>

Next year, join us at the final event, a summer school in Porto and Coimbra, 3-8 July 2023.

## **Organising Committee**

### **CES Centre for Social Studies**

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### **Giangiaco­mo Feltrinelli Foundation**

Federico Magrin, Andrea Zucca

### **IULM University**

Guido Ferilli

### **ITEMS**

Tom Mackenzie, Susanne Siebald

### **GUDA**

Susana Leonor, Américo Mateus, Sofia Martins

### **Contact information:**

[conference2022@urbinat.eu](mailto:conference2022@urbinat.eu)

## 3 | PROGRAMME

### PROGRAMME DAY 1: 16th JUNE

**Lead Partner |** Fondazione Giangiacomo Feltrinelli (FGF)

**Venue |** Fondazione Giangiacomo Feltrinelli (FGF), Viale Pasubio 5, 20154 Milan, Italy

## TIME PROGRAMME

08:30 - 09:00

**Registration and Welcome**

09:00 - 09:30

**Opening Session**

- ▷ Cosimo Palazzo Secretary General, Fondazione Giangiacomo Feltrinelli
- ▷ Marie Yeroyanni, European Commission
- ▷ Gonçalo Canto Moniz, Centre for Social Studies, University of Coimbra
- ▷ Beatriz Caitana, Centre for Social Studies, University of Coimbra

09:30 - 09:45

**Keynote 1**

**Nature for inclusive and innovative urban regeneration: experience from Milan**

- ▷ Pierfrancesco Maran, Milan City Councilor for the House and Neighborhood Plan

09:45 - 10:30

**Round Table 1 - Co-Governance of Nature-Based Solutions**

- ▷ Chair - Isabel Ferreira, Centre for Social Studies, University of Coimbra
- ▷ Blaž Mozetič, Nova Gorica, Head of the Department of Environment and Spatial Planning
- ▷ Zdravko Zdravkov, Sofia, Chief Architect
- ▷ Clio Biondi Santi, Siena, Councillor
- ▷ Goura Nataraj, Paraná Assembly, Brazil, Deputy

10:30 - 11:0

**Open Debate**

11:00 - 11:30

**Coffee Break**

11:30 - 11:50

**Keynote 2**

**Nature for inclusive and innovative urban regeneration: cities in transition**

- ▷ Caterina Sarfatti, Director, Inclusive Climate Action, C40

11:45 - 12:30

**Round Table 2 - Nature for inclusive and innovative urban regeneration**

- ▷ Chair - Laetitia Boon (Municipality Brussels)
- ▷ Alessandra Capuano (Sapienza University)
- ▷ Husni Al Abri, representing Misfah (Oman)
- ▷ Israa Mahmoud (Polimi), Clever Cities
- ▷ Giovanni Allegretti, Centre for Social Studies, University of Coimbra

12:30 - 13:30

**Open Debate**

**URBiNAT Citizens Video, by Lucca Bozzoli and URBiNAT Cities**

## TIME PROGRAMME

13:30 - 14:30

**Lunch Box**

14:30-17:00

**CITIES FAIR - Exhibition and Discussions**

- ▷ Chair: Gonçalo Canto Moniz, Centre for Social Studies, University of Coimbra; Américo Mateus, Give U Design Art (GUDA); Sofia Martins, Give U Design Art (GUDA); Tom Mackenzie, ITEMS

**14:30 – 15:00: Co-diagnostic of the intervention area**

**15:00 – 15:30: Co-design of NBS and healthy corridor**

**15:30 – 16:00: Co-governance strategy**

**16:00 - 17:00: Open Fair**

17:00-18:00

**Wrap-up Cities Fair**

- ▷ Chair: Gonçalo Canto Moniz Centre for Social Studies, University of Coimbra; Tom Mackenzie ITEMS

18:00-18:30

**Coffee Break**

18:30-20:00

**PUBLIC DEBATE – Parallel event within Broken Cities Session**

**Cities of cement: the attack on the environment.**

**How can we regenerate the city?**

Videoreport - voices from Taranto

**Keynote Lecture**

- ▷ Giovanni Allegretti Centro de Estudos Sociais, University of Coimbra

**In conversation with:**

- ▷ Ekatarina Domoronek, University of Padua (online)
- ▷ Eleonora Evi, national co-spokesperson, Europa Verde (online)
- ▷ Elena Grandi, Milan City Councillor for the environment
- ▷ Martina Comparelli, spokesperson, Fridays for Future Italia

**Moderator:**

- ▷ Ferdinando Cotugno, Domani Editoriale

## 3 | PROGRAMME (cont.)

### PROGRAMME DAY 2: 17th JUNE

**Lead Partner |** IULM University

**Venue |** Via Carlo Bo, 1, 20143 Milano MI, Itália

08:30-09:00

**Registration - IULM 6**

09:00-9:30

**Openin Session - IULM 6, "Sala dei 146"**

Giovanna Rocca, Vice Rector for Research, IULM (online)

Emanuela de Menna, European Commission (online)

Guido Ferilli, Department of Humanities - IULM

09:30-11:00

**Theme 1  
Session 1A  
Room T12**

**Theme 2  
Session 2A  
Room T16**

**Theme 3  
Session 3A  
Room T32**

**Theme 4  
Session 4A  
Room T51**

**Theme 5  
Session 5A  
Room T52**

11:00-11:30

**Coffee Break - IULM 6**

11:30-12:00

**Theme 1  
Session 1B  
Room T12**

**Theme 2  
Session 2B  
Room T16**

**Theme 3  
Session 3B  
Room T32**

**Theme 4  
Session 4B  
Room T51**

**Theme 5  
Session 5B  
Room T52**

13:00-14:3

**Lunch - IULM 6**

14:30-16:00

**Theme 1  
Session 1C  
Room T12**

**Theme 2  
Session 2C  
Room T16**

**Theme 3  
Session 3C  
Room T32**

**Theme 4  
Session 4C  
Room T51**

**Theme 5  
Session 5C  
Room T52**

16:15-17:45

**Theme 1  
Session 1D  
Room T12**

**Theme 2  
Session 2D  
Room T16**

**Theme 3  
Session 3D  
Room T32**

**Theme 4  
Session 4D  
Room T51**

**Theme 5  
Session 5D  
Room T52**

18:00-19:00

**Final Drink**



Room 112

## CO-CREATING NBS FOR SUSTAINABLE CITIES

09:30 – 11:00

### Session 1A: Methodologies and tools for multi species co-existence and collaboration

#### 1A.1: Ecological data driving urban design, a methodology

Mathilde Marengo (IAAC, Spain), Iacopo Neri (IAAC, Spain), Eduardo Rico (IAAC, Spain & Architectural Association, UK)

#### 1A.2: Observatory digital Platform for collaborative urban regeneration using Nature-Based Solutions for sustainable cities

Amirhossein Alamolhoda, Guido Ferilli (IULM University, Italy)

#### 1A.3: 50 Years of International Documents on the Common Future of Humanity (1972-2022) - Convergence between Human Environment and Cultural Heritage

Domingas Vasconcelos, Teresa Portela Marques, Teresa Cunha Ferreira (University of Porto, Portugal)

11:30 – 13:00

### Session 1B: Methodological approaches to enhance the impacts on urban space and nature-based solutions: recognising knowledge co-production based on social sciences and humanities

#### 1B.1: Inclusion: mapping indicators, contributions to the definition of new urban policies

Lia C. Ferreira, Alexandra Paio (University Institute of Lisbon, Portugal)

#### 1B.2: Nature-based Play

Sara Candiracci, Larissa Miranda Heinisch, Dasha Moschonas, Spencer Robinson (Arup, UK)

#### 1B.3: Participatory approach, mixed methods, and urban sustainable development in URBiNAT project

Anna Maria Bagnasco, Guido Ferilli (IULM, Italy), Marco Acri (University of Nova Gorica, Slovenia), José Miguel Lameiras (University of Porto & BIOPOLIS, Portugal)

14:30-16:00

### Session 1C: Direct and indirect benefits of water and vegetation in healthy corridors

#### 1C.1: Stakeholder Perceptions of Nature-Based Solutions, Co-Design and Implementation in Rural Mountain Areas - A case from PHUSICOS

Gerd Lupp, Josh J. Huang, Aude Zingraff-Hamed (Technical University of Munich, Germany), Anders Solheim, Amy M.P. Oen (NCI, Norway)

#### 1C.2: A nature-based solution for Mediterranean climates – Monitoring and evaluation of a modular living wall

Magdalene Charalambous (Cyprus Institute, Cyprus), Julia Nerantzia Tzortzi, Carlo Andrea Castiglioni, Salvatore Carlucci (Politecnico di Milano, Italy)

#### 1C.3: Potential of Nature-Based Solution for Hydro-Meteorological Risks Mitigation in Sub-Saharan Africa: A Systematic Review

Kirk B. Enu, Aude Zingraff-Hamed, Mohammad A. Rahman (Technical University of Munich, Germany), Lindsay C. Stringer (University of York, UK), Stephan Pauleit (Technical University of Munich, Germany)

16:15 – 17:45

### Session 1D: Food production and related nature-based activities for the development of sustainable and resilient cities

#### 1D.1: Green incubators for food waste reduction and smart city development: some insights from Brazil

Karolina C. Gomes, Silvia R. Sedita (University of Padua, Italy), Anete Alberton (Vale do Itajaí University, Brazil)

#### 1D.2: Food Production Through Nature-based Retrofitting Solutions: A Case Study of Plant Your Future

Fiona Demeur, Mathilde Marengo (IAAC, Spain)

#### 1D.3: Urban Allotment Gardens: a strategy to build urban resilience during the Covid 19 pandemic

Heloísa Antunes Master (University of Porto, Portugal), Isabel Martinho da Silva (University of Porto & Associação BIOPOLIS, Portugal)

#### 1D.4: Urban gardens: how citizens can contribute to learn more

Liliane Jean-Soro (University Gustave Eiffel & IRSTV, France), Silvio Caputo (University of Kent, UK), Runrid Fox-Kämper (Research Institute for Regional and Urban Development, Germany), Lidia Ponizy (Adam Mickiewicz University, Poland), Dorine Bouquet (IRSTV, France), Baptiste Grard (AgroParisTech, France), Béatrice Bechet (University Gustave Eiffel & IRSTV, France)

## 2 Room 116 INNOVATING PUBLIC SPACE FOR INCLUSIVE CITIES

09:30 – 11:00

### Session 2A: Architecture of participation - symbiotic practices and theories for an inclusive public space

#### 2A.1: New forms of inclusive public space

Alessandra Capuano (Sapienza University of Rome, Italy)

#### 2A.2: Minimalist Parameters for Public Spaces

Çiğdem Fındıklar Ülkü, Mehmet Çağlar Meşhur (Konya Technical University, Turkey)

#### 2A.3: Inclusive engagement for vulnerable population in co-creating NBS: the case of 'Villaggio Barona' social housing within the CLEVER Cities project

Iliriana Sejdullahu (Ambiente Italia srl, Italy), Israa H. Mahmoud (Politecnico de Milano, Italy), Eugenio Morello (Politecnico de Milano, Italy), Marina Trentin (Ambiente Italia srl, Italy), Alice Beverlej MSc. (KService Impresa sociale, Italy)

#### 2A.4: The resistance from marginality. Urban transformation and social conflict in Barcelona

Sara Pierallini (University of Barcelona, Spain)

#### 2A.5: Women's participation as a lever for the urban regeneration of public spaces

Mohamed EL Boujjoufi (University of Antwerp, Belgium), Hanane Salif (Hassan II University of Casablanca, Morocco)

11:30 – 13:00

### Session 2B: Urban plans for more inclusive and healthier cities: innovative municipal strategies and partnerships

#### 2B.1: Complementary Policies to foster Urban Regeneration: contributions from a systematic literature review

Paula Vale de Paula, Jorge Gonçalves, Rui Cunha Marques (Instituto Superior Técnico, University of Lisbon, Portugal)

#### 2B.2: Green infrastructures and the new public city: a key nexus for resilience-based urban regeneration processes in the city of Altamura

Saverio Massaro (University of Basilicata & Esperimenti Architettonici APS, Italy), Donato Colonna (Collettivo Zed, Italy), Gaetano De Francesco (Sapienza University Rome & DFR Architecture, Italy), Paolo Diorenzo (Agrogreen Service S.r.l.s. & Consiglio Nazionale delle Ricerche, Italy)

#### 2B.3: What we talk about when we talk about inclusive play space? A children-caregiver perspective

Kin Wai Michael SIU, Izzy Yi JIAN, Caterina Villani (The Hong Kong Polytechnic University, Hong Kong)

#### 2B.4: (Green) Space between buildings: Public housing in Porto

José Miguel Lameiras (University of Porto & CIBIO, Portugal), Joana Restivo (DomusSocial, Portugal), Paulo J. Farinha-Marques (University of Porto & CIBIO, Portugal), José A. Ferreira (DomusSocial, Portugal)

14:30-16:00

### Session 2C: Feminist cocreation of NBS for urban regeneration

#### 2C.1: LINA Feminist Architecture Design Studio: a didactic experience towards inclusive and democratic cities

Carolina Quiroga (University of Buenos Aires & University of Belgrano, Argentina)

#### 2C.2: Women's visibility of presence at the local level of the URBINAT process in Sofia: responsibilities, points of view, and action effectiveness

Dimitrova Elena, Milena Tashveva-Petrova (UACEG, Bulgaria) Beata Tsoneva, Angel Burov (UACEG, Bulgaria)

#### 2C.3: Mulheres em Construção! An ecofeminist urban and training project in Portugal

Lia Antunes (Associação Mulheres na Arquitectura & CIEG/ISCSP-ULisboa + Darq-UC, Portugal), Isabella Rusconi (Associação Mulheres na Arquitectura & University Institute of Lisbon, Portugal), Elena Parnisari (Associação Mulheres na Arquitectura & University of Porto, Portugal), Patrícia Robalo (Associação Mulheres na Arquitectura & University of Lisbon, Portugal), Gabriela Cavacalcanti (Associação Mulheres na Arquitectura & University of Aveiro, Portugal)

#### 2C.4: Women's Voluntary Work in the Community in South Korea: A Question of Recognition and Rewards

Hyunok Lee (Yonsei University, Korea)

16:15 – 17:45

### Session 2D: The circular city: heritage, environment, businesses and governance

#### 2D.1: Redesigning Mértola's Infrastructures through Nature-based Solutions: connecting spaces, nature and people

Laura Pereira (University of Lisbon, Portugal)

#### 2D.2: Spatializing cities' geographical consumption footprint or, the visualization of urban unsustainability

Iacopo Neri (IAAC, Spain)

#### 2D.3: Revealing built heritage through social media: Comparing the attributes and values conveyed by locals and tourists in Faro, Portugal

Roy Swinkels, Krist J Van Herck, Emisgul E Sahin, Bruno Amaral de Andrade, Ana Pereira Roders, Ana Tarrafa Pereira da Silva (Technical University of Delft, Netherlands)



Room 132

**TRANSFORMING GOVERNANCE FOR INNOVATIVE CITIES**

09:30 – 11:00

**Session 3A: Whose right to the city?: functional diversity and the co-creation of nature-based solutions for an inclusive public space**

**3A.1: Place-attachment and Urban Ageing: Exploring The Evidence-based Spatial Criteria in the Human-centric Ageing-in-place Dwelling**

Tzen-Ying Ling (Tamkang University, Taiwan)

**3A.2: The right to accessible cities: the vision of people with Down Syndrome in Brazil and Portugal**

Marina Dias de Faria (University of Coimbra, Portugal)

**3A.3: A toolkit for raising awareness and overcome physical, attitudinal and communication hindrances for persons with neuromotor diseases in community settings**

Ana Filipa Santos (APPC, Portugal) Sandra Oliveira (APPC, Portugal), Joaquim Alvarelhão (University of Aveiro, Portugal)

**3A.4: Creative re-generation in an archaeological museum: the Museo4U project**

Ginevra Niccolucci (PRISMA Associazione Culturale, Italy), Simona Rafanelli (MuVet, Italy), Nicola Amico (PRISMA Associazione Culturale, Italy), Cinzia Luddi (PRISMA Associazione Culturale, Italy), Virginia Niccolucci (PRISMA Associazione Culturale, Italy)

11:30 – 13:00

**Session 3B: Building the right to the city through diverse spaces of commoning: which role for ruling frameworks?**

(second session 3B ONLINE at 14:30-16:00 - Room 126 )

**3B.1: Urban agriculture as activism: common practices and discourses in different contexts**

Gustavo Nagib (University of Lausanne, Switzerland & University of São Paulo, Brazil)

**3B.2: Commoning (in) the Neighbourhood, Righting the City**

Androniki Pappa, Alexandra Paio (University Institute of Lisbon, Portugal)

**3B.3: Urban Commons in Cities of Scarcity**

Ana Rosa Chagas Cavalcanti, Leandro Silva Medrano (University of São Paulo, Brazil)

**3B.4: Analyzing Inclusive Citizenship in Cities and Human Settlements through a Right to the City perspective.**

Kelly Komatsu Agopyan (University of São Paulo, Brazil)

**3B.5: The power of dust: The role of decaying places and their iconization for the future of urban life form - Case study of Bangkok**

Andrea Taglioni (Chulalongkorn University, Thailand)

14:30-16:00

**Session 3C: Co-governance for the co-creation of nature-based solutions**

**3C.1: Why a helice-based approach is necessary to govern Green Infrastructure: learning from the Interreg Alpine Space LUIGI project**

Michele Coletti, Frédéric Bally (Grenoble Ecole de Management, France)

**3C.2: Governance Learning by Resisting, Co-opting and Expanding through Collective Actions for Climate Adaptation in Cities**

Mahir Yazar (University of Bergen, Norway)

**3C.3: Design and initiation of the first nature-based urban climate adaptation programme in Malaysia: challenges in governance and stakeholder engagement**

Sofia R.M.B. Castelo (University of Lisbon, Portugal)

**3C.4: Adaptive governance for sustainable metropolitan green infrastructure: a case study in Barcelona Metropolitan Area**

Andresa Ledo Marques ( Leibniz University Hannover, Germany & Universidade Presbiteriana Mackenzie, Brazil, Angélica Benatti Alvim (Universidade Presbiteriana Mackenzie, Brazil)

16:15 – 17:45

**Session 3D: Cultural mapping in the city's co-creation processes toward sustainability**

**3D.1: Cultural heritage mapping through community participation in Vale de Massarelos (Porto)**

Laís Pettinati, Teresa Cunha Ferreira, Teresa Marques, Natalia Azevedo (University of Porto, Portugal), Julia Rey-Pérez (University of Seville, Spain)

**3D.2: Logar do Falcão transformation: models for intergenerational verification and appropriation**

Vitório Leite, Inês Reis, Luís Miguel Correia (University of Coimbra, Portugal), Gonçalo Canto Moniz (Centre for Social Studies & University of Coimbra, Portugal)

**3D.3: Community-driven tools to communicate NBS and promote youth engagement: the case of Campanh'UP Platform in Porto**

Filipa Luz (APPC, Portugal), Beatriz Caitana (Centre for Social Studies, Portugal), André Sousa (Fios e Desafios, Portugal), Fabio Guedes (APPC, Portugal)

**3D.4: Sounds a form of qualification of urban identity**

Cristiano Ricardo de Azevedo Pacheco (Centre for Social Studies, Portugal & Federal University of Sergipe, Brazil)

## 4 Room 151

### ENGAGING CITIZENS FOR HEALTHY CITIES

09:30 – 11:00

#### Session 4A: Inclusive planning process: linking informal to formal

**4A.1 Artistic-educational practices inscribed in the territory of the city: the perception of complex ties between rural and urban**

Beatriz Petrus (I2ADS - FBAUP, Portugal)

**4A.2 Metropolitan Cartography methodology tracing back to the invention/construction of Ougadougou loti and non-loti settlements' structure resilient points**

Antonella Contin (Politecnico di Milano, Italy), Valentina Galiulo (University of Seville, Spain)

**4A.3 Co-creating NBS through cooperative work: ecological sanitation led by urban social movements in Rio de Janeiro, Brazil**

Fernanda Petrus (University of Coimbra, Portugal), Manuel Meyer (University of Porto, Portugal)

**4A.4 Urban green infrastructure: a detailed approach to ecosystem/cultural services**

Vitaly A. Kryukov, Elena I. Golubeva (Lomonosov Moscow State University, Russia)

11:30 – 13:00

#### Session 4B: Citizen engagement and the co-creation of nature-based solutions for sustainable urban development

( first Session 4B ONLINE at 09:30-11:00 - Room 126 )

**4B.5 The shift from stakeholder to communityholder for Territorial Social Responsibility: the contribution of UNICITY Laboratory**

Gian Piero Turchi, Marco Locatelli, Monia Paita, Christian Moro (University of Padova, Italy)

**4B.6 Co-Creation process indicators of nature-based solutions: a deducted assessment methodology for stakeholders' engagement in CLEVER Front runner Cities**

Israa H. Mahmoud (Politecnico di Milano, Italy), Eugenio Morello (Politecnico di Milano, Italy), Alessandro Arlati (HafenCity Universität Hamburg, Germany), Sean Bradley (CLEVER Cities Programme Manager, UK), Emilia Barone (Municipality of Milan, Italy)

**4B.7 First steps to social engagement for sustainable cities. The case of Buenos Aires, Argentina**

Mariãngeles Viqueira Gabarain (UBATEC & UBA, Argentina)

**4B.8 Participatory planning for a widespread and resilient cross-border park**

Francesca Ciglionne (Independent Researcher, Italy), Sergio Pratali Maffei (University of Trieste, Italy), Elisa Polo (Independent Researcher, Italy), Marco Aciri (University of Nova Gorica, Slovenia)

14:30-16:00

#### Session 4C: Child and youth active involvement in the co-creation and decision-making process of nature-based solutions to advance sustainable urban development

**4C.1 Nature-based filterless Air Pollution Abatement Solution for Urban applications: the case study of Scuola Bagnera in Rome**

Fabio Galatioto, Giuseppe Spanto, Paolo Tripodi (IsCleanAir Italia S.r.l., Italy)

**4C.2 Cities and urban green spaces in debate: including young children's voice**

Rita Campos (Centre for Social Studies - University of Coimbra, Portugal)

**4C.3 Co-designing NBS for schools through a participatory process with kids in Porto**

Chiara Farinea, Andrea Conserva (IAAC, Spain)

16:15 – 17:45

#### Session 4D: Nature-based solutions and their effect on health, wellbeing and behavior

**4D.1 Exploratory approach to nature-based solutions for human-ecological well-being and health in cities**

Maria Carmen Garcia Mateo (MCG Research&Innovation Sustainability Architecture, Spain)

**4D.2 User engagement through perception of vertical greenery: a case study in Milan**

Ozge Ogut (Politecnico di Milano, Italy), Nerantzia (Julia) Tzortzi (Politecnico di Milano, Italy), Chiara Bertolin (Norwegian University of Science and Technology, Norway)

**4D.3 (Re)finding the values of nature in the neighbourhood of Estação, Faro**

Wilhelmus Elskamp, Sara E Szulc, Marloes Drijver, Qiyang Tao, Bruno Amaral de Andrade (TU Delft, Netherlands)

**4D.4 See, the good is so close! Health-promoting residential greenery: The green living room on our doorstep in times of crisis and beyond**

Ina Säumel (Humboldt Universität zu Berlin, Germany), Simone J. Sanft (Freie Universität Berlin, Germany)





Room 152

## CHANGING ECONOMY FOR EQUITABLE CITIES

09:30 – 11:00

### Session 5A: Rethinking the urban spaces towards an inclusive regeneration

**5A.1: Polarized cities and fragmented citizenship: rethinking participation and political opportunities in urban spaces**

Rachel Carvalho (University of Coimbra, Portugal), Sandra Miscali (Associação Raizes, Brazil)

**5A.2: Quality public space and the right to the city for a more inclusive and equitable urbanism**

Lúisa Bravo (The Journal of Public Space & City Space Architecture, Italy)

**5A.3: Presenting Urbanat Concepts in Brazilian Cities: 2021 International Seminar Summary**

Jorge G. O. Brand (CEMPA/ALEP, Brazil), Isabela S. Perotti (University of Coimbra, Portugal), Fabiana M. Martins (ALEP, Brazil)

**5A.4: São Paulo's experience in Open Government for a co-built world**

Gabriela P. L. Chabbouh (University of São Paulo, Brazil), Maria Camila F. da Silva, Patrícia Marques (São Paulo City Hall, Brazil), Bruno Venâncio (Federal University of ABC, Brazil)

11:30 – 13:00

### Session 5B: Economy for Equitable Cities

**5B.1: Ecosystem condition indicators to support Nature-based Solutions implementation in cities**

Francesco Sica (University of Trento, Italy), Chiara Cortinovis (Humboldt-Universität zu Berlin, Germany), Davide Geneletti (University of Trento, Italy)

**5B.2: Comparative Analysis: Business models and Impacts of Nature-based Enterprises**

Thomas Andersson, Ingrid Andersson, Emma Björner, Laura Prisca Ohler (IKED, Sweden)

**5B.3: Trees as Infrastructure (TreesAI) A portfolio financing platform to enable transparent public private partnership for the long term stewardship of urban nature-based solutions**

Carlotta Conte, Chloe Treger, Konstantina Koulouri, Roni Bulent (Dark Matter Labs, UK)

**5B.4: Triggers of transformation - A case study of public spaces in Muscat**

Shaharin Elham Annisa (MCTspaceLab, Oman & University of Stuttgart, Germany), Rowa Elzain (MCTspaceLab, Oman)

14:30-16:00

### Session 5C: Cities for whom? Asymmetries, economies and exclusion in the urban space

**5C.1: A child-friendly city – sustainable city**

Snezana Libong Ngai (Faculty of Dramatic Arts, Serbia)

**5C.2: Public-Private Partnerships, Urban Regeneration Projects and Asymmetries: contributions from a systematic literature review**

Paula Vale de Paula, Jorge Gonçalves, Rui Cunha Marques (Instituto Superior Técnico – University of Lisbon, Portugal)

**5C.3: Goura's Mandate working guidelines for Paraná, Brazil**

Jorge G. O. Brand Master, Leonardo F. Baggio Bachelor, Fabiana Moro M. Martins (ALEP, Brazil)

16:15 – 17:45

### Session 5D: Urban regeneration and social innovation: Social and Business Opportunities

**5A.1: Academic Entrepreneurship and Social Innovation: Transforming Responses to Societal Challenges and Needs that Influence the Generation and Diffusion of Social Innovation Practices – A Literature Review**

Fábio Sampaio (Centre for Social Studies, Portugal)

**5A.2: Public-Private Partnerships in Urban Regeneration projects: Identifying local actors from a systematic literature review**

Paula Vale de Paula, Jorge Gonçalves, Rui Cunha Marques (Instituto Superior Técnico – University of Lisbon, Portugal)

**5A.3: U-SOLVE: adjusting entrepreneurial and open innovation methods for thriving urban communities**

Fabio Maria Montagnino, Anixi Antonakoudi, Constantinos Kritiotis (The Cyprus Institute, Cyprus)

**5A.4: Designing socially inclusive co-creation of urban nature-based solutions**

Charlotte Stijnen (DuneWorks, Netherlands), Dries Hegger (Utrecht University, Netherlands)



Room 126

**ENGAGING CITIZENS FOR HEALTHY CITIES  
TRANSFORMING GOVERNANCE FOR INNOVATIVE CITIES**

09:30 – 11:00

**Session 4B. Citizen engagement and the co-creation of nature-based solutions for sustainable urban development**

( second Session 4B in-person at 11:30-13:00 - Room 151 )

**4B.1 SPIRE Baia Mare**

Dorin Miclaus (Baia Mare Municipality, Romania), Sorin Pop (Indeco Soft SRL, Romania), Anca Plesa (USAMV, Romania), Andra Tanase (ARIES Transilvania, Romania), Lajos Vajda (Green Energy Cluster, Romania)

**4B.2 Rethinking the right of the city through the vegetal: the case of street gardens in Lyon (France)**

Frédéric Bally (Grenoble Ecole de Management, France)

**4B.3 Photography as gravitas: on the relevance of visual anthropology and creativity for citizen engagement**

Carlos Barradas (Centre for Social Studies - University of Coimbra, Portugal)

**4B.4 Local planning and healthy city**

Aida Dodangeh (ICCIMA, Iran), Amirhossein Alamolhoda (IULM, Italy)

**Session 3B. Building the right to the city through diverse spaces of commoning: which role for ruling frameworks?**

( first Session 3B in-person at 11:30-13:00 - Room 132 )

**3B.6: Participation and Institutionalization: perspectives in urban policies**

Isabella Rusconi (University Institute of Lisbon, Portugal), Fernando Nogueira (University of Aveiro, Portugal)

**3B.7: Limits to the right to (use and modify) the city – a Brazilian case**

Sinara Sandri (University of Coimbra, Portugal)

**3B.8: Beyond urban-rural linkages, the defense of territories and cities for life**

Rubén Paredes Cortez, Vanessa Pinto Valencia, Diana Bell Sancho, Gabriela Vacacela Marquez, Lucía Ruiz Pozo (Contrato Social por la Vivienda, Ecuador)

**3B.9: Adoption of Inclusive planning governance in religious events during pandemic – Case of Rath Yatra, Odisha**

Shradha Chandan, Satish Pipralia, Ashwani Kumar (MNIT, India)

## 4 | CITIES FAIR

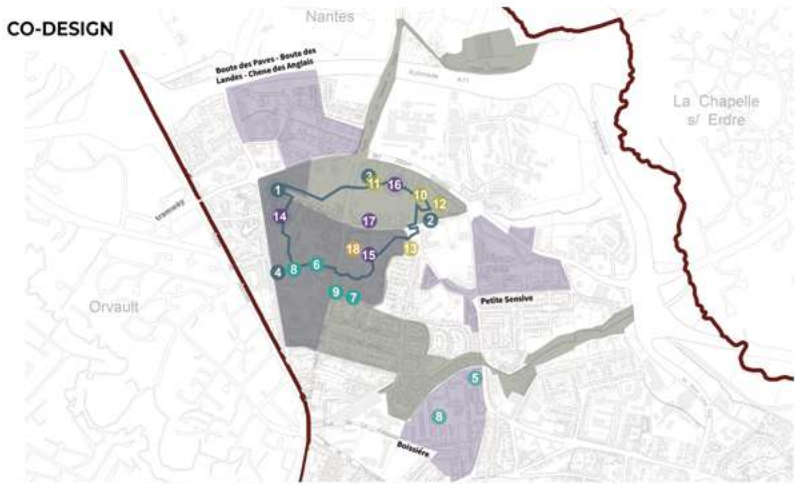


FRONTRUNNERS

# NANTES

The living lab is located in the northwest of Nantes, in one of the greenest district of the city: Nantes Nord. Unlike many French or European social housing areas, Nantes Nord is particularly well connected to the city center via a tram line, several bus lines and secondary roads. Though, as the Local Diagnostic underlined, health and socio-economic indicators are worrying, in a district with one of the highest poverty rate of the city. Parallel to Urbinat, the municipality started to develop an urban "global project" supported by the ANRU, the French agency for urban renewal, with a 121 million euros budget.

### CO-DESIGN



Map of the district with the healthy corridor (red), the social housing districts (purple) and the green city with the 18 final propositions of the inhabitants.



Residential with inhabitants after the CO-DESIGN workshop



Meeting with inhabitants



Design of the Central park and arboreal garden by the municipal green spaces department

### LOCAL DIAGNOSTIC



A residential area with social housing (social housing) in Nantes



One of the greenest roofs of the city of Nantes



Meeting on a farm next to the district of Nantes, held with inhabitants

### CO-GOVERNANCE



Meeting of the municipal advisory board



Public meeting with the elected representatives of the district and the inhabitants

## FRANCE

## NBS



FRONTRUNNERS

# SOFIA

The project aims to improve the urban environment by building a Healthy Corridor - a large-scale, nature-based innovative structure that integrates "physical" and "soft" measures to ensure sustainability and mobilize actors and resources to achieve social cohesion. Connecting two urban parks and public transport stops, the Healthy Corridor in Sofia is a linear park with four zones corresponding to four main clusters of NBSs. Each of the zones is characterized by a passive and active subzone. The passive zones are for family gatherings and recreation, while the active ones - for outdoor games for all ages, sport activities and public events.

## CO-DESIGN



Masterplan study area



## LOCAL DIAGNOSTIC

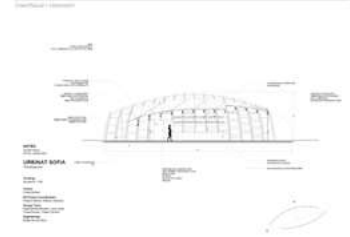


## CO\_GOVERNANCE



# BULGARIA

## NBS



FOLLOWERS

# HØJE TAASTRUP

DENMARK

The living lab of Høje Taastrup is located in Gregersen kvarteret, a green neighbourhood with areas of private and social housing. The social housing area Gadehavegård will undergo major transformations in the context of a development plan, that will be fully implemented I 2030. At the same time, an urban space project will be carried out nearby the local train station. With the URBINAT toolkit, the task will be to create a healthy corridor which connect these projects and link the city closer together, based on local diagnostics conducted from autumn 2019 to spring 2022, and through co-design activities with citizens in 2022.

## PARTICIPATION & IDEAS

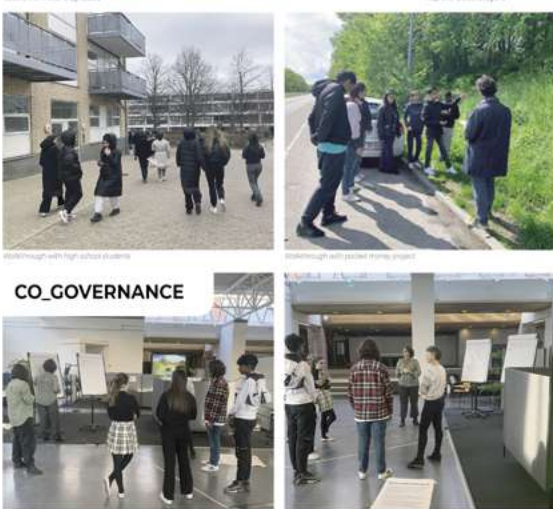
### CO-DESIGN activities



### LOCAL DIAGNOSTIC



### CO-GOVERNANCE



FOLLOWERS

# BRUSSELS

The living lab of Brussels is located in Neder-Over-Heembeek, a peripheral neighbourhood with pockets of social housing and green spaces in what was an old Flemish village before its annexation by the municipality of Brussels in 1921. The territory is complex and dynamic, with a variety of lived realities and challenges. A local diagnostic was conducted from autumn 2019 to autumn 2021, the results of this analysis were synthesised in collaboration with an artist in order to create a colouring map. The co-design phase has now been launched with the aim of co-creation of the "healthy corridor" and NBS projects.

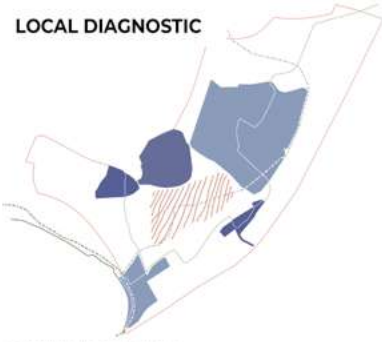
## BELGIUM

### PARTICIPATION & IDEAS

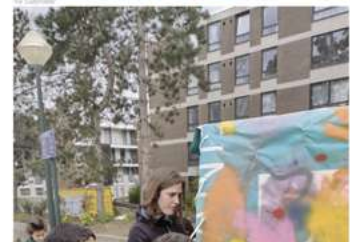
#### CO-DESIGN activities



#### LOCAL DIAGNOSTIC



#### CO\_GOVERNANCE





FOLLOWERS

# SIENA

URBiNAT in Siena is focused on Ravacciano, a neighbourhood close to the historical cen-tre, which is separated from the city by a green valley. Despite the good state of conservation, the valley has limited accessibility and the neighbourhood looks disconnected from the green area and from the city. URBiNAT seeks to create healthy corridors linking the neighbourhood and the city through the green valley, to improve ecosystem services and NBS development. The experience made in Ravacciano aims at engaging citizens in decision making and identifying good strategies to increase urban functions and services for the community. Moreover, it's expected to provide a replicable developmental model to be implemented in other neighbourhoods, in order to improve quality of life and healthy behaviours

ITALY

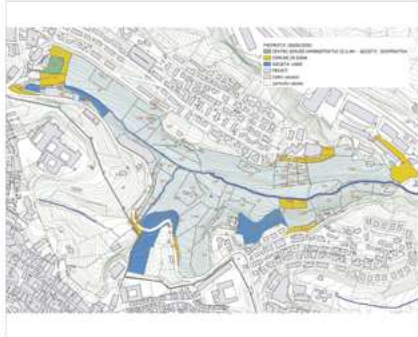
## PARTICIPATION & IDEAS



### CO-DESIGN activities



### LOCAL DIAGNOSTIC



### CO-GOVERNANCE





FOLLOWERS

# KHORRAM ABAD

## IRAN

Khorram Abad is a major city in west of Iran as the capital of Lorestan Province, as the center of civilization for thousands of years. It has marvelous natural resources and rich history, but some of old neighborhoods and suburbs of Khorram Abad suffer from functional, physical and also economic deterioration. Thanks to Khorram Abad local potentials such as rich heritage, cultural assets, vacant lots as a chance for intervention, in addition to the participation of residents for making change in their living place, there are lots of social and economic opportunities to improve the neighborhoods of URBINAT study area with using local nature based solutions (NBS).

### CO-DESIGN activities



### LOCAL DIAGNOSTIC



### CO\_GOVERNANCE



### PARTICIPATION & IDEAS



**NATURE FOR  
AND INNOVATIVE  
INCLUSIVE URBAN  
REGENERATION**

International Conference  
*Milan, 16-17 June 2022*

## 5 | CONFERENCE SESSIONS



Room 112

### **CO-CREATING NBS FOR SUSTAINABLE CITIES**

Methodologies and tools for multi species co-existence and collaboration

Methodological approaches to enhance the impacts on urban space and nature-based solutions: recognising knowledge co-production based on social sciences and humanities

Direct and indirect benefits of water and vegetation in healthy corridors

Food production and related nature-based activities for the development of sustainable and resilient cities

## Session 1A - Methodologies and tools for multi species co-existence and collaboration

### Coordination

Chiara Farinea (IAAC, Spain) Philippe Bodéan (IRSTV, France) José Miguel Lameiras (BIOPOLIS, Portugal) Rita Campos (CES, Portugal) Andrea Conserva (IAAC, Spain)

The Urban Environment has developed over the centuries into a complex machine to host human beings and their activities, actively excluding external factors that disturb anthropogenic activities. Part of this process consists of excluding “nature” (with the exception of a few selected species) from cities. Today a new consciousness of the effects of anthropogenic activities on our planet and the regulating properties of nature is causing us to reconsider the introduction of nature in cities. A discussion has begun in recent years on the process of rethinking cities as environments which can encourage multispecies co-existence and collaboration. Studies performed in different fields such as biology, ecology, urbanism and design agree that emphasizing the agency of life-forms and their ability to set goals may foster local and global sustainability. The example of natural ecological systems reveals that mutualistic attitudes between living beings help to shape their ecosystems, making them stronger, longer-lived and more resilient. Which methodologies and tools can we use to foster mutualistic multispecies attitudes in cities that are designed to exclude nature? The integration of nature in cities requires thinking beyond inherited categories and capacities as today co-existence and collaboration are mainly conceived and planned for a single space environment. The development of cities designed for multispecies habitation requires imagining environments able to attract and host different living organisms, which can foster dynamic processes of exchange. This session aims to widen the debate on Nature Based Solutions, a debate which usually focuses on plants and the ecosystem services that they provide from a human centred perspective, instead embracing a broader vision that takes all living beings equally into consideration (human, flora, fauna, microbiota), their encounters, contamination, collaboration and evolution-enhancing resilience. We welcome papers, projects and case studies by academics and practitioners, from different fields (architecture, ecology, botany, social sciences, etc.) focussing on the following questions: Which innovative methodologies and tools can most help us integrate living systems in urban environments? How can we foster mutualistic attitudes, enhancing urban resilience? Can we build the cities of the future through unexpected collaborations and combinations?

### 1A.1 - Ecological data driving urban design, a methodology

Mathilde Marengo (0000-0002-6249-0960)<sup>1</sup>, Iacopo Neri (0000-0002-9246-6494)<sup>1</sup>, Eduardo Rico (0000-0002-1659-6166)<sup>2,1</sup>

<sup>1</sup>Institute for Advanced Architecture of Catalonia, Spain. <sup>2</sup>Architectural Association, United Kingdom

Centres to human life, cities represent the main threat to fine ecological balances, but are also responsible at multiple levels for the health of citizens. Metropolitan areas are therefore key in addressing such issues to maintain the wellbeing of all living things. To this end, concepts like renaturing and rewilding offer an unprecedented challenge for designers: to approach landscape under a dynamic, collective, multidisciplinary and multiscale perspective. These frameworks have the potential to empower designers to engage with nature as an active partner, through a set of new elements to understand, represent and create landscapes. In doing so, they reconsider the polarisation between ecological forces and anthropocentric ones, providing an opportunity to consciously design for, and within, climate change adaptation.

The paper discusses an experimental methodology for design and planning processes that detect and amplify potential and beneficial ecological connections within urban areas, towards their transition into life centred sustainable cities. It embraces the complexity of life in cities and their surrounding territories at multiple scales of analysis, and identifies site-specific major drivers to support this process. The proposed data-driven methodology uses computational logics exploited in environmental studies to foresee ecological patterns and include nature based solutions as drivers to the design process. The methodology has been approached from three main perspectives:

- *Fostering key-stone species as drivers for ecological connectivity: exploiting ecological connectivity analysis* - computed through the open source Circuitscape application - to overcome territorial fragmentation and identify ecologically relevant areas and corridors to support through design and citizen engagement, and in partnership with keystone species (insect pollinators, beavers, and bats);
  - *Simulating flooding dynamics to design river renaturalisation*: embedding dynamic complexity into hydrological simulations to study the behaviour of rivers in order to design and introduce new topographies within the riverbed integrating nature based solutions, necessary to tackle pollution as well as to reduce soil erosion and improve biodiversity; finally allowing the river ecosystem to thrive holistically;
  - *Enabling life centred and inclusive urban development through network analysis*: understanding the micro mobility patterns of specific communities, through network analysis, to design low impact but highly connected urban systems through toolboxes for citizen engagement enabling the ecological transition of identified urban areas.
- The paper collects two years of experimentation in Barcelona, London and Luxembourg, providing an overview

on viable approaches for designers to effectively and dynamically design with nature as an active partner for the ecological transition of urban areas. We exploit data relative to context specific ecological actors, performances and environments to frame the effectiveness of their ecological networks, and combine this with the physical properties of specific metropolitan environments. This allows us to evaluate design solutions and identify relevant pathways for ecology to holistically thrive, as well as enabling toolboxes for citizens to activate this process. This consequently provides the methodological basis and a viable approach for designers to effectively, dynamically and systemically design with ecology for ecological transition towards connected living environments, also offering a multi contextual benchmark for the comparison of sustainability-related assessment methodologies and their related design strategies.

### **1A.2 - Observatory digital Platform for collaborative urban regeneration using Nature-Based Solutions for sustainable cities**

Amirhossein Alamolhoda, Guido Ferilli  
IULM University, Italy

This paper presents the development of an efficient software for managing, visualizing, analyzing, and integrating different datasets that are referred to as the Observatory platform to serve the co-creation of NBS to reach sustainable cities. The study imparts a methodological approach for designing and developing a digital platform in multidisciplinary and participatory NBS projects with several partners such as research institutions and municipalities. The digital Observatory platform operates data management and provides tools to the stakeholders of the project in both web-accessible and application programming interfaces. The platform is based on the use of open software to enable co-creation by giving the stakeholder the possibility to shape their cities. Furthermore, the platform preserves data privacy by introducing different levels of accessibility so that not only can open public data be shared but also private data can be accessed by users respecting levels of accessibility and permissions. In general, data are essential for these innovative platforms and systems, being the specific datasets of paramount importance for urban regeneration projects. The methodology comprises steps to achieve this vision; 1) to take stock of all existing information and available tools of data collection in the intervention cities 2) to harvest, combine and map data and provide tools to introduce more user-friendly features, opening up the possibility for citizens to make use of city data 3) to contribute to the establishment of a Community of Practice for knowledge exchange between citizens, city administrators, and project partners, to play as a virtual research hub for all the stakeholders, a cyberinfrastructure for data population, look-up, discovery, data fusion, and analysis, as an internal environment for sharing and creating in-progress data collection serving monitoring and evaluation of the Nature-Based solutions in the study areas. We proposed an approach to building a data platform based on the Integration of multiple open-source software, distributed systems, and the semantic web. Long-term sustainability and maintainability of a system is a serious concern for many institutions and projects. It is customary for several proprietary software systems and services that are not supported anymore or discontinued. Therefore the choice of using open source software and integrating them into a component-based architecture to reach a single coherent system was very vital and significant for this research project. The proposed architecture increased the functionalities and paved the way for flexibility and scalability in robust and long-term maintenance. This approach avoids complexity and possible shotgun surgery anti-pattern by component-based architecture, facades, and middleware that could improve maintainability. Summarizing the main achievements from this research are integrating open-source software to build a collaborative data platform to meet advanced supporting queries, underpinning knowledge and experience sharing throughout a digital environment, and tackling maintainability and scalability issues in the long term.

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- 1-C. Yang, Q. Huang, Z. Li, K. Liu, F. Hu Big Data and Cloud Computing: Innovation opportunities and challenges International Journal of Digital Earth (2016)
- 2- A.B.Chan,Z.-S.J.Liang,N.Vasconcelos, Privacy-preserving crowd monitoring: counting people without people models or tracking, in (2008) IEEE Conference on Computer Vision and Pattern Recognition, IEEE, pp. 1-7.
- 3- H. Shen, L. Huang, L. Zhang, P. Wu, C. Zeng, Long-term and fine-scale satellite monitoring of the urban heat island effect by the fusion of multi-temporal and multi-sensor remote sensed data: a 26-year case study of the city of Wuhan in China, Remote Sens. Environ. 172 (2016) 109-125.

### **1A.3 - 50 Years of International Documents on the Common Future of Humanity (1972-2022) - Convergence between Human Environment and Cultural Heritage**

Domingas Vasconcelos (0000-0002-3380-5599)<sup>1</sup>, Teresa Portela Marques (0000-0003-2936-5268)<sup>1</sup>, Teresa Cunha Ferreira (0000-0003-4325-4775)<sup>2</sup> <sup>1</sup>Faculty of Sciences - University of Porto, Portugal. <sup>2</sup>Faculty of Architecture - Universidade do Porto, Portugal

2022 marks the 50th anniversary of the Stockholm Declaration on the Human Environment (UN, 1972) and the Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO, 1972). Both documents

are historical milestones in the ways of understanding the desirable safeguarding and improvement of the quality of life on Earth, a worldwide problem for humankind.

Considering that climate change and its consequences now constitute a pressing and increasing threat to Cultural Heritage all over the World, in 2020 at its General Assembly under the leadership of the “Climate Change and Heritage Working Group” (CCHWG), the International Council on Monuments and Sites (ICOMOS) declared a Climate and Ecological Emergency.

Does the ongoing urgency for concrete action in face of climate change risks, led to an integration of both visions, environment and heritage conservation?

The aim of this article is to present a critical analysis of Declarations, Conventions, Charters, Reports or other documents of international scope that have followed these milestones over the last 50 years, looking for any convergences that may exist between those dealing with the safeguarding of Cultural Heritage, on one hand, and those dealing with the conservation of the Biosphere, on the other.

Analysing these documents, it is possible to observe that they report the increasingly evidence of the anthropogenic climate change harmful consequences. Warnings are being reiterated about growing pollution, particularly that related to greenhouse gases (GHG) and to oceans. Concurrently, given the constant global increase in temperature, the decrease in biodiversity, the depletion of natural resources essential to life and the quality degradation of landscapes, the call for all countries and stakeholders action in collaborative partnership is strengthened.

A global plan of action in areas of critical importance for humanity and the planet is launched in 2015 – “Transforming our world: the 2030 Agenda for Sustainable Development”. The 17 Sustainable Development Goals and 169 targets balance the three dimensions of sustainable development: economic, social and environmental. Same year, the Paris Agreement is approved, reinforcing, beyond institutional commitments, the importance and urgency of the local communities’ active participation and of each person engagement in climate action.

The reading also reveals that the search for answers to the global problem of safeguarding life and improving the quality of life of all persons and communities has improved the understanding and demand for a holistic, multi-sectoral, transdisciplinary and collaborative approach, integrating scientific and technical knowledge in an interdependent manner, as well as both traditional knowledge and local knowledge systems.

In this framework, Cultural and Natural Heritage can not only be a driver to respond faster to the implementation of adaptation and mitigation measures facing climate change, but it can also inspire methodologies and provide tools, as a palette of Nature-Based Solutions at the community’s disposal for the sustainable transformation of the city.

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Keywords: Sustainable Built Environment / Landscape and Architectural Heritage / Sustainable Development Goals (SDGS) / Climate Action/ Global Environmental Action.

## **Session 1B - Methodological approaches for enhancing the impacts of nature-based solutions: recognising the co-production of knowledge based on social sciences and humanities**

### **Coordination**

Beatriz Caitana (CES, Portugal) Laetitia Boon (City of Brussels, Belgium) Lucas Brasil Pereira (University of Coimbra, Portugal)

The complexity of urban contexts requires methods capable of promoting the co-production of knowledge, unlocking new perspectives that enable ways of comprehending territories not only by their physical and



material components, but above all by the set of socioeconomic, cultural and emotional relations integrated in their socio-spatial dynamics. The social sciences and humanities have a central role in decoding these relations, whether due to their broader understanding of the phenomena, or in their translation, leading towards a basis for interdisciplinary dialogue and more equitable solutions for all. Their recent connection to green and sustainable city agendas, as provided by the Green Deal, confirms their benefits: these include verification of whether and how sustainable solutions can generate new values for nature, promotion of the presence of more diverse and plural voices, and working towards more inclusive solutions for all. Through systematic social research, the changes that occur in the experiences, practices and production of pre-existing space can be better evaluated, as, for example, in sociological studies on urban practices capable of identifying common behaviours and practices (Goffman, 1963, 1974; Certeau, 1990; Serpa, 2013, 2017; Pereira e Teixeira, 2015; Tenório, 2012), as well as gender gaps in ecological and sustainable attitudes and practices. The observations of where, which and how bodies move, talk and perform in cities are able to inform everyday dynamics and help build an archive of the common everyday that often builds a sense of place. Methods drawn from the social sciences and humanities strengthen citizen involvement in climate and environment-related issues and domains (Scholte, Teeffelen and Verburg, 2015; Buchel and Frantzeskaki, 2015), as they can ensure better strategies to engage the wider community in effective behavioural changes and civic participation towards a more holistic and just transition. This session aims to include presentations (theoretical review, case studies, data analysis, project results, artistic performances, among others) from a wide variety of inter and multi-disciplinary backgrounds that will further inform discussions on the added value of methods coming from the social sciences and humanities to enhance the impact of NBS.

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### **1B.1 - Inclusion: mapping indicators, contributions to the definition of new urban policies**

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Reflection on alternative city models, such as smart cities and 15-minute cities, put the focus of sustainability on passive and active mobility infrastructures or pedestrianization. Models have succeeded disconnected from the real people, analyzed and respected in their diversity.

Modern, post-modern, industrial and post-industrial cities have reinforced the idea of the standard human being, a fact which generates inaccessibilities and dependencies. According to Hahn (1986) referred to by Gleeson (2001) the built environment is designed for the average human being. Beck Rails (1998) characterises the modern city as an apartheid architecture structured not primarily by racist prejudices but on the security of the 'productive elites'. The discourse around humanist cities is recent in international politics, as Kempin Reuter, T. (2019) advances.

The concept of inclusion falls within the contemporary framework of political, social and economic strategies. International treaties challenge territories to respond to issues of 'right to the city' and 'rights in the city' underpinned by the fulfilment of Human Rights (1948). However, this approach to combat discriminatory design has political and instructional limitations (Gleeson, 1999).

The Liang, et al. (2021) paper "Mapping Key features and dimensions of the inclusive city: A systematic bibliometric analysis and literature study" it is shown that inclusion is multidimensional and comprises spatial, social, environmental, economic and political dimensions, essential in participation, equity accessibility and sustainability in cities. An integral part of the 2030 Agenda that presents 17 Sustainable Development Goals, where the construction of inclusive environments is promoted.

In general, these issues have been addressed using planning methodologies and building regulations that aim to prevent, or at least reduce, the production of inaccessible environments and transport systems. Gleeson (2001) recalls that Imrie (1996) and Bennett (1990) have shown, through the context of Great Britain, that these regulations are often poorly applied.

In this context, the great challenge lies in implementing solutions that address correct and deeper assumptions than the mere application of regulations. The Urban Agenda for Europe proposes participatory methodologies, with a special focus on sustainability, gender equality and inclusion of vulnerable and at-risk groups.

This study presents the preliminary results of a mapping of universal accessibility indicators, as a contribution to the definition of new urban policies promoting prosperity, sustainability and socio-territorial cohesion. It is an opportunity to balance interests among stakeholders and create public value.

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## **1B.2 - Nature-based Play**

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Play is essential for children's well-being and happiness. Play amongst nature is especially powerful in supporting children's cognitive, emotional, and social skills (Children & Nature Network, 2017). Natural spaces allow children to explore, feel safe, and form attachments with other people and the environment. But it is not just children who benefit. Urban green spaces can have intergenerational benefits by tackling age-related inequality and building resilience (European Environment Agency, 2022). Parks and nature create a sense of community where people of different ages and backgrounds come together.

These benefits are under attack. Increased urbanisation places immense pressure on ecosystems, contributing to the climate crisis and biodiversity loss (UNDP, 2017). In turn, it is increasingly difficult for children and others to develop and maintain meaningful contact with nature, and to play freely and safely. In fact, children's play is being edged out of the modern city, and it is the most disadvantaged children who are disproportionately affected (Arup, 2021). Therefore play, just like climate change, is a social justice issue.

The interrelationships between play, nature and climate resilience are powerful. By integrating them, we can chart a course to healthier, more playful, and more resilient urban environments. Yet, nature-based solutions (NbS) practitioners are not necessarily considering play in their design, nor are public space and policymakers aware of how NbS can be playful. Our research bridges these two perspectives, highlighting the co-benefits of nature-based play for people and the planet.

We undertook a cross-sectional, descriptive study of 12 design projects that combine nature-based solutions and playful design. The projects represent diverse geographies, actors, and scales. They include a city-wide approach to nature-based play (Barcelona), a suburb masterplan (Auckland), a natural habitat preservation area (Guatemala City), natural playgrounds (Rotterdam, Fortaleza), a civic centre (Toronto), schoolyards (Berlin, Amsterdam), a street (Auckland), a private development (Ghana), an adventure centre (Upminster), and a public garden (Salford). For each project, we analysed project drawings and images and conducted remote interviews with implementers to identify key drivers and impacts, and to influence other cities around the world.

The study characterises specific design approaches and engagement activities that lead to co-benefits from nature-based play projects, for communities, nature, and the climate. They are divided into eight categories:

- 1-Transform perceptions
- 2-Enable proximity and access
- 3-Strengthen partnerships
- 4-Diversify play through nature
- 5-Connect with play heritage
- 6-Celebrate change
- 7-Experiment publicly
- 8-Grow facilitation

These categories – and the activities within them – support actors to make informed, context-relevant decisions when delivering nature-based play solutions for children's wellbeing and climate resilience. Drawn from diverse contexts and scales, they have strong applications in different places. The various benefits of nature-based play

that we identified will be used to develop planning strategies and indicators for measuring the progress of projects. Our final paper, then, provides a framework for designing, delivering, and measuring interventions with a concerted approach to play, nature and climate resilience – across different urban systems, financial capacities, and stakeholders.

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### **1B.3 - Participatory approach, mixed methods, and urban sustainable development in URBiNAT project**

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The paper passes through the analysis of the methodology used in the URBiNAT project with the aim to investigate the effectiveness of different methods to analyse intervention areas prior to the implementation of nature-based solutions. The URBiNAT (Urban Innovative and Inclusive Nature), financed by the program H2020, is a project with very challenging purposes: the analysis of different areas of the cities, the identification and the characterization of the deprived ones, and the rebalancing of the different city areas.

The innovation of our approach in respect to the traditional ones consists in the starting perspective: it starts from the identification of a deprived area in each analysed city and, through the implementation of solutions co-designed and co-developed from a community-driven processes, it arrives to the introduction of a new kind of NBS, the so-called healthy corridor. Interventions focused on the public space to co-create with citizens new urban, social and nature-based relations within and between different neighborhoods. To achieve this goal, complex realities and needs had to be very well underlined: therefore, the study areas have been analysed through an in-depth local diagnostic research. The major contribution focuses on the challenges of integrating objective data with subjective data collected from citizens: our hypothesis is that mapping both qualitative and quantitative data are indispensable for evidence-based urban planning, offering tremendous potential for gaining useful insights into urban spaces and their impact on citizens.

In the URBiNAT project we tried to set up, and to experiment in the field, a mixed methods approach to urban design and project evaluation, based on a multidisciplinary work.

Because the evaluation of alternative scenarios is a complex decision problem, both technical aspects, based on empirical observations, and non-technical ones, based on social visions, preferences and feelings, need to be considered simultaneously.

The reason behind this deep and multilateral investigation is to understand why the proposed solutions were different to similar ideas and therefore worth paying attention to.

This participatory approach is of increasing importance in urban planning and analysis for better investigating alternative options, scenarios and performances; moreover, the use of multiple methods brings to benefit of synergic effects.

Thereby, the URBiNAT project will serve as a case study and practical example for the investigation of suitable methods to successfully assess intervention areas.

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## **Session 1C - Direct and indirect benefits of water and vegetation in healthy corridors**

### **Coordination**

Katia Chancibault (IRSTV-CNRS, France); Patrice Cannavo (IRSTV-CNRS, France)

Water is a fundamental component of the urban ecosystem. It is a form of nature in the city that has multiple anthropic uses and must be managed in order to control potentially damaging effects (flooding, soil and water contamination, etc.). This issue can be approached from the point of view of both the environmental and social sciences, or a combination of these to offer a systemic overview of the subject. In cities, water-related NBS refer to certain well identified forms: constructed wetlands, swales, de-sealed areas, reopened streams, the remeandering and reprofiling of rivers, etc. The challenges and benefits of restoring the water cycle at a neighbourhood scale, such as improving biodiversity and managing flood risks, are well documented. This session will focus more on the NBS where water is "hidden". Indeed, some NBS, not directly associated with water, are nevertheless highly dependent on it. These are NBS that involve vegetation, especially when it is irrigated: green spaces, vegetable gardens, etc. Also applicable are NBS participating in urban cooling by means of shading effects, and includes the evapotranspiration process. Such NBS are often characterized in relation to their use of vegetation, but the process also relies on the availability of water. In order to develop a more systemic vision of water management, the session will also address the questions that are raised by the human and social sciences. Water-related NBS can also involve conflicts of usage: irrigation and water sharing, layout of renatured rivers, etc. The session will also focus on the perceptual aspects of this type of NBS such as safety and associated nuisances (mosquitoes, odours, etc). Scientific papers and policy briefs proposed by researchers and practitioners will be welcomed.

### **1C.1 - Stakeholder Perceptions of Nature-Based Solutions, Co-Design and Implementation in Rural Mountain Areas - A case from PHUSICOS**

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Stakeholders are increasingly realizing advantages of Nature-Based Solutions (NBS) to rapidly adapt to changing climate patterns and related impacts such as flooding, landslides, mudflows or rockfalls while providing a multitude of co-benefits such as an increased landscape value for society and biodiversity. Collaborative planning and co-design approaches such as using Living Labs can help to overcome bottlenecks when implementing measures and provide common ground to provide space for new ideas, to promote innovation and to develop solutions with high acceptance. While co-design and implementing NBS has already been applied and are well documented for urban areas, much less attention is given to mountain areas, although these areas are much more affected by changing climate and resulting increase in severe weather events. In our case study analysis from the EU-funded H2020 project PHUSICOS, we present stakeholder views on NBS from rural and mountain areas in the Pyrenees (France, Spain and Andorra), the Serchio River Basin (Italy) and in Gudbrandsdalen (Norway). The case sites have to tackle challenges such as avalanches, landslides, rockfall and debris flows (Pyrenees), reducing the risk of flooding and enhancing water retention capacities (all demonstrator cases) and reducing runoff and debris flow from agricultural land into waterbodies (Italy).

Besides literature reviews on collaborative planning on NBS and neighboring concepts, a series of in-depth interviews with selected stakeholders as well as standardized surveys are conducted throughout the lifetime of PHUSICOS. They intend to provide insights on stakeholder views, perceptions, awareness and expectations on NBS and the connected collaborative planning and co-design processes to establish tailored NBS solutions in the different study areas.

Outcomes from the first series of in-depth interviews and first standardized surveys indicate that despite the importance of NBS on political and research agendas, stakeholders are less familiar with the NBS concept. It was mainly encountered within river restoration measures. The main interest for implementing NBS in rural mountain areas was to reduce risks of natural hazards. A very important aspect for stakeholders was to find solutions that were attractive and interesting from an economical point of view such as creating new viable business models for farmers and landowners. Less importance was seen in a multitude of benefits which is often the most important aspect for NBS implementation in urban settings.

With a lack of knowledge and a proof of concept that NBS can reduce the risks of natural hazards, the Living Lab processes in PHUSICOS were seen most important to engage stakeholders and provide learning opportunities

about NBS. Especially “hands-on” cases” were considered very important to demonstrate the durability, viability and reliability of such solutions and to overcome skepticism.

With many expectations to NBS and the Living Lab processes expressed by the interviewed stakeholders in the PHUSICOS project, it will be particularly interesting to follow stakeholder attitudes and perceptions on NBS throughout the project lifetime. Learning, building trust and intensive in-depth collaboration processes seem to be the key elements for triggering action, mainstreaming NBS and gaining more acceptance of NBS over traditional grey solutions.

### **1C.2 - A nature-based solution for Mediterranean climates – Monitoring and evaluation of a modular living wall**

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As the world’s population keeps growing, and, at the same time, the percentage of people living in urban areas is rising, cities become denser, and overbuilding of hard surfaces is causing the depletion of urban greenery, exacerbating the urban heat island and increasing urban vulnerability due to climate change (Victorero et al., 2015; Weinmaster, 2009). Green walls are a nature-based solution attracting increasing interest for architectural green cladding. Green walls bring the natural environment into building technological systems in the urban landscape (Kmieć, 2014; Virtudes & Manso, 2016), forming a convenient solution to the above-mentioned problems.

There are different types of green walls, such as direct or indirect green facades and continuous or modular living walls (Palermo & Turco, 2020; Pirouz et al., 2020).

In this study, a modular living wall was designed and installed in Nicosia, Cyprus, characterized by a Mediterranean semi-arid climate. The modular living wall was assessed for its hygrothermal and sound insulation performances with an in-field experiment that compared the performance of the modular living wall against a control wall. During the experiment, (dry-bulb) air temperature, relative humidity, and sound level were collected for four weeks at the modular living wall and the control wall. The surface temperatures of the two façades were also acquired using infrared thermal photography. Moreover, in this study, a five-stage methodological framework for the plant selection phase of a green wall installation was developed and applied.

The results of this study always indicate lower dry-bulb air temperature behind the modular living wall, with a maximum reduction of 7.9 °C, due to shading from the green wall (Cameron et al., 2014) and evapotranspiration from the plants and the soil (S. K. Gupta, 2018). Also, a decrease in the sound level behind the MLW was measured with a maximum of 5.1 dB. Relative humidity was consistently higher (up to 6.6%) in the air cavity between the modular living wall and the building fabric but consistently lower than about 70%. On the contrary, absolute humidity was always lower in the air cavity, with a maximum difference of 8.6 g/Kg. The surface temperature of the modular living wall was observed to be, during the day, up to 27 °C lower than that of the control façade, which was in the same location and exposure. Furthermore, from the surface temperature monitoring of the foliage, it was found that foliage with a higher leaf area index is more effective in reducing the green wall’s surface temperature that, for the experiment conducted, it amounted to up to 5.8 °C.

Overall, the modular living wall proved to be beneficial for protecting the building materials and envelope components from high solar radiation and ambient temperature and increasing the cooling energy savings, while it requires water for plant irrigation.

This study was developed to contribute to an ongoing collaboration between The Cyprus Institute and Politecnico di Milano on nature-based solutions adopted for climate-change mitigation and adaptation, thanks to the contribution of the industrial company ItalMesh.

### **1C.3 - Potential of Nature-Based Solution for Hydro-Meteorological Risks Mitigation in Sub-Saharan Africa: A Systematic Review**

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Sub-Saharan Africa (SSA) is the region most vulnerable to climate change and related hydro-meteorological risks (HMRs). These risks are being worsened through rapid urbanization and the depletion of green spaces with their regulating ecosystem services (ESSs). The potential of nature-based solutions (NBS) to mitigate natural hazards is increasingly recognized in the Global North; however, its application in urban areas of SSA still needs to be systematically explored to promote its uptake in the sub-region. We therefore conducted this multidisciplinary systematic review following the PRISMA protocol to assess 1) the extent of uptake of NBS for HMR mitigation in urban SSA, 2) the location of NBS in relation to location of risks, 3) the specific practices in use and 4) the benefits

being derived through ESSs generated and livelihood opportunities created. After searching scientific journal databases, including Scopus, Science Direct and Web of Science; websites of 12 key institutions, including UN agencies and Local Governments for Sustainability; and 11 NBS databases, 45 papers were identified for analysis.

We found at least one reported NBS in 70.8% of SSA countries across 83 different locations. 62.2% of the papers however studied locations in South Africa, Kenya, Tanzania and Nigeria only, while the most studied cities were Dar es Salaam in Tanzania (n=6) and Kampala in Uganda (n=3). Sixty-six different NBS practices were identified, most of which were implemented for mitigating floods (n=44). We also found that NBS are implemented where risks are, but not where they are most severe. Among the most at-risk countries like Somalia, South Sudan and Mozambique, only Mozambique reported on NBS (n=2). Furthermore, blue and green NBS practices like mangrove restoration, wetland restoration; reforestation, urban forests; agroforestry and conservation agriculture are most common for floods, extreme heat and drought mitigation, respectively. These NBS practices also provided ESSs, including 15 regulatory, 5 provisioning and 4 cultural ESSs. Also, 4 in 5 NBS created livelihood opportunities, mostly green jobs in disciplines like horticulture, forestry, market gardening and eco-tourism.

We make several conclusions. First, that reported uptake of NBS for HMR in SSA remains low however, there could be more ongoing NBS, especially at the local level, that are unreported. Second, NBS are being implemented where risks are but not where they are most severe. Third, it is not too late for SSA to develop in a climate-resilient way due to the proliferation of blue and green NBS. This will help to avoid repeating past mistakes in the Global North that led to depletion and dwindling of green and blue spaces. Fourth, NBS could help address some of the major developmental challenges that confront SSA, including issues of food and water insecurity and unemployment, aside from climate change and the associated risks.

We recommend NBS to be mainstreamed into urban planning, for NBS to be improved through a co-created citizen science approach and for NBS that drive urban and peri-urban agriculture to be prioritized. Furthermore, we recommend that knowledge transfer opportunities between SSA and Europe be explored.

## **Session 1D - Food production and related nature-based activities for the development of sustainable and resilient cities**

### **Coordination**

Béatrice Bechet (IRSTV & U. Eiffel, France), T. Lebeau (IRSTV, France), L. Beaudet (IRSTV, France)  
Pietro Romano (Comune di Siena, Italy)

Urban food production has grown considerably over the last forty years, whether through the development of urban farms or through various forms of community gardens. Following on from the tradition of allotments of the early 20th century, community gardens are now complex social, technical and political projects. The different forms of urban agriculture and the social and environmental benefits of gardens (e.g. social cohesion, increased biodiversity) are extremely diverse. The potential of urban agriculture to provide key ecosystem services is well described (provisioning services, regulating services, social services). Cultural services are rather less well known. Certain criteria however such as the agronomic quality of soils, the risk of contamination of harvested products or the implementation of environmentally friendly and production efficient practices, could result in harmful practices. Community gardens deserve to have the option of developing and stabilising forms of urban agriculture in the open ground or even above ground. Cities may encourage planners and developers to reserve land for cultivation or food growing in new developments. This brings the issue of the sustainability factors of gardens to the forefront from the perspective of the resilient city. However, other difficulties can arise in the whole life chain of a community garden or an urban farm. Once the creation process is over and implementation has been carried out, the stabilisation phase (setting up the organisation, sustainability) can be long and even lead to failure. This session aims to collect feedback on ecosystem services in urban food production (urban vegetable gardens, urban farms, foodscapes...) which are ecological, social, and also cultural. Associated activities (e.g. cooking workshop, gardening education...) are particularly interesting as they involve citizens in food production and in the development of a community around urban gardening. There is particular interest in presentations that address the sustainability of gardens, including the exploration of factors such as governance and foodscape strategies. Presentations could address the implementation of the gardens or farms, citizen ownership and/or include their evaluation in terms of ecosystem services. Experts in NBS, stakeholders and social innovation promoters are welcome.

### **1D.1 - Green incubators for food waste reduction and smart city development: some insights from Brazil**

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This work aims to explore the role of business incubators in supporting smart cities in the transition towards sustainability. It does so through an inductive case study and interviews based on the analysis of the business model of Quintessa and its incubated startups. Quintessa is a business incubator, operating in Sao Paulo, Brazil,

which is a change maker supporting innovative solutions for social and environmental challenges. Quintessa is also a reference for innovation in large companies, within the Ecco Communities program, of the BRF (Brazil Foods) Institute, which aims to support solutions for the reduction of food losses and waste in Brazil, one of the biggest producers of food in the world. Food waste is a long-chain problem that the municipality must take care of. Not only do the householders waste food, but there are losses all over the production and distribution process, especially because of urbanization and the distance created between the urban population and the practices such as growing your own food, composting, or feeding farm animals with leftovers. In this sense, it is currently possible to avoid the harm caused by this scenario with the solutions proposed by startups dedicated to reducing food waste. In parallel, many municipalities are becoming smart cities, meaning that substantial challenges and opportunities emerge in the field of urban design and one of them is waste management. Mobility, logistics, and technology are also indicators of smart cities that relate to waste prevention and treatment, nevertheless, it is not yet in deep explored in the literature on smart cities the agency capacity of incubators for this purpose. Smart cities are a complex environment that aims for the orchestration of actors to work properly. The main objective of the study is to analyze if the incubator can create a network orchestration in which the participants' business can survive into the liability of newness and smallness and interact and share in the value creation of sustainable smart cities. Besides this, this article proposes some useful directions for city and business incubator managers to support sustainable practices for food waste reduction, by training small producers; creating solutions to reduce waste in stores and school feeding management, and generating income from the use of food.

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## **1D.2 - Food Production Through Nature-based Retrofitting Solutions: A Case Study of Plant Your Future**

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The human relationship with the procurement of food has changed dramatically over time. Historically, we followed the food supply, living a nomadic lifestyle. With the emergence of settlements, the agricultural revolution was triggered and humans began to dictate where food would grow. Yet, today, in reality, many humans do not know where their food comes from, beyond the supermarket or the food they are served. With increased migration to urban centers from rural areas, there is more pressure to provide accessible food sources within our cities. In 2011, the FAO reported that 1.3 billion tonnes of food is lost or wasted during the food cycle (FAO, 2011). New data suggests this figure now stands at 2.5 billion tonnes (WWF, Tesco and Anthesis, 2021). With these two considerations in mind, this paper tackles the question of understanding how, through inclusive architectural design solutions, we might be able to embed urban food production within the architecture itself, offering multiple ecosystem services.

With the analysis of 50 architectural state of the art projects focusing on food production and ecosystem services, we can observe that most solutions rely upon building new infrastructure to grow food. This results in a greater need for new land and resources. However, our cities already have large surface areas on which nature-based solutions can be implemented for food production, bringing food closer to where it is needed.

Through the case study of the project Plant Your Future, this article demonstrates how static buildings can transition into living systems through nature-based retrofitting solutions aimed at food production and re-greening, implemented through community based interaction. The design strategy was applied to a “generic” building in the first Superblock of Barcelona, to demonstrate the scalability and replicability of the strategy. The process began with an extensive environmental analysis, in particular radiation levels, to define three key design decisions:

- minimising construction to the existing building by implementing all new elements external to the building envelope;
- the subdivision of the facades based on radiation levels for the various plant species and biodiversity;
- a secondary skin that would provide an external access to the facades used to grow food.

This was integrated into a holistic strategy that engages with the use of readily existing growing and planting products, as well as utilising the rooftop structure, harvesting air humidity and producing algae.

The system presents a circular design that can be maintained by the community, to bring food production back

to our doorsteps, and empower positive environmental, social and economic change. Finally, these impacts were analysed in order to quantify the provision per capita, as well as demonstrating replicability and scalability. The strategies proposed, allow us to redefine the urban tissue, break the current linear food model and involve people in local and circular food production, transitioning towards inclusive and ecologically driven cities.

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**ID.3 - Urban Allotment Gardens: a strategy to build urban resilience during the Covid 19 pandemic**

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Urban allotment gardens (UAG) and community gardens have always had a crucial role in building urban resilience in periods of crisis. This has been the case in the dawn of the Industrial Revolution, in the two World Wars, the Great Depression, and more recently in the Covid 19 pandemic.

This paper presents first a brief synopsis of the role of UAG since the Industrial Revolution, including their part in several utopic urban models. Then it makes an inventory and discussion of the role of urban allotment gardens during the Covid 19 pandemic in Europe.

The method used in this research is a narrative bibliographic review in which scientific and informative materials on the subject were investigated, with a special emphasis on case-studies.

Results showed that UAG have always had great importance in terms of food security, social cohesion, and physical and mental well-being. More recently, they have also gained importance in promoting food safety and environmental justice. Due to all these benefits, UAG has been considered a Nature-Based Solution (NBS) due to its ability to provide diverse ecosystem services fundamental to urban resilience and urban quality of life (Artmann & Sartison, 2018).

During the Covid 19 pandemic, there was a general increase in the appeal and demand for UAG, as reported in several European countries such as Germany, England, and Portugal, leading to initiatives to increase the supply of UAG providing for food security and emotional support to the populations. In Nantes, France, public green spaces were even transformed into cultivation land, like in the two world wars, through the *Paysages Nourriciers* project, joining forces between municipal gardeners and local leaders to cultivate 23 green areas spread over 11 districts in the city. The first edition, in 2020, allowed the harvesting of 22 tons of fresh vegetables distributed to 2,500 homes in great precariousness.

As a result of the demand for UAG and the evidence that this typology of green spaces is crucial in building urban resilience, many cities are including edible green spaces in their urban or municipal green infrastructure. The Porto municipal master plan proposes the implementation of UAG in several documents, namely, to improve soil permeability and mitigate some of the effects of climate change, and to improve quality of life (CMP1, 2021). UAG are proposed in several preliminary studies for the Porto Green Structure, namely for Aldoar, Viso-Requesende-Prelada, Currais and Contumil, Asprela and Antas (CMP2, 2021). Despite this advance, the municipality does not acknowledge yet the full role that UAG can have in building urban resilience.

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**ID.4 - Urban gardens: how citizens can contribute to learn more**

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Growing urban populations worldwide are expressing a demand for reconnection with nature, reinforced by the COVID crisis. Indeed, the stay-at-home and social distancing requirements led to an increase in the demand of parks and gardens access (Geng et al., 2021). The development of urban gardening makes it possible to meet



some of these needs. A growing number of citizens are committing themselves to grow food in cities. This activity is also beneficial to their well-being and to the urban environment providing ecosystems services but also presents social, economic, cultural benefits (Guitart et al., 2012; Colding and Barthel, 2013).

To learn more about the environmental, economic and social cost and benefits of growing food in the city the FEW-meter project - an integrative model to measure and improve urban agriculture shifting it towards circular urban metabolism, was developed. Indeed, while urban agriculture is expanding, the evidence of its impact and potential effects remains limited. The project aims to study the resource efficiency of urban agriculture by measuring food produced as well as energy and water use (FEW nexus) in five countries (France, Germany, Poland, UK and the US) (Caputo et al., 2021; Kirby et al., 2021) over two growing seasons. It also aims to through analysis of this data to identify opportunities to improve the performance of urban farms and gardens.

The research team has recruited various gardeners and farmers to participate in the project. The typology comprises: urban farms, community farms, community gardens, school gardens, home gardens and allotment gardens. A citizen science approach, based on farmers and gardeners involvement, was used to collect data on food production and resource use (water, energy, fertilisers and any phytosanitary product, with any material used to support food growing). Moreover, the research team has surveyed practitioners and volunteers to define social indicators (Kirby et al, 2021). A diary was designed to transcribe quantities of crops harvested and resources used. Workshops were organized to present the results to the gardeners and farmers.

The communication will be focused on the process of involvement of gardeners from an allotment garden in Nantes (Nantes Nord neighborhood), the follow-up of diaries to collect the data and the organization of sessions to share the analyses of the results with the gardeners.

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Room 116

## **INNOVATING PUBLIC SPACE FOR INCLUSIVE CITIES**

Architecture of participation - symbiotic practices and theories for an inclusive public space
Urban plans for more inclusive and healthier cities: innovative municipal strategies and partnerships
Feminist cocreation of NBS for urban regeneration
The circular city: heritage, environment, businesses and governance

## Session 2A - Architecture of participation - symbiotic practices and theories for an inclusive public space

### Coordination

Gonçalo Canto Moniz (CES, Portugal), Luís Miguel Correia (University of Coimbra, Portugal), Vitório Leite (University of Coimbra, Portugal), Nanna Østergaard (SLA, Denmark)

Architecture of participation is a powerful line of thought that is normally defined and used in relation to spatial practices and theories to work towards more democratic and collective habitats. In this field of thinking, reflective actions established in top-down planning are normally seen as a reductor of the freedom that is stated, and reflexive actions or theories of bottom-up approaches are keen to be seen as processes that lead to more precise and transformative architectural works. The conflict between reflective and reflexive planning actions has always been present in the quotidian regeneration of our built environment. It can be an important phenomenon in the understanding of how we can rethink our own models and how we can organize an urban space that comprehends heterogenous identities and promotes inclusive lifestyles and healthy communities. So, this session will focus on the revaluation of the concept of citizen participation on the transformation of public space, from the perspective of the spatial planner or thinker.

URBiNAT is encouraging a co-creation process of nature-based solutions in the urban projects that it is implementing in social housing neighbourhoods. In this sense, rather than seeing people's engagement in the processes and the existing realities as a screen or a resource, researchers and practitioners are seeing them as an important part of the architectural operation, bound to it in a transparent, dynamic and symbiotic process. The creation of these apparently new dialogues, and new knowledge on this theme, always brings along the old debates about the authorship, tools, methods, and regulations for effective co-creation. In fact, old questions arise when it comes to participation such as: Who chooses? Who decides? Who creates?

This session aims to bring together both new and old matters, inviting architects, urban planners, landscape architects, social scientists and all thinkers on spatial matters to debate about the contribution that participation can have on architectural processes on three levels - strategy, process and design - and to share practices and theories that are using proximity procedures and open methodologies to achieve more objective, inclusive and emancipatory transformations

### 2A.1 - New forms of inclusive public space

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The global crisis caused by the COVID 19 health emergency represented a crucial moment of reflection on living habits. The pandemic restricted and interdicted public space, relegating inhabitants to their private areas. Citizens' psychophysical wellbeing had to be based solely on the quality of domestic space, which in many cases, especially for poorer households, is of low quality. In this sense, the pandemic crisis can be interpreted as an opportunity to rethink the role and importance of public spaces, green areas and alternative mobility in the city as democratic spaces for social inclusion. The correlation between people's psycho-physical well-being and the availability of equipped public spaces represents one of the new urban egalitarian paradigms for post-pandemic cities. Health and well-being are crucial objectives integrated within the notion of a sustainable city. For this reason, the configuration of urban space plays a decisive role in defining lifestyles and can contribute to improving the welfare of citizens. Many of today's diseases are caused by a sedentary lifestyle, it is essential, therefore, to centre prevention on the promotion of physical well-being encouraging an active lifestyle, which can be eased by changing the urban structure. With the aim of bringing about sustainable and healthy lifestyles, streets are in vogue. Streets are meeting and experimental places, theatres of everyday life and settings for cultural events. They provide crucial urban space for people and, in terms of urban studies, offer intellectual research nourishment to reflect on this fundamental element of the structure of the city. Out of the concept of sustainability, we can recognize new and more cutting-edge ways of planning and designing territories. A different approach to the enhancement of urban areas aims to consider heritage as part of a sustainable integrated system. In Rome, the overabundant presence of archaeology, always in symbiosis with vegetation, plays an important role for the image of the city and has helped maintaining the alternation of voids and solids in the urban fabric. Through a holistic and multidisciplinary perspective, we will discuss three case studies as possible ways in which landscape design and actions of citizens' appropriation of space can co-create the preservation of natural and heritage environments, as well as contribute to the development of healthier lifestyles, strengthening the local culture for the communities that dwell therein.

## 2A.2 - Minimalist Parameters for Public Spaces

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The minimalist lifestyle, which has been very popular in the last decade, especially in developed countries, mostly emerged as a reaction to the phenomena such as the increase in consumption habits and mass consumption. Similarly, in the face of negative consequences such as urban areas produced by the influence of neoliberal policies, rapid consumption of resources, the emphasis on the investment value of land in recent years, a minimal/simple perspective and understanding is needed in urban planning and the approaches that shape the space. Minimalist philosophy has always been seen in most of the belief systems and societies in different terminologies such as Zen, Wabi, Sufism, etc. It is an intentional downsizing the possessions in order to live a meaningful life. Therefore, minimalists may voluntarily choose consuming, recycling, and reusing sustainably, or looking for smaller-scale life forms (Vannini and Taggart, 2013). Minimalism often related with individual possessions. However, from the moral aspect of minimalist philosophy, public spaces as publicly owned lands are the central subject of this study. The property systems prevailing in pre-capitalist societies were often based on the understanding that the public was essential to use the land. Especially after the Industrial Revolution, with the intense development of high technology and mass urbanization trends and intentions, the philosophy of producing the built environment has started to leave that understanding.

The society produces the city and at the same time the city influences the society, vice versa. As stated by many urban planning theorists such as Jane Jacobs, Jan Gehl, Matthew Carmona, the physical environment affects human behaviour and lifestyle. But “before deciding what kind of physical environment to build, it should be determined what kind of world and what kind of life is desired” (Sim, 2019, p.293). In this context, the study focuses on looking at the urban space from a minimalist perspective with the aim of describing the urban codes and property relations that minimalism as a sociological phenomenon will reveal on the public space. Within the scope of this minimalist approach, qualitative and quantitative analyses were made by determining minimalist parameters on streets and public spaces, which are among the main urban coding topics (Marshall, 2011). Pedestrian activities, urban furniture, trees and green spaces, the relationships between road width and building height, open space dimensions, width of pedestrian crossings-arcades, simplicity of buildings have been examined in different public spaces. Results show that urban coding systems of public spaces differ according to the governance of cities. Property policies that are emphasizing the usage value of land are more likely to provide minimalist parameters for public spaces than the policies that put first the investment value of land. The parameters that emerge as a result of the comparisons are noteworthy for obtaining innovative policies of governance by institutions or societies that attach importance to minimalism.

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## 2A.3 - Inclusive engagement for vulnerable population in co-creating NBS: the case of ‘Villaggio Barona’ social housing within the CLEVER Cities project

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The pandemic situation has been impacting the EU-funded CLEVER Cities project (H2020 grant agreement no.776604) since the beginning of the Covid-19 appearance, putting particularly pressure on physical co-creation activities. In this project, the Urban Living Lab 1, namely CLEVER Action Lab1 (hereafter CAL1) of the front-runner city Milan, has been promoting and implementing Nature-based Solutions (hereafter NbS) - green roofs and walls. One of the four selected pilot projects of CAL1, the subject of this paper, consists in building four green roofs in terraces of social housing buildings named “Villaggio Barona” situated southwest of Milan. Different vulnerable groups of people live in each of the buildings, amongst the elderly, people with HIV/AIDS, and people with psychiatric illnesses, while one of the buildings is open for public use.

The paper presents the empirical knowledge acquired by putting into practice the “Co-design pathway” developed in CAL1 to engage citizens and local stakeholders in implementing green roofs and walls (Mahmoud et.al., 2021). It builds on the process established in the CLEVER Co-Creation Guidance (Mahmoud et. al., 2018), and has tested various tools and digital participation instruments as all co-design activities were held online. In addition to the co-design meetings, it will illustrate the completed co-creation pathway of “Villaggio Barona”

which comprises all the elements that impacted the various phases, the co-design, the co-implementation, and the co-monitoring of NbS. Furthermore, it will introduce the upcoming phases, the co-maintenance and the co-development of green roofs.

The aim of this paper is manifold. By in-depth narrating the co-creation activities of NbS in “Villaggio Barona”, the paper will show all the impacts that have challenged the implementation of green roofs. In order to critically discuss the role of the participants and the tools employed throughout all the phases of co-creation, the paper revolves around the question of accessibility, inclusion, and social innovation (MacCallum et.al.,2009). It will provide insights on how the elderly were engaged during the online co-design activities which served in bridging the “digital gap” that primarily affects this group of people (Van Dijk, 2019). Lastly, it will also provide some recommendations and reflections on obstacles and overcomes on the issue of inclusive engagement of the most vulnerable groups and how the latter play a crucial role to yield an effective co-creation pathway.

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#### **2A.4 - The resistance from marginality. Urban transformation and social conflict in Barcelona**

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Nowadays it is not so known about how the goals of social justice shape a strong long-term community organization that enables the realization of urban spatial alternatives and inclusive cities. We can find these alternatives in different cities around the world. The communities that inhabit these new spaces generally express concerns about health, relationships and care, dimensions that help launch projects such as the creation of urban gardens, Housing, and other forms of urban commons. Through an analysis of the neighborhood mobilization around the transformative projects of urban spaces located in the neighborhoods of El Ràval, Sants-Badal and Vallcarca i els Penitents, we can discover common patterns of activism aimed at rebuilding the community and politically resignifying the urban context, thus addressing the importance that the care relationship assumes within the community that struggles and resists. In particular, the relationship with alterity assumes a fundamental role because this occurs through self-organization and counter-hegemonic cultural practices in places where resistant marginalities intersect. The self-organization to which I refer is that of non-normative bodies that put life, care, affections and social reproduction relationships at the center before those of production.

I used the qualitative method for the field work research. In the neighborhoods I took in consideration I have done an observation work, observing and analyzing the common use spaces born from a reappropriation practice, starting from an observation positioned with a gender, race, class and age perspective. I used the Charmaz’s (2006) constructivist grounded theory method that is a research tool that focuses on the fact that are the data itself, as well as memory and observation, to be the basis on which interpretations and concepts flourish. .

For each neighborhood I have selected a space that can be considered an everyday utopia - a place where the utopia meets the ordinary to carry out daily practices in an innovative and unexpected way; the fusion between the everyday, the routine and the disturbing force of counter-hegemonic activities, makes the everyday utopia a unique source of symbolic power and imaginative force. For the selection of this kind of space I have spoken with an informant for each neighborhood and drawn up a first personalized map of the neighborhood. For the interviews I have used the snowball method, that consists in that an informant is asked to speak with a friend in order to ask her if she wants and consents to be interviewed, in this way is built a trust atmosphere between the interviewer and the interviewee. The interviews are unstructured following conversations held with a previously established purpose. These interviews have fewer questions as they lean more towards normal conversation but with an implied theme.

The objective is to understand the transformative power of these everyday utopias that are born in public space, a space that carries with it the power to share social reproduction, in particular care.

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## **2A.5 - Women's participation as a lever for the urban regeneration of public spaces**

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Social and urban interventions in regeneration projects allow cities to focus more on disadvantaged areas and to urbanize differently. This allows for more intelligent use of urban spaces that consider the experiences of different groups instead of the traditional gender-neutral space. To achieve this, citizens must be involved in the development of the urban planning of their city, mainly based on equal opportunities for men and women. The participation of women guarantees the promotion of equal access to decision-making. Indeed, the diversity of problems to be solved in complex urban spaces requires the development of innovative and inclusive approaches, capable of mobilizing the relevant resources and actors. These approaches often require the establishment of meeting places where inhabitants (and users of the territory) and local actors (public, private, associations) can meet, exchange, and share their skills and knowledge in order to contribute to the development of the city. At this level, the Urban Living Lab approach is seen as a support for the transformation of urban and territorial governance tools and as an urban research tool for solving problems in socio-spatial planning, design, social inclusion, and/or urban policy.

In this essay, we focus on the importance of involving women in the process of co-creation and urban renewal. Women's participation is often neglected or poorly supported by planners. We will examine this issue in an exploratory walk organized in the context of an urban renewal project. The aim was to work with women who live in the neighborhood concerned and women who are not familiar with it at all. Together we tried to highlight the qualities, opportunities, and shortcomings of the area in question, and thus enrich the reflections on its improvement.

The results show that the women have not fully appropriated the newly built infrastructures and that they have not improved the social fabric, in addition to the fact that marginalized people are not always present in the public space. In addition, women feel a sense of insecurity in public spaces due to prejudice or the quality of the urban space. The results of this exploratory research confirm that the involvement of women in a process of planning and transformation of cities is essential to promote democracy and foster social capital while encouraging quality developments that truly meet the needs of gender and class diversity. It is, therefore, necessary to move beyond traditional approaches, where public space (and its facilities) has been designed and built by men for men.

Focusing on the inhabitant (and/or the end-user of the space) as the main actor allows for more relevant and reality-based solutions. As such, the involvement of women can have a significant impact on the way urban space is designed, as well as on its influence on the other gender, society, and the environment in general. In this sense, women not only participate in the innovation process but also contribute to the city's access to important data for the development and improvement of urban spaces and equipment.

## **Session 2B - Urban plans for more inclusive and healthy cities: innovative municipal strategies and partnerships**

### **Coordination**

Gonçalo Canto Moniz (CES, Portugal), Joana Restivo (DomusSocial, Portugal), Ana Ferreira (Porto Municipality, Portugal), José Miguel Lameiras (BIOPOLIS, Portugal), Nathalie Roguez-Villette (NMCU, France), Philippe Bodenat (IRSTV, France), Velin Kirov (Sofia Municipality, Bulgaria), Milena Tasheva (UACEG, Bulgaria)

The first public interventions in housing in the early 20th century stemmed from the general concern with public health that arose as a result of the mass migration to the urban centres in the wake of industrialization. State housing provision increased as the welfare state was established after the economic recession. Mass construction of public housing took place all over Europe when the need for reconstruction was combined with the housing deficit of the pre-war years. Many of the housing estates that were built, as with others built during the following decades, were located where land was available to enable urgent construction. This land was often in peripheral areas of the city, and agricultural and industrial in nature, with low urban density. By and large, these areas were urbanized in a manner that was less than stimulating, and became in many cases degraded and problematic. With their high population

levels combined with socio-economic deprivation, these areas commonly had low levels of connectivity to the city and an uncertain future. Nowadays, cities are rethinking their urban plans in order to reconnect the urban structure that is often fragmented in terms of physical continuity, social integration and environmental quality. To mitigate this effect, new and innovative urban strategies are being developed with a national or international approach, created by networks of cities aiming to develop common methodologies, solutions and practices. These networks are receiving crucial financial investment to support research and innovative solutions that are aligned with the most up to date paradigms and agendas of sustainability and inclusion. Within this perspective, we welcome design practices, reports or policy briefs developed by means of regional, national or international cooperation and partnership between cities, focusing on the following topics: a) urban plans for a more inclusive, sustainable and healthy public space; b) participatory process methodologies and tools for an inclusive public space; c) co-creation and co-governance of nature-based solutions (NBS) for spatial planning.

### **2B.1 - Complementary Policies to foster Urban Regeneration: contributions from a systematic literature review**

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Urban regeneration practices have been increasingly used in urban development, aiming at reducing the consumption of new land and regenerating already developed urban areas degraded over time. In many cases, the processes of regeneration of urban areas are complex and require high investments, which ends up making it difficult to carry out projects only by public initiative and, as a result, the private sector and public-private partnerships become an alternative option.

Because it is an interdisciplinary area, urban regeneration practices can involve different policies: in addition to urban policies, urban regeneration policies and, in the case of partnerships, PPP policies, these practices are also related to land use policies, housing policies and sustainability policies, for example.

The relationship between urban regeneration practices with housing and sustainability policies can be demonstrated through regeneration projects dedicated to sustainable housing developments, carried out, in many cases, through partnerships. The idea of addressing housing projects in a sustainable way goes through the broader social concept of sustainable communities, through the involvement of the residents' population. Based on this, this paper proposes to identify and study, from a literature review on the theme, case studies concerning urban regeneration of housing developments when these are done through partnerships and aiming at urban sustainability.

The use of the case studies allows us to understand how these projects are inserted into the logic of sustainability, how the concept of sustainability has been adapted to the concrete practices of urban intervention and construction at the housing level, and also how the population of these developments has been incorporated into the concept of sustainable communities proposed by the interventions carried out, if this inclusion is done spontaneously or if there are conflicts and resistance by the residents.

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### **2B.2 - Green infrastructures and the new public city: a key nexus for resilience-based urban regeneration processes in the city of Altamura**

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This paper intends to present a co-programming path that has seen professionals and non-profit organizations collaborating with the Municipality of Altamura (Italy) in the development of planning tools and urban interventions based on the creation of new public spaces through the strategic use of NbS.

A critical analysis, aimed at detecting the imprinting and the strategic role that empty spaces have assumed in defining urban settlements, is carried out; Altamura is considered a representative city of Alta Murgia's area and its historical centre is reknown for its dense network of "claustrî", collective peculiar alleys and small squares surrounded by the houses of the old town (Massaro&Perrucci, 2020).

This urban imprinting has been pivotal in the drafting of the Integrated Urban Sustainable Development Strategy (SISUS) started by the Municipality in 2017 with the launch of the "Iperurbano" interinstitutional lab. SISUS is based on the creation of materials and immaterial resilient infrastructures, in coherence with the Puglia Landscape Plan, aiming to activate resilience-based urban regeneration (UR) processes in periurban areas coherently with a renewed city-countryside pact (Mininni, 2016). The green infrastructure's pilot project "IXE-CO2", today under construction since few months within the recent Parco San Giuliano suburban district, is analyzed. It's the result of a participatory co-design process joined by citizens, students, graduates, practitioners and academics conducted within the neighborhood.

The project addresses localized issues (hydrogeological instability, water bombs, heat islands, biodiversity reduction, CO2 absorption, lack of services) aiming to face such vulnerabilities by introducing new ecosystem services (ES) (Basnou et al., 2015); ESs are key elements of an abacus of solutions and guidelines allowing the incremental implementation of the project within the district (Cottino et al., 2022).

IXE-CO2 is featured in the 2021 ISPRA report on soil consumption (Munafò, 2021) due to ESs and NbS serving as an innovation factor in the governance of the UR process, pushing the limits and weakness of institutional capacity and governance strategies. These experiences aim to draw a collaborative model of intervention for an incisive management of UR processes.

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### **2B.3 - What we talk about when we talk about inclusive play space? A children-caregiver perspective**

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Every child has the right to engage in play and recreational activities. Public play spaces offer venues and opportunities for children to have comfortable social interactions with their peers through playful interaction. While children are direct users of play spaces, their caregivers (e.g., parents, elderly relatives, domestic workers) are indirect users who can benefit from using play spaces.

The existing literature on inclusive play spaces design has predominantly concentrated on children-friendly design aspects and factors hindering children's different play experiences. Researchers argued for catering for the needs of children with mind-body-emotional differences. On the other hand, some branches of research on inclusive design have widely acknowledged the importance of older adult-friendly public spaces at the policy and planning level (Loukaitou-Sideris et al., 2014). For example, the World Health Organization (WHO) age-friendly city initiative recognises that inclusive and accessible public spaces are crucial for the wellbeing of older adults and suggests recommendations for promoting public space as a pivotal part of the active ageing concept (World Health Organization, 2007). In parallel, it is increasingly common to employ caregivers for childcare duties. For example, migrant domestic workers coming from diverse cultural as well as social backgrounds. Thus, inclusive play spaces where the needs of children and migrant caregivers are considered can potentially constitute spaces for social



interactions among them and benefit their health and wellbeing. At the same time, play spaces inclusive of migrants can be significant in reclaiming the right to the city for this vulnerable group of workers. However, the possible design considerations and provision of facilities for the caregivers include the implementation of settings consisting of simple benches with or without shelters outside the play spaces (Siu et al., 2018). Much less is understood about the ways to promote the interactions among children with their direct carers, to facilitate the encounters among the caregivers given their diverse ages and cultural backgrounds.

This systematic review attempts to bridge this gap by examining recent studies on the needs and design factors of inclusive play spaces from a children-caregiver perspective. With a special focus on one age-based vulnerable group – the elderly, and one cultural-based socially vulnerable group – the domestic workers, we argue for a more in-depth understanding of the “meaning” of play space and play and a more balanced consideration of the needs and preferences of direct and indirect users. Evidence-based practices of inclusive play spaces are reviewed and analysed to generate insights on inclusive play and propose design directions that safeguard children’s right to play and cater to the needs of their caregivers.

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#### **2B.4 - (Green) Space between buildings: Public housing in Porto**

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Green space accessibility is a fundamental human right, a direct promoter of health and well-being of the urban populations. In Porto, the social housing estates feature a significant area of public green spaces when compared to other residential areas in the city. These neighbourhood green spaces play an important social role, as they provide inhabitants an everyday access to green, in areas with a high residential density that may be observed. Furthermore, in a city-wide context, nearly 12,5% of the inhabitants of Porto live in public municipal housing, a much larger number when compared to any other Portuguese city (INE 2012, INE 2022).

Research started by mapping the municipal housing areas and characterising them in accordance to the area of public green spaces by comparing the ratios between the number of residents and the public green spaces. A second level of analysis was developed by characterising these green spaces in accordance with their typologies and spatial configuration. This was followed by a qualitative approach, reflecting upon the use and function of such spaces, as well as its spatial fragmentation.

Results show that the ratio of public green spaces per inhabitant is 23m<sup>2</sup>/ha, which is above the average of the city, 7,8 m<sup>2</sup> (Farinha-Marques 2018). In particular, the municipal neighbourhoods from the 1950s, 1960s and 1970s have the largest densities of green spaces in the context of the residential areas of the city. Moreover, the housing estates built before and by the Plan of Improvements (1957-66) and its five-years extension, despite being carefully designed, had very limited areas, presenting the lowest area standards (and the highest occupancy density rate) of the municipal housing stock (Restivo et al. 2012). Implemented in the “areas of expansion”, a “crown” formed by these public municipal housing estates is still very recognizable nowadays. Once in the outskirts, these estates are part of the city nowadays.

The green space morphology of the social housing areas can be characterised as a highly fragmented group of green spaces. Even though the social function of these spaces is highly conditioned by its fragmented structure, these still represent a total of 64ha. There is a strong ecological potential, as these are highly permeable areas with scale for large trees, that could aid the city in terms of climate and ecological resilience. Looking at its location, it is clear that these can act as key elements for the consolidation of the pedestrian and cycling structure of the city.

This research demonstrates and elicits the potential of the urban green spaces in the context of the social municipal housing of Porto. These have the potential of being developed as a network of (continuous) green spaces to improve the urban social and ecological environment and increase the soft mobility, thus enhancing the connectivity with the city.

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## **Session 2C - Feminist co-creation of NBS for urban regeneration**

### **Coordination**

Nathalie Nunes and Isabel Ferreira – Centre for Social Studies, Portugal; Lia Antunes – University of Coimbra, Portugal ; Laetitia Boon – City of Brussels, Belgium

The design, architecture and uses of cities have been historically created by and for men, within a patriarchal, colonialist and capitalist matrix. An approach to urban regeneration through the lens of gender opens up opportunities to promote respect for diversity, the acceptance of complexity and improved conditions of participation. Furthermore, an eco-feminist perspective in relation both to climate change and to environmental justice is essential to the rethinking of approaches to urban projects in relation to current city models – models which contribute greatly to environmental degradation, high levels of pollution and the waste of resources. Simultaneously, the challenges imposed by the COVID-19 pandemic cause us to reflect on new urban paradigms from a critical feminist perspective that prioritizes responses to the environmental crisis and the care crisis. The intention of feminist co-creation is to include different experiences and knowledge of women's needs, ambitions and activism in the urban regeneration planning process and in the co-creation cycle of nature-based solutions (diagnostic, design, implementation and monitoring). It consists in applying the lens of women's (defined as all persons identifying as such) specificities as they intersect with other specificities such as age, gender, ethno-racism, socioeconomic status, and functional diversity, amongst others. By focusing on the causes of discrimination and exclusion relating to a diverse group of women, feminist co-creation tackles issues of access to and the implementation of rights, with the aim of combating racism, sexism, homophobia, Islamophobia, ableism, ageism, adult-centrism and climate change, among others. Women offer specialized insights on the reconciliation of urban uses, and the needs and ambitions for production, reproduction and care work.

Valuable insights, interventions and policies are being put into practice by women. Women's historical footprint, eco-feminist design and the inclusion of gendered considerations in public budgets have been promoted by feminist and activist groups, as well as by women's grassroots movements. These are important and empowering alliances to forge in urban regeneration processes. Co-creation with and by women of all ages, including girls and older women, enables the contexts for urban regeneration processes to: 1) embrace specific and intersectional needs and ambitions; 2) consider the impact of urban design on women's lives, including perceptions of security and insecurity, equal access, use and care of facilities and public spaces; 3) generate equal opportunities for socialization, for developing social and solidarity initiatives and for resource redistribution in public budgeting. This session is dedicated to debating the challenges and opportunities for the co-creation of NBS through the lens of gender in the context of inclusive urban regeneration. Proposals, which may come from different geographical, governance and participatory realities and cultures, are expected to identify case studies, experiences and guiding principles that contribute to the framing and consolidation of a gendered perspective, working to achieve an inclusive urban environment and public space for all. This may include contexts where active co-design and co-implementation by women was made possible and demonstrated its value, or where frictions due to the exclusion of women arose and what these made visible.

### **2C.1 - LINA Feminist Architecture Design Studio: a didactic experience towards inclusive and democratic cities**

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Access to habitat as a human right, the growing awareness of integrating gender issues into the design and re-design of cities and the multiplication of actions aimed at making visible the contributions of women in the built environment, constitute a social, cultural and political context that both erodes traditional forms and calls for new pedagogies with a gender perspective when training students in the field of architecture, urbanism and landscape.

Architecture is not a neutral discipline and historically it has been thought, legitimized and taught from an androcentric, binary - female/male, private/public - and racist vision that has suppressed the voice of women and minority and/or minoritized groups in spatial design: LGBTQI+, children, elderly, disabled, migrants, aboriginal communities. In this context, architecture schools find the opportunity to integrate a feminist, gendered and intersectional perspective into their didactic strategies as a theoretical and methodological underpinning. This allows students to actively engage the diverse realities, identities and needs of the community as a fundamental part of the design process in order to think about caring and democratic cities.

In this context, the platform LINA -Laboratory Intervention + Architecture- opened the Feminist Architecture Design Studio in 2020. It is hosted by the GADU Programme -Gender, Architecture, Design, Urbanism- of the Institute of Human Spatiality at the Faculty of Architecture, Design and Urbanism of the University of Buenos Aires. LINA is an inter-university virtual course that involved 275 students from 15 architecture schools in Argentina, Bolivia, Chile, Uruguay and Peru during 2020 and 2021.

LINA's main objective is to stimulate future professionals who base their spatial practices with a true sense of inclusion, equity, diversity and innovation. It is organized into three thematic laboratories: Registers + Women Architects dedicated to making visible the work of women in urban planning and architecture, (De)Constructed Architecture(s) in housing and gender and (Inter)Sectional Landscapes focused on public space.

The (Inter)Sectional Landscapes Laboratory proposes to reflect and research from a feminist approach the rehabilitation of collective landscapes. Each group of students selected a public space as a case study: squares, boulevards, parks, urban voids in marginal areas, block centers, mass housing estates and their own university campuses.

First, the students re-mapped from a gender perspective the physical conditions - density, morphology, transport, care infrastructure- that produced imbalances in full use by the whole community. As the context of the pandemic prevented personal interviews with residents, information available on the internet - crime maps, statistics, reports - was used, and surveys were conducted through social media to gather people's opinions. In most cases, profound conditions of symbolic and spatial discrimination were detected, even in recognized and preserved heritage sites.

On this basis, concepts and operations were explored for re-use. One of the most important aspects of the proposals was to recover the political role of architecture. In this sense, some interventions included cultural itineraries to tell the story of the transsexual community, spaces for LGBTQI+ marches or social assistance facilities for gender violence. It should be noted that in Latin America a woman dies every two hours as a victim of femicide.

Democratization and equitable access to public space were other topics of project research. Although each case study had particular challenges, common themes emerged when defining rehabilitation strategies: safety (lighting, signage), accessibility, the creation of areas for all ages and genders, places for play that promote children's autonomy, among others. In addition to spaces for leisure, recreation and sport, the projects also combined productive landscapes such as urban allotments and community gardens. Especially in low-income areas, these places strengthen the social network and the popular economy.

## **2C.2 - Women's visibility of presence at the local level of the URBINAT process in Sofia: responsibilities, points of view, and action effectiveness**

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The importance of gender dimensions in the development process and its key relation to environmental justice and public health is increasingly focused upon interdisciplinary research (Bell, 2016). It is also acknowledged in the Sustainable Development Goals (UN, 2016) and explicitly addressed in the New Urban Agenda (UN-HABITAT, 2017). The gender aspects of urban development were addressed by the URBINAT project (Nunes et al, 2019) and traced within the inclusive urban regeneration initiated at the north-western periphery of Sofia, which mobilized local institutions, academic researchers, and community actors to undertake public debate, policy-making procedures and co-planning and co-design activities for implementing nature-based solutions (NBS) in the existing public space of the housing estates of Nadezhda District. The urban analysis of the local process in Sofia also included inhabitants' use and perceptions of urban space, problems perceived, existing motivation and readiness for practical action, etc. The project resulted up to present in building communication channels among diverse actors, discussing inhabitants' needs and values, and co-designing a set of interventions, forming a Healthy corridor in the public space.

The paper presents an overview of the multi-faceted women's participation in the URBINAT process in the diverse roles of researchers, administrators, inhabitants, policymakers, local planning experts, community activists, workers in the fields of education and culture, business actors, and homeowners' representatives. While building on a gender-sensitive perspective, the analysis relates publicly available data to the URBINAT study results in Sofia obtained through desktop reviews, direct observations (incl. behavioral mapping), and self-reported data (survey, interviews). Additional interactively generated information was also compiled during task force meetings and communication, exhibitions, URBINAT events, a walk-through, focus groups, cultural mapping, workshops, advisory board composition, and sessions. The paper discusses estimated women's capacity for leadership and their contribution to the selection of nature-based solutions (NBSs) to integrate into Sofia Healthy Corridor. General tendencies and peculiarities of the actors involved, their activities in public space, their perception of public life, and their contributions to organizing public space are identified.

The authors outline general challenges to overcoming the traditional power-dominated planning approaches and the existing local capacity for doing it. Specific strengths and opportunities stemming from the national and local socio-cultural context are conceptualized. Conclusions are drawn about the importance for achieving complementarity of gender roles in the process. Recommendations are made on the further conceptual development and the practical implementation of gender- and context-sensitive studies and the effective practical implementation of relevant co-planning and co-design methods in public space.

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### **2C.3 - Mulheres em Construção! An ecofeminist urban and training project in Portugal**

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In Portugal and around the world, the right to housing has been key to face COVID-19 pandemic. Women still handle most household chores, historically and socially assigned to them. They have better knowledge about housing issues and family demands.

In Portuguese families, women are the main caregivers, spending most of their time at home and suffering from frequent house precariousness. Still dependent on others for refurbishment works and improvements.

In times of crisis, unemployment firstly affects women, who already earn lower wages than men and are more exposed to the informal economy and poverty. Simultaneously, Portugal faces a workforce shortage in the construction industry with delays being noticed on site. Hence, empowering socially vulnerable and unemployed women to succeed in this field is a way to leverage their economic, professional and personal autonomy.

The Portuguese association Mulheres na Arquitectura, within the public program Bairros Saudáveis, designed a pilot project to train women of Aveiro in different jobs of the construction industry. Mulheres em Construção! (Women in Construction!) asserts theory and practice with direct participation and cooperation between several partners.

With progressive growth since the moment of application, the partnership network gathers public, private, cooperative, associative and social solidarity organizations. Local partners ensure a situated work focused in Santiago neighborhood; national scope institutions provide the resources and knowledge of systemic public policies; private partners provide trainees the confrontation with construction sites and possible routes of employability; academic and scientific organizations guarantee an exceptional complement for the training plan and direct dialogue between social and cultural spheres that still hesitate to work together.

The female trainees group is diverse and eager to learn technical (plumbing, electricity, masonry, painting) and civic (gender equality, digital literacy, health and safety) skills.

Personal empowerment, training for employment and reinforcement of community networks supported by the principle of mutual care, are the main project goals, showing that jobs do not have gender.

The certified training plan is complemented with workshops, given by partner organizations, providing administrative tools, conservation technical skills, knowledge about building materials and the industry's sustainability issues and practices.

A refurbishment work at a local association store creates an opportunity for trainees to acquire skills and experience that only working in a construction site can provide. As a way of promoting a circular economy, the store will finally serve as a community toolbank, making donated construction goods gathered along the project available to residents. The bank's management by a local partner will allow longer viability and good management of donations and loans to residents.

The final step of the project will be an evaluation of results and impact. Mulheres em Construção! is a demanding project that attempts to make scientific and public policy analysis and reflection operative and transformative for a specific urban context. In Jane Jacobs' line, MA's role, as an organization that reflects and intervenes at the crossroads between gender equality, space and territory, is to create seeds of its own regeneration in Santiago neighborhood and within each woman it works for.

### **2C.4 - Women's Voluntary Work in the Community in South Korea: A Question of Recognition and Rewards**

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In South Korea, the state has played a minimal role in social provisioning, and as such care provisions have been dependent on women's unpaid labour. Women's unpaid labour, especially in terms of voluntary activities, have played an important role in the sustenance of the community. However, women's voluntary work is often devalued as a free and readily available resource in public policy. Over the last few decades, a series of innovative policies on

building community and promoting social economy were implemented in South Korea to address problems of low economic growth, an aging population and polarisation of the society owing to neoliberal restructuring. While Korean women played pivotal roles in these innovative community building projects, the socio-political connotations of their voluntary work, including appropriate public recognition and rewards, have rarely been discussed. This paper examines Korean women's role in the government-funded neighborhood community building project (maeulmandeulgi) in South Korea.

From the mid 2000s, a series of policies including voluntary activities, social and solidarity economy emphasized "citizen's participation". However, the nature and the meaning of the "participation" differs. Voluntary activities are often described as "citizen's duty" by the government. "Dutiful citizenship" describes the government's approach towards voluntary activities to meet its policy needs. But actualising citizenship describes the citizen's actions driven by their own needs in everyday life. The social function of voluntary activities is not different, but they are different to each other in terms who controls one's life. In this regard, the policy on voluntary activities have more to do with dutiful citizenship, while actualising citizenship can be better understood with the help of Social and Solidarity Economy and community building which emphasises citizen's participation.

Community building projects can be seen as an opportunity to recognize and reward women's role in community-building and maintenance and institutionalizing care responsibilities as social jobs. However, this paper shows that the current way of executing the projects may result in appropriating community activists into cheap labour in the highly informal labour market. Although the funding for the community projects seems like a great idea to enhance citizen's participation, it may result in creating a highly informal labour market for the execution of government projects, whether they are individuals, or those who belong to small groups, NGOs, cooperatives or social enterprises. With women still constituting a majority in these spaces, this entrenches devaluation of women's labour and women's marginalized position in the labour market. Moreover, the activists' autonomous and voluntary actions are increasingly subordinated under administrative processes and policy needs, not only exploiting the voluntary labour of the citizen but also bureaucratising the social spaces of actualising citizenship. In the end, materialising institutional social recognition – such as recognition of activist's work as social jobs – cannot be separated from the policy design and action plan. The guiding question would be how the administrative process can be designed to reflect the ideas that voluntary activities are counted as citizen's participation. More specifically, financial transactions including allocating budgets need to be embedded in the socio-political context of citizen's participation.

## **Session 2D - The circular city: tradition, environment, businesses and governance**

### **Coordination**

Marco Acri , Saša Dobričić (University of Nova Gorica, Slovenia), Thomas Andersson, Ingrid Andersson (IKED, Sweden), Guido Ferilli (IULM, Italy)

Not only are cities making an ever-increasing contribution to the massive amount of global waste generated by human society, but they are also becoming places of pure consumption, having almost fully lost their characteristics as places of production; to quote Latour "...the life we live in is not the life we live from...". In history, living in the city also meant living in proximity to the places of production, in cities which were almost self-sufficient. Nowadays, urban users are producers of demand and waste, conscious of 'the life they live in' but unaware of 'the life they live from'. This phenomenon has been acting as a driving force in cities, with an emphasis on historic areas which become purely tourist attractions that are increasingly characterized by the presence of leisure and entertainment services (mainly bars and restaurants), thereby reducing the conditions needed to enable these areas to be fully residential. In contrast to this, a change is offered by the circular economy which asks for more resilient forms of living with an emphasis on urban environments. The ideas of the circular economy are also impacting the built environment, addressing the retrofitting of buildings and the building construction process itself, as well as reimagining how assets can best integrate and serve within the city, with suggestions for new models of spatial and social use. The objective of this session is to investigate new forms of urban use aligned with the circular economy, especially in terms of social and economic innovation. New ideas are needed to reintroduce production to the city in line with modern health and safety standards and based on territorial valorisation and resilience. New residential forms may also be introduced, potentially breaking the traditional home-work dichotomy, and relying on history, nature and NBS to provide inspiration for resilience. This session is expected to receive inputs from past, recent and ongoing research and experience - from both academia and the field. Contributions from private initiatives and suggestions from both companies and non-profits will be welcomed.

### **2D.1 - Redesigning Mértola's Infrastructures through Nature-based Solutions: connecting spaces, nature and people**

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Nature-based solutions promote socio-ecological adaptation and resilience; through a systemic approach. They consider human well-being, sustainable economic development and environmental benefits. This work aims to design and implement nature-based solutions in Mértola, Alentejo, in Portugal, as a way of improving living conditions in the territory.

Mértola is an aged territory, with very low population density (4.7 inhabitants per km<sup>2</sup>). The Alentejo Region has one of the highest suicide rates at world level, with 54.2 deaths per 100 thousand inhabitants (INE, 2017). Psychological problems also have a worrying expression in this region (e.g. dementia, anxiety, depression...). In addition, climate change and resulting heat waves, place the senior population in conditions even more vulnerable, especially when the territory doesn't have the infrastructure to tackle the problem. Mértola's Köppen-Geiger climate classification has changed recently from Temperate (Csa) to Semi-arid (Bsk), due to the extreme temperatures and lack of precipitation. The soil is incipient and degraded by successive monoculture campaigns and erosive agricultural practices. The urban landscape is dense and lacks green spaces. Mértola is also known as Village-Museum, which makes it difficult to approve nature-based projects because the plants' roots could damage its heritage. However, NBS are enormously successful in responding to societal and climate change challenges, such as those that Mértola is witnessing. They could allow the municipality to improve the physical and mental health of the community, while mitigating climate change.

The selection of areas to intervene was made through a GIS analysis of the territory. The parameters considered were: land surface temperature, types of infrastructure and their classification of use, capacity to support and allow the growth of plants; the possibility of using existing structures and the proximity to water resources and/or green areas. Participatory mapping was also used to understand people flows and the most frequent crossing points. The project valued local know-how and brought together different entities that work and know the territory, including the Mértola's City Council and the Terra Sintrópica project. The latter is used as a case study to demonstrate the results of the principles of syntropic agriculture in the regeneration of soils in Mértola, consequently necessary for the implementation of NBS. The one month period of stay in the territory and contact with the population contributed to the selection of the type of intervention proposed. It was highlighted the need for spaces of recreational value which they could visit on hot days so they didn't have to be isolated in their homes. The community participation reinforced the feeling of belonging and helped dissolve any conflict that could have taken place.

The final design considered the necessary resources (natural elements and artificial materials); as its origins and composition; its functionality and aesthetic benefits; and has the ability to preserve the identity of the municipality. This is a pilot project that could be adapted to all territories with identical characteristics; therefore, the implementation phase is left to each municipality's responsibility.

## **2D.2 - Spatializing cities' geographical consumption footprint or, the visualization of urban unsustainability**

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In recent years, the multiple dimensions of climate change paired with unprecedented forms of rapid urban expansions have created, in planning and architectural fields, a general sense of responsibility and the need for tools to help manage the efficacy of these considerations within practice. In order to overcome the operational struggle that confronting such intrinsically complex problems creates, the paper discusses the relevance of narrative-specific data-visualizations in triggering actions for ecological transition, consequently addressing the original environmental challenges.

Exploiting several data layers, among which the Ecological Footprint consumption values, a computational methodology to visualize a city's consumption over its surrounding territory as it would operate only by proximity over local resources is introduced. It avoids the over-complexity of mapping the real flows for which the city is responsible, while obtaining a still tangible understanding of its citizens' - often unsustainable - lifestyle. In this manner, it offers a proportional model to reconnect cities to their land consumption, which can further act as a propositional base for planning processes towards the sustainable management of resources and materials.

Additionally, addressing the topic of consumption at the city level through the lens of its surrounding territory offers an opportunity to globally perceive the challenges of urban circularity if exploiting computation paired with the vast resources of online databases. In this regard, the research proposes a big-data supported tool that, while trading off a certain level of precision in the representation of the single city in favor of a global overview on the topic, finds relevance in its holistic and ubiquitous attributes. For this reason, an algorithmic pipeline is developed in the R programming language to query, process, and display city-specific cartographies, further rendered accessible in an intuitive web interface. More specifically, in order to compute the aforementioned city-specific analysis, the application exploits three data-repositories:

The geonames database: to retrieve the demographic and geographical information on cities, basis for the analysis;

The National Footprint and Biocapacity Accounts 2022 Public Data Package: as main reference to calculate the per-city land consumption values, cross-referencing the national estimations to the specific population of citizens;

Google Earth Engine (GEE): to fetch and process the GlobCover -land cover map- layer, consequently filtered by proximity, or, according to a cumulative cost analysis run in GEE based on the Global Friction Surface 2019 layer.

Finally, the paper argues the possibilities that tailored data-analysis opens, through speculative - yet, theoretically contextualized - approaches, to understand complex problems inherent to the global metropolis. Whether by visualizing the dormant regional tensions driving metropolitan governance, by strategically supporting the development of OKm policies, or by triggering a social “awakening” effect, the work aims to give new light on the issues of land consumption and urban self-sufficiency; key to enabling truly responsible circular cities.

### **2D.3 - Revealing built heritage through social media: Comparing the attributes and values conveyed by locals and tourists in Faro, Portugal**

Roy Swinkels, Krist J Van Herck, Emisgul E Sahin, Bruno Amaral de Andrade, Ana R Pereira Roders, Ana M Tarrafa Pereira da Silva  
Technical University of Delft, Netherlands

Society conveys values to cities and their buildings, the key to sustainability, only in part recognized as heritage values, when protected by urban and/or heritage planning. There is a growing recognition of the importance of acknowledging the values conveyed by locals and tourists in heritage management and urban planning. However, the knowledge and tools available today remain predominantly expert-based. Their contribution to heritage listings and conservation plans is therefore limited. Moreover, some cities tend to unbalance locals and tourists’ needs, leading to overly touristic areas, gentrification and communities’ exodus. Although research on the values conveyed to cities and buildings is growing, there is seldom research comparing them, nor researching its evolution over time. Hence, how do the attributes and values of Faro’s heritage conveyed by locals and tourists set the frame for transformation? This research developed at a master’s design studio aims to reveal the cultural significance (values and attributes) conveyed by locals and tourists, taking the neighborhood São Francisco (included in an Urban Rehabilitation Area) in Faro, Portugal, as a case study. By using multiple methods relying on spatial analysis, which includes photographing, mapping and categorization of the facades and their attributes in São Francisco, and social media analysis, where a hundred Instagram posts were manually collected following strict guidelines, heritage attributes could be identified. Public engagement was used in the site survey game in which pictures of the attributes would be shown to locals and tourists who would connect predefined words to them in order to collect the heritage values. By following these methods, this research aims at revealing patterns and relations between: 1) attributes, in particular, buildings’ facades and their characteristics (morphological analysis) and 2) values (distinguishing local and tourists). After the fieldwork, results showed clear concurrences and contradictions between both communities. Results that stood out contain the general low appreciation of contemporary apartment complexes while agreeing on the quality of pre-existing typologies. In some cases there was ambivalence, such as the perception of street art, the materialization of facades, and the authenticity of attributes developed into design guidelines for a masterplan in which these relations are portrayed. These consist of: 1) areas of facade conservation, 2) area of opportunity for redesign, 3) an area where the current building height should be maintained, 4) a buffering zone for highrise buildings was established to release the pressure from the conservation area, responding to an existing increase in height, 5) specific locations for street art. By understanding these relations, the Municipality of Faro can improve their awareness of who values what, and why, in order to support their strategies about how to accommodate new functions in historic buildings while respecting the limits of acceptable change of built heritage according to these stakeholders. Hence, the expected impact is to raise awareness about the cultural significance of both societal groups in order to better inform heritage management and urban sustainable planning.



Room 136

## **TRANSFORMING GOVERNANCE FOR INNOVATIVE CITIES**

Whose right to the city?: functional diversity and the co-creation of nature-based solutions for an inclusive public space

Building the right to the city through diverse spaces of commoning: which role for ruling frameworks?

Co-governance for the co-creation of nature-based solutions

Cultural mapping in the city's co-creation processes toward sustainability



## **Session 3A - Whose right to the city?: people with disabilities and the co-creation of nature-based solutions for an inclusive public space**

### **Coordination**

Isabel Ferreira, Nathalie Nunes - Centre for Social Studies, Portugal; Daniel Neves da Costa (Faculty of Economics - University of Coimbra, Portugal); Marina Dias de Faria (Centre for Social Studies & Faculty of Humanities – University of Coimbra, Portugal)

The engagement of citizens and other stakeholders in urban regeneration processes is a consequence of the acknowledgement that development of the urban space is more than a task for local administrations alone, but is in fact a broad social phenomenon in which those actors introduce inputs and appropriations to form complex combinations of urban configurations and identities.

As a matter of social justice, the planning of citizen engagement must address the challenges and cultures related to the implementation of participation in an urban governance context, as well as in the universe of stakeholders, including their diversity and specificities. To allow citizens to make full use of their potential as participants and contributors to their territory, the promoters of participatory processes need to be alert to the specificities, requirements and limitations experienced by the various segments of citizens.

In this sense, recognition of specificities and inclusion are not a matter of number of participants, but of balanced diversity, the valuing of specificities and the empowering of corresponding inputs. The social model of disability postulates the notion that people are disabled by barriers in society, not by their impairment or difference. Those barriers can be architectonic, communicational or attitudinal, resulting in unequal access to public spaces and services, leading to social exclusion. Involving these actors as protagonists in the discussions on urban regeneration processes is fundamental, given their position as future users, to ensure that the principle of accessibility is upheld. This includes, for example, conditions that facilitate mobility, as well as equal rights to the environmental, social, and economic benefits of solutions that make use of ecosystem services and nature.

This session focuses on debating the inclusion of people with disabilities in participatory and decision making processes, in particular in relation to inclusive urban regeneration utilizing nature-based solutions. Topics may address, but are not limited to: identifying discrimination based on functional diversity, including an intersectional approach; identifying the role of capitalism in the exclusion of people with disabilities from urban spaces; measures to accommodate functional diversity that allow full inclusion in participatory processes; debating the role of inclusive urban spaces in combating the social barriers most often faced by these individuals as “barriers to doing”, “barriers to being” and “barriers to speaking”; inclusive design and planning of public urban spaces.

### **3A.1 - Place-attachment and Urban Ageing: Exploring The Evidence-based Spatial Criteria in the Human-centric Ageing-in-place Dwelling**

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Urban aging necessitates adequate dwelling and interacting place for elders' daily routine activities; cities need to sustain critical policies to guide and encourage the spatial and social infrastructure in maintaining the place-based advantage. While it is clear in the literature that ‘age in place’ is much preferred, resilient living habitat for the prevailing ageing community demands further attention. Urban age-friendly environments based on action frameworks have been identified. Thus, communities necessitate converting their public and personal amenities geared to the ageing residents in accord to stakeholders' needs. The process is often faced with severe spatial-temporal challenges. These critical environment-related experiences often result in an increase in the willingness to ageing-in-place as well as in a sense of wellbeing in elderly inhabitants.

Senior residents ageing in place requires more stable urban services, while the elderly's place-attachment and identity can be preserved through familiarity and collective attribution; housing environment holds its own physical and social identity based on its main features and constructed by a collective attribution; mainly, each resident use the self-identification of the city—the built environment with its connotative meanings—influences a person's identity. Person, place, and process evolves into place attachment. The attributes of an age-friendly environment are necessary and needed interventions should be allocated to create more age-friendly community. On one hand, the social relevance dimension places people specific attributes into consideration; on the other hand, the habitat relevance dimension considers spatial attributes to be integrated into a comprehensive assessment. The cohesive interlinkage enables health resilience and foster place-attachment toward an ageing-friendly community. The focus, however, should be placed on the interdisciplinary complementarity in the design of intervention tools applicable to the community and habitat, based on stakeholders' need, environmental optimization.

People, place and process attributes can easily adapt to multi-criteria assessment in the optimal dwelling provision for ageing-in-place. To accommodate the ageing demographic, urban communities must examine if the dwellings could sufficiently allow for easy interaction and facilitate the livelihood of the ageing residents. Communities often need to retrofit public amenities to be accessible to the ageing residents. However, most retrofitting process need to resolve severe spatial-temporal challenges; urban infrastructure must also come to play. Mobility, security are considered important to ageing-in-place but most of the time they are beyond the range of design team, often relying on the public sector for the retrofit. To assure that the living spaces can adequately support the elderly residents, key attributes contributing to inclusive spatial experience for the ageing-in-place population. This article presents the systemic design thinking and framework within the spatial context for ageing-in-place. The research concludes that: (1) the process should attain health and wellbeing should consider the social condition; (2) design thinking in the planning phase should incorporate the place-based enhancement measures to facilitate the lifestyle of elderly residents, (3) prevailing preference in maintenance of physical space necessitates engagement from multi-stakeholders to improve the friendly ageing-in place experience. Hence the core of this study.

**KEYWORDS:** Urban ageing; Livability; Place-attachment; Spatial Context; Friendly ageing-in-place dwelling

### **3A.2 - The right to accessible cities: the vision of people with Down Syndrome in Brazil and Portugal**

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The investigation arises from the urgency of denouncing the academic silence on issues involving the right of people with disabilities (PwD) to cities (Kolotouchkina, Barroso, Sacher, 2022). It is believed that nothing can be discussed about inclusive public spaces without questioning the exclusion of people with the most diverse types of disabilities from such spaces. However, accessibility is far from being a recurring theme in public urbanization policies and in academic debate environments on the subject. In this investigation, the focus is on people with Down Syndrome (DS). When choosing to aim to discuss the desires and perceptions of people with DS about urban accessibility, an even more invisible path is traced. This happens because the few studies that discuss the inclusion of PwD in participatory decision-making processes regarding the feasibility of accessible urban spaces are focused on people with physical disabilities (Holstein; Wiesel; Legacy, 2020). Interviews with 34 people with DS, 18 in Brazil and 16 in Portugal, revealed people full of ideas and willing to interfere to break the silence about accessible cities. Refusing the label that is socially placed on them as eternal children (Faria e Casotti, , the interviewees demonstrated that they understand the centrality of urban spaces in the search for social justice. Narratives showed that people with DS require that the social model of disability be actually put into practice in decisions related to urban accessibility. In other words, it is urgent to problematize barriers – whether architectural or attitudinal – so that the centrality of accessibility difficulties is not based on the bodies and cognitions of PwD. For people with DS, the main issues concern attitudinal barriers and relate to the fact that they are seen by society as “unproductive”. This label is explored in the investigation, highlighting the role of the capitalist system that discards people who do not meet the established standard with regard to production and consumption. Therefore, it is cheaper and more comfortable to keep people with DS away from public spaces. Transmuting rights into favors, these people are increasingly on the sidelines, hidden in private spaces and far from any kind of perspective of inclusion.

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### **3A.3 - A toolkit for raising awareness and overcome physical, attitudinal and communication hindrances for persons with neuromotor diseases in community settings**

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#### Introduction

The ‘Participation Team’ develops its activity in Porto within the scope of the Cerebral Palsy Rehabilitation Center with the main objective of creating conditions for people with disabilities to live an independent, autonomous and self-determined life. One of the premises for participation is the opportunity to be involved. The lack of opportunities can be multifactorial, but barriers are factors that contribute to reduced social participation in different community services.

The aim of this work was to identify which barriers persons with neuromotor diseases face often for participation in community settings and to encourage all actors in society to become agents of inclusion in their social and

professional circles. For this, we developed a project “Eliminar Barreiras\_ Mudar Atitudes” funding by the National Institute of Rehabilitation.

#### Method

First, an online initial survey identified the diversity and which barriers occurs for participate in community settings. Items included information about gender, education level, age, self-classification of functional status (walking ability, hand manipulation, communication), and usual attendance of community services (stores, health services, restaurants, financial services) and the self-identification of barriers to participation (architectural, attitudinal, own barriers, no barriers).

Secondly, a focus group with nine adult persons with cerebral palsy discussed the relevance of the data, reflects on their own experience as customers, employees, or just citizens in the frequency of community settings, providing contributions to the production of videos and written material.

Finally, elements from “Era Uma Vez...” theater group along creative writing group of Cerebral Palsy Association of Porto (APPC) provide the scripts and filmed different typical situations, illustrating the problem faced by persons with disability and suggesting solutions on how to overcome it, especially at the attitudinal level.

#### Results

##### Survey

Participated in the survey 57 person (57.9% male) with neuromotor disorders (68.4% cerebral palsy), mean age of 35y0m±14y3m (61,4% have a secondary or higher level of education).

The least frequented services were indoor and outdoor cultural activities, and places of worship. The most frequented service was “health services. The need for assistance for participation varied between 33.4% for stores and 54.4% for health services, the service more used independently was stores and other similar commerce. Street stores and restaurants along buses were mostly identified as having architectural barriers. For attitudinal barriers most frequently identified were street stores, cultural activities, and banking or insurance services. Own barriers were frequently identified for the use of public transport.

##### Awareness material

Written, visual and auditory information discloses procedures was developed to provide relevant legislation and relevant sources of information. The written information was compiled into a practical guide for caring for and promoting the participation of persons with neuromotor diseases. The videos are available through digital platforms namely youtube.com and at APPC Facebook page.

The Guide has been downloaded 1671 times, videos have 2325 visualizations, and more than 900 paper formats were distributed. References about the project are available in Observador, Lusa, other local newspapers and Antena 1 radio.

##### Conclusion

Providing tools for the community raise their awareness about hindrances and barriers to participation of persons with neuromotor diseases built on through a co-creation process could facilitate the construction of an inclusive society.

### 3A.4 - Creative re-generation in an archaeological museum: the Museo4U project

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PRISMA is a small creative enterprise formed by specialists in communication and heritage management. It extensively, but not exclusively, uses IT to support CHI in their mission.

PRISMA's philosophy is based on the principle of “ZeroKm”, to re-contextualize objects according to their provenance. Especially for small institutions, making the best out of the (usually tiny) available budget and use slow-obsolescence technology to maximize ROI (Return-On-Investment) is of great importance.

Since CH is an important component of the urban environment, e.g. a museum in small urban centres is “the meeting point” for families and senior citizens, an inclusive approach to heritage is a key part of an inclusive public space.

Communicating the museum in an effective way is the first step to enhance visitors' experience.

A museum is not only its content, but also the stories it is able to tell: as the London Charter principles state, “Tell only the stories with a sound scientific basis and keep interpretation separate from imagination”.

This dialogue between the museum with its content and the visitor relies in large part on the way the exhibits are presented, illustrated and commented. A gap in the presentation and explanation may put the communication at risk and undermine the visitor's experience.

PRISMA has undertaken the “Museo4U” project at MuVet (Archaeological Museum of Vetulonia) in Southern Tuscany, owning a rich collection of Etruscan objects, creating solutions for visitors with special needs.

The project offers some “inclusive” multi-sensorial information points about important exhibits. They consist of a stand incorporating: a display, a 3D physical replica of the object, enhanced to improve tactile feedback, a loudspeaker and some control buttons, with commands printed in high-visibility colours and in relief in Braille. A proximity sensor detects when a person is approaching, and starts a voice message informing that there is a nearby multi-sensorial device with information. The same message appears on the screen. The stand has the right height for persons on a wheelchair, or a child, and is conceived to allow easy manipulation. All the functions are commanded by physical buttons, as virtual ones would be uncomfortable for visually impaired visitors.

The storytelling consists of videos and animations, all multimedia include Sign Language explanations, subtitles and

voice-over. Some images are stylized and the explanation are in Simple Language (Easy-to-read2017) to facilitate comprehension by visitors with cognitive deficits.

In the project we refurbished some unused equipment, replacing the electronics with an Arduino board and applying stickers on the device to renew its aspect.

The applications produced by "Museo4U" show that almost always "less is more", and simple expedients may result in a great enhancement of the museum communication.

In this case, the "ZeroKm" approach consisted in re-cycling resources and in addressing, at one time, all visitors, including those with special needs. Such targets were considered in all the phases of the project: design, creation, and testing. It also comprised inclusion guidelines for heritage managers and professionals, which may also apply to the inclusive design and planning of urban spaces.

## **Session 3B - Building the right to the city through diverse practices: which role for ruling frameworks?**

### **Coordination**

Giovanni Allegretti (CES-PHOENIX Project); Edésio Fernandes, Lorena Zarate (Global Platform for the Right to the City); Nelson Saule jr. (POLIS, Institute - Brazil)

The Right to the City (R2C) may be viewed as an "elastic" concept, under permanent construction. Born within a philosophical environment in the 1960s, it includes distinct measures and varying degrees of intensity that are of growing importance in the practice of international socio-political action. A variety of actors have embraced this "umbrella notion", interpreting it through different practices which recognise, value and deepen the role of commons as activators of networks of relations (commoning) focussed on enforcing and consolidating a large platform of individual/collective rights. Given the risk that the notion could be strongest as a socio-political banner and a call to political action rather than as an actual right in itself, this session aims to explore, in depth, the nature, possibilities and limitations of the Right to the City from a socio-legal perspective. Participants are challenged to reflect on the contribution of territorial projects (institutional, grassroots-driven or hybrid) in refining and consolidating the concept of R2C and its multiple dimensions. Organisers are particularly interested in analysing all "ruling" frameworks (of different legal and normative types), which can be associated with the conception of such projects, and can contribute to strengthening the gradual process of clarification of the legal implications of R2C.

The guiding questions of this session include:

- (1) How much the creation of spaces of civic participation between inhabitants, and their dialogue with institutional decision-making, can contribute to the strengthening and better definition of the R2C?
- (2) Who is entitled to claim the R2C?
- (3) Whose duty is it to comply with this claim, and what happens if the right is not complied with?
- (4) How do the different conceptions of the access to land and housing influence the transformation of the right to the city?
- (5) How is the relationship between urban and rural territories evolving in the incremental transformation of the approaches to R2C?
- (6) How is the R2C being transformed in the light of the phenomenon of metropolization?

### **3B.1 - Urban agriculture as activism: common practices and discourses in different contexts**

Gustavo Nagib

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This paper is based on the concept of "urban agriculture as activism" (Nagib, 2020) and will present crossing results of immersive research fields carried out between 2016 and 2022 in a large set of community gardens in three different contexts: Paris, France (n=131); São Paulo, Brazil (n=14); and Lausanne, Switzerland (n=15). Among the main methodological procedures, participant and non-participant observation, semi-structured interviews and extensive photographic production stand out.

That concept understands "activism" in a broad sense (Jasper, 2014, Souza & Rodrigues, 2004), allowing to include both the "guerrilla gardening" method (Reynolds, 2009) and a wider spectrum of citizen engagement in community gardening, which points to a series of demands and purposes, such as: (re)appropriation of public spaces; strengthening relations with local authorities; strengthening social and affective bonds between neighbours; promoting urban biodiversity through the introduction of edible plants in green public areas and creating environments for the pollinating insects; promoting the practices of agroecology and permaculture in urban areas; establishing a new contribution to the city-nature relationship.

The most significant difference between those three contexts, however, is the gardens' degree of institutionalization. In Paris and Lausanne, there are specific programs for them. While in Paris, the gardeners form associations and present the demand to the municipality to (re)occupy the public space, in Lausanne, in turn, the municipality takes

the lead in the process of creating and organizing community gardens, in which each gardener receives a small plot upon registration and payment of an annual fee. In São Paulo, by contrast, there are no public policies for community gardens and the gardeners' collectives do not create formal associations as well, which is a local characteristic of this type of activism.

Despite the different degrees of institutionalization and socioeconomic particularities in each of those three contexts, the main results indicate that the gardeners' discourses and practices are similar and they aim to materialize the series of demands presented above, in the second paragraph. This "urban agriculture as activism" thus mobilizes groups of citizens who are reconfiguring the urban territorial arrangement – including in its political dimension –, in addition to inserting the community gardens in the debate on the right to the city (Cabannes, 2017, Nagib, 2021).

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### 3B.2 - Commoning (in) the Neighbourhood, Righting the City

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The advent of the urban commons as a response to the commodification of urban life (Foster & Iaione, 2016) and its excluding impact on the urban populations has consolidated a network of social actions, namely acts of commoning (Linebaugh, 2008) that produce and transform the city (Stavrides, 2015). While most of the commons-oriented initiatives largely depend upon horizontal relationships and values shared among active citizens, municipalities and public authorities also play a catalytic role in the level of citizen engagement with the commons through offering the appropriate institutional frameworks.

One such instrument of public policy is the BIP/ZIP Program in Lisbon. Initiated in 2011 by the Department of Housing and Local Development of the Municipality of Lisbon, the program aims to promote quality of life and territorial cohesion in priority neighbourhoods by funding projects and interventions guided by partnerships among different stakeholders. Being the first participatory budget implemented at municipal level in a European capital (Falanga, 2019), BIP/ZIP has funded as of its 2021 edition 426 projects in 67 priority areas, addressing multiple urban issues and including diverse actors and activities.

In the example of BIP/ZIP, the study seeks to unravel the network of institutionally supported commoning activities that are performed in the neighbourhood scale and can in extrapolation portray the Right-to-the-City in the urban scale.

Towards this goal, the research initially conceives a framework to classify commoning practices based on their socio-spatial focus. The underlying themes that have emerged, organise commoning activities that 1. prioritise the most disadvantaged, 2. promote social development, 3. have a strong spatial character, 4. practice togetherness and solidarity, 5. enhance the value of the neighbourhood and 6. expand the boundaries.

In parallel, the case study of BIP/ZIP is examined through the successful applications that correspond to the funded projects. These are seen as the dialogue between the grassroots commoning and institutional decision-making and hence define the negotiated Right-to-the-City in the local context. A data-driven approach is employed to firstly map the projects and compose an index that includes information on their attributes such as themes, objectives and activities and secondly organise them using qualitative coding (Saldana, 2021) into the six commoning categories. The produced taxonomy contributes to the conceptualisation of the BIP/ZIP projects as urban commons, identifying patterns and drawing meaningful conclusions on the definition of the Right-to-the-city for the city of Lisbon.

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### 3B.3 - Urban Commons in Cities of Scarcity

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The discussion and practice of 'urban commons,' acquires a particular importance in light of political, social and environmental challenges from the 21st century. Much of the literature on 'urban commons' arises from communal experiences from the global south, notably from practices of Latin American social movements from Brazil (Stavrides, 2016, De Angelis, 2017; Frederici, 2018). There, 'urban commons' do not seem to be an alternative model for the co-creation of cities, as some examples from the global north (Tonkiss, 2012, Stavrides, 2021), but rather 'a matter of a people's survival and reclaiming equal access to urban space' (Stavrides, 2021). However, the conceptualization of 'urban commons,' the awareness of 'urban commonality' practices, and institutions and regulations supporting 'urban commons' are not consolidated in such cities: marked by a weak basic urban infrastructure, difficult access to fundamental urban rights, and by a citizens' skepticism in state, institutions and market actions. Such opposes with seminal governance experiences, as the 'regulations and institutions for the governance of the commons' (Labsus, 2005-2022), such as the 'Patti di Collaborazioni,' the 'Regolamento per l' Amministrazione Condivisa dei Beni Comuni,' the 'Bologna Regulation' (Arena, 2020) and the 'Co-Cities' (Foster & Iaione, 2020), in Italy. This paper focuses on the role of citizens, architects and urbanists and State in the creation of a city for the common good in Latin America, based on the case of 'Vila Itororó,' a public space in São Paulo which serves citizens with co-creation labs, spaces for communal activities and community actions as well as the the case of the 'Ocupação 9 de Julho,' a squatting settlement that is collectively managed by the social movement 'Movimento dos Sem Teto do Centro de São Paulo' (MSTC). The methodology analyses documents from 'Instituto Pedra,' responsible for the process of revitalization of Vila Itororó, as well as documents from the 'Movimento dos Sem Teto do Centro,' to find links between the instruments used by that institute and by that social movement, and the concept of the common good. The aim is to show possibilities of governing the commons in urban contexts characterized by a scarcity of resources, regulatory frameworks and infrastructures, discussing urban commons in the Global South and contextualizing them with Global North practices.

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### 3B.4 - Limits to the right to (use and modify) the city – a Brazilian case

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To discuss the limits of the right to city and the new social actors demands, we bring an autonomous experience of regeneration of a viaduct in the central region of Porto Alegre (Brazil). The city has governments that acts voraciously on public goods and make concessions of parks and green areas for commercial exploitation.

The research, carried out between 2018 and 2019, has an interdisciplinary approach (communication, sociology and urbanism) about materiality of the city as a trigger for space production. A road structure provided shelter for three types of occupation: a) philanthropic - PF das Ruas - distribution of food to the vulnerable population by 180 volunteers; b) cultural - Samba de Tuesday – night event that promoted interaction between different social sectors; c) sports – street skaters whose activity included the location in the city's sports circuit.

Skaters were the first to arrive, built small obstacles for maneuvers and made free and random use of space. The movement made that place, used as a passage and parking lot, be perceived as usable for coexistence. The toponymy was changed and Brooklyn was inscribed on the city map.

In the wake, came the PF and Samba de Tuesday, which used simple structures that were completely removed after use, had a fixed schedule and coordination. Only Samba de Terça tried to dialogue with the municipality to regularize the event and the sale of drinks. The other two groups were keen to stay away from the authorities.

The public movement and the noise of cultural events disturbed the neighborhood. Samba de Terça has

already started in an unfavorable context, but the perception was positive with journalistic articles reporting the integration of the viaduct into the samba route in the capital. With the intensification of the 2018 presidential race, Brooklyn became a place of anti-fascist resistance and political demonstrations, one being held by sambistas. Two days after the victory of Jair Bolsonaro, the negotiation for the adjustment of conduct that had been coordinated by the Public Ministry was closed and the event was suspended by decision of the organizers.

Samba tried new locations until it withered away. The skaters had some of their obstacles destroyed by an action by the municipal government, while the city hall granted part of the waterfront for the construction of a skate park for international competitions. Volunteers follow their philanthropic action and, in 2022, invited Samba members to charity musical events during the distribution of food.

The occupations worked in resonance for the regeneration of the viaduct and form an example of space production based on common use value. The city offers material structures that can both shelter invisibilities and provoke experiences that reopen the possibilities of using these spaces. In some cases, these autonomous regenerative actions put tension on urban rules, demonstrating the feasibility of reinventing uses, creating new behavioral contents and alliances that do not fit in a segregated space. Furthermore, the autonomous economic occupation of public spaces is a counterpoint to the monetization provided by the state. The acceptance was inverse to the differentiation of the typology of occupation foreseen for the area. Faced with the conflict, the municipal administration ignored the attempt to regularize it as a cultural event while applying coercion to repress irregular commerce. The case demonstrates a strategy to stop the redistribution of spaces in the city and to regulate precariousness.

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### **3B.5 - Adoption of Inclusive planning governance in religious events during pandemic – Case of Rath Yatra, Odisha**

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India has numerous cities with religious sentiments and heritage values and diverse cultures and traditions in every state. From the Char Dhams in four corners to the ancient Kashi, India, the land of rich history and spirituality, is blessed with religious beauty. One of the primary motivations of the tourist pilgrims to frequent these destinations is the immense socio-cultural value of its intangible heritage in the form of festivals and religious events. They hold significant value in the history and propagation of the culture and traditions in the pilgrim cities. From Kumbh Mela in various sacred cities to Ganesh Chaturthi in Maharashtra, multiple events of these statures were not able to occur due to the pandemic. These led to a massive outcry among religious sects and made the state consider the necessity to adapt the events with modifications suited to the contemporary scenario. This research adopts the case study references to understand innovations in multi-level governance to tackle the urban heritage challenges and experiences during the ongoing COVID Crisis. The study was undertaken in Puri, Odisha, which holds an annual Rath Yatra festival, gathering about ten lakh pilgrims each year which was inconceivable in the COVID crisis. The coastal city of Odisha, on the banks of the Bay of Bengal, Puri enjoys a unique position in the history for its enigmatic Jagannath culture, tradition, and its immense heritage. The Rath Yatra is the only festival where deities are taken out of temples to travel among the devotees, and Puri hosts the largest chariot procession in the world. It also inflows around 10-30 lakhs of the floating population during significant festivals, 'Ratha Yatra' and 'Naba Kalebara,' to witness the grandeur of Lord Jagannath and its traditions. Others Festivals of importance are Suna besha, Naba jaovan Besha, Snana Besha, and Bahuda yatra, which marks the end of Ratha Yatra, the annual Car festival. It is high time to evaluate and address them in ways that reflect the great diversity of cultural traditions, support new practices, and define management systems to preserve values within sustainable processes. This research aims to understand the influence of intangible heritage on the urban planning of the temple town in contemporary times, primarily focusing on the pandemic scenario. Rath Yatra, the nine-day festival, celebrates the annual journey of Lord Jagannath and his siblings to the Gundicha Temple, around 2.5 km away. The festival was conducted during the pandemic through modified interventions that facilitated less footfall but maximized engagement and participation. Based on Primary and secondary data, this study delves into the local governmental policies undertaken in Puri to execute the annual car festival and identifies future scope in urban conservation in the face of disaster risks and pandemics.

The research identified that one of the crucial stakeholders in the pilgrim cities, Priests, was involved in the festival's entire functioning with the state, district, and municipal administrations. They conducted the rituals regarding the Rath Yatra within the temple premises to limit the community mass. The Municipal authorities strictly enforced the curfew and transportation guidelines under Disaster Management Act, 2005, and COVID-19 Regulations 2020. Various challenges and opportunities have also been identified through comparison with other case studies of different contexts and other festivals across India. The research

concludes by recognizing that the communities' synergy and participation in living heritage should be crucial for sustainable resilience, especially community involvement and awareness generation, particularly among the vulnerable segments of the population.

### **3B.6 - Participation and Institutionalization: perspectives in urban policies**

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The democratic crisis expressed by high electoral abstention, distrust in political system and rise of authoritarianism signals the importance of bringing citizens back to the political debate (Fung, 2015).

Several authors argue that the renovation of democracy will take place around the political debate about cities, while undergoing intense transformations (Falanga, 2020). It is urgent to rethink participation in urban policies and the evolution of planning instruments and methodologies, helping to confront the decision making with the reality of socio-economic inequalities and environmental imbalances that accompany urban development.

Although the urban political discourse contemplates participation, the existing instruments prove to be ineffective and expose known problems. Literature indicates that the effectiveness of participation arises from the interactive dynamics between institutional design - referring to norms and procedures that determine in what, who, how and when one participates, to contextual elements - which include social capital, political will, management implementation capacity and governance issues (Avritzer, 2008; Smith, 2009).

The challenges imposed on institutional arrangements relate the need to articulate social and institutional innovation (Avritzer & De Sousa Santos, 2002) for the construction of a new inclusive urban agenda, which addresses territorial problems from a proximity scale, able to transform relations between society and government, and transfer decision-making to citizens in the co-construction of solutions that guarantee the right to the city.

Portugal has been experiencing an explosion of initiatives with different institutional designs, that promote civic participation in direct transformative processes, such as the BIPZIP in Lisbon, the 'Bairros Saudáveis' on a national scale and participatory budgeting; initiatives that can promote public participation in decision-making processes in spatial planning instruments and, recently, the Lisbon Citizens' Council 'by lot'.

Despite this dynamic context, there is no evidence of a coherent system of participation, nor of how and if these practices dialogue with each other, and what is the real impact on urban and territorial development (Falanga & Ferrão, 2021).

If there are fragile systems evaluating the effectiveness and societal impacts of these initiatives, the absence of institutionalized arenas make the sustainability of these practices compromised and vulnerable to political will.

This is an early-stage PhD research that seeks to contribute through a critical reflection on the need for approaches that overcome current barriers to participation in the production of cities. The process is of an applied nature, with a qualitative and practice-oriented approach. The objective is exploratory.

The hypothesis that arises is that democratic innovations can happen in articulation between practices that allow the emergence of social innovation and the institutionalization of participation in decision-making processes.

It is proposed to develop a theoretical framework contemplating the dimensions of analysis to which planning projects and participation arrangements may be subject, which will be comparatively analysed and characterized in the light of the theoretical framework. Then, through exploratory research, we will reflect on new arguments that can support improvements in institutional designs, arrangements and methodologies used in participatory processes related to cities and formulate hypotheses for the institutionalization of these practices in urban policies.

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### **3B.7 - Analyzing Inclusive Citizenship in Cities and Human Settlements through a Right to the City perspective**

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This thematic paper, elaborated in the scope of the Global Platform for the Right to the City (GPR2C) aims to address the main aspects of inclusive citizenship in cities and human settlements, as well as its main contributions to the promotion of the right to the city. The paper discusses different interpretations of inclusive citizenship – which is a dynamic and contested concept – hoping to provide a better understanding its complexity, implications, and



relevance in cities and human settlements.

Firstly, it is relevant to contextualize the concept of “citizenship”. The more disseminated notion of citizenship is a state-centric one, related to two main approaches: citizen as a (civil, political, and cultural) rights holder and citizen as having collective responsibilities and duties (LISTER, 2003). The alternative perspective, in its turn, acknowledges that there are different ways to be a citizen, and that citizenship is a condition that goes beyond the civic and political practices (ALVAREZ, 2017, p.02), aiming at turning citizenship an effective inclusive practice.

One of the components that can be considered in reconfiguring the meaning of citizenship is “agency”. It is related to the possibility of individuals to be purposeful and creative in the political arena, being effectively agents of choice (LISTER, 2003). This concept, which is frequently mobilized by black feminists, indigenous peoples, and youth movements, emphasizes the struggle for recognizing the agency of marginalized groups, to be recognized as subjects, not objects, of policies and decision making. Thus, various authors highlight that this concept does not refer to the capacity to act in searching for individual benefits, but it has a collective empowering sense. In that way, promoting human agency initiatives can be achieved by:

Acknowledging the right of vulnerable groups to choose and stipulate their own preferences and needs.

Valuing and considering the contributions of all groups to the collective decision-making.

Creating safe spaces of active listening to the vulnerable groups demanding and giving suggestions.

Promoting communication strategies to empower and amplify the voice of vulnerable groups in the community.

Advocating for vulnerable groups representatives' participation in spaces of power and public events.

In conclusion, citizenship should be pursued by a collective perspective to be inclusive. It is not the grant of an individual citizen right, but a collective one, also proposed and established by the collectivity. In that way, all groups that reside, circulate and work in the city, which are part of this urban community, should be able to have their rights fully established, acknowledged as subjects of choice and needs, and empowered to interfere in the production and transformation of their community.

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### **3B.8 - Beyond urban-rural linkages, the defense of territories and cities for life**

Rubén Paredes Cortez, Vanessa Pinto Valencia, Diana Bell Sancho, Gabriela Vacacela Marquez, Lucía Ruiz Pozo. Contrato Social por la Vivienda, Ecuador

This panel presents the contents of a thematic research paper that addresses one of the components of the Right to the City: “cities and human settlements with inclusive urban-rural linkages”. For its elaboration, a process of research, critical analysis and collective discussion was carried out between the group of authors of the Contrato Social por la Vivienda Ecuador and the members of the Global Platform for the Right to the City (GP4RC) working group on “cities and human settlements with inclusive urban-rural linkages”: André Biazoti (Instituto Polis) Emily Mattheisen (FIAN), Judith Hitchman and Isa Álvarez (URGENCI), Sri Husnaini Sofjan (Huairou Commission). The methodology applied combined an examination of critical development theory and case studies, and included a participatory component where input was received from grassroots activists and scholars via an international webinar organized by GP4RC. The text is structured in four sections: the first section makes a critical reading of the current context denouncing how the colonialist, capitalist, anthropocentric and patriarchal model that has been imposed globally annihilates the possibilities of life on the planet and generates inequities, environmental deterioration, violence and uncertainty. At the same time, we analyze the response to this reality from the perspective of global development agendas promoted by international organizations, particularly examining how the 2030 Sustainable Development Goals, the Paris Agreement and the New Urban Agenda address the axis of urban-rural linkages. In the second section, a brief review of the Right to the City framework is presented, identifying links with other conceptual approaches and social practices framed in the vindication of Human Rights and the Rights of Nature. It highlights the need for a new approach for considering urban-rural linkages through the articulation of the Right to the City, Human Rights and the Rights of Nature frameworks. The third section presents several case studies that put into practice transformative actions at different scales and with diverse linkages of actors, demonstrating how other ways of acting and relating to territories and cities are possible, recovering them as places for the regeneration of life. These practices revolve around four axes proposed as central to the themes addressed in the document: 1. responsible production and consumption 2. The solidarity economy, 3. food sovereignty, 4. the defense and care of territories in the context of movements for environmental justice. To conclude, a series of public policy recommendations are proposed to strengthen alternative actions in the aforementioned lines of focus, as well as general recommendations to transform how local and national governments approach land use planning and territorial management.

### **3B.9 - The power of dust: The role of decaying places and their iconization for the future of urban life form - Case study of Bangkok**

Andrea Taglioni  
Chulalongkorn University, Thailand

#### Introduction

The last three decades have oriented cities towards privatizing urban development for the sake of progress and led to prolific and uncontrolled construction of malls, luxury hotels, and condominiums across the world. In Bangkok, citizens lose their access to the land, occupied by amenities they cannot afford to use anymore (Moore, 2019). Such renewal deeply affects people also because it dispossesses them of a sense of place and of identity, keys to 'the right to the city' (Lefebvre, 1968). The direct consequences of such development strategy contributed to repetitive financial crisis and the creation of a new paradox in developing cities: contemporary ruins. Contemporary ruins are these recent privately led projects that were meant to become the icons of urban progress but ended up losing their primary function. Assumed to be "urban failures" and abandoned (Cairns et. al, 2014), they have the potential to address social justice again, also because they can be claimed by people for public alternative purposes. Previous infamous examples of these structures in Caracas (Torre de David), in Bera (Grand Hotel) or in Johannesburg (Ponte City) have highlighted their role in times of housing crisis. Bangkok's ruins are being claimed by locals, tourists, artists and organizations as needed social cultural spaces and new icons.

#### Methodology/Data collection

The study ought to understand how some contemporary ruins can address people's right for democratic use of urban features (Harvey, 2008). In Bangkok, abandoned places are selected from field trips based on their strategic location in the city center. The diversity of their reuses is identified through onsite observations, attendance to onsite initiatives as well as media-based review study. Perception of their utility and their relevance for the future of Bangkokian is examined both from the point of view of locals living in the neighboring areas through semi- structured interviews and from interviews of key actors (tourists, artists, organizers, owners) directly involved with the buildings.

#### Discussion/Results/Conclusion

From social housing, public cultural spaces, the construction of a popular identity (Pohl, 2021) to political stand (Moreno, 2017), contemporary ruins have both material and immaterial roles to play in the making of modern cities. Though it was found that locals do not always perceive them as utilitarian features of urbanism, partly because of their relation to the private sectors, their restricted access and ruined state, there is a crying need for space and a compelling effort of adaptability by other people to claim ownership over these places (Boonchaiyapruerk, 2013). Cases such as New World Mall and Sathon Unique in Bangkok brought necessary perspective over the role of abandoned icons to fight for the right of the people to be part of modern development.

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## **Session 3C - Co-governance for the co-creation of nature-based solutions**

### **Coordination**

Isabel Ferreira, Beatriz Caitana (Centre for Social Studies, Portugal), Svetoslav Novkov, (Municipality of Sofia, Bulgaria)

Co-creating nature-based solutions (NBS) on a scale appropriate to urban regeneration requires a particular focus on the opportunities for citizens to participate at all stages of co-creation, from co-diagnostic to co-monitoring. Furthermore, the collaborative approach between a multiplicity of actors playing different roles is at the heart of increasing the impact of social cohesion for the communities involved. From the perspective of municipal governance, enabling this environment of co-creation requires innovations in urban planning

practices which deepen the role of citizens in urban governance processes and increase understanding of the socio-political and socio-economic atmosphere. However, citizen participation in urban locations is quite complex, with several overlapping layers. The heterogeneity of the social, cultural and organizational dimensions of participatory culture challenge the materialisation of new interactions among municipal decision-makers, citizens, civil society, public and private stakeholders, NGOs, informal organizations and community initiatives. Moreover, consolidation of participation channels implies dealing with the complexity of decision-making processes, involving aspects that can hinder the advancement of innovation in co-governance, such as political, technical and administrative issues that are complex and variable. The extent to which structures and initiatives of participation actually contribute to the needs and ambitions of citizen well-being, influence political processes and transform urban policies is at the center of assessing the meaning and success of citizen engagement in governance processes. It also means that opportunities for citizens to develop the capacity to engage in collective initiatives must be taken into consideration. This includes expanding active citizenship, social inclusion and integration and opening up possibilities for the empowerment of citizens in accordance with their demo-diversity, providing opportunities for debating, influencing, negotiating and deliberating between different options, according to different interests, agendas and needs. Finally, it is also important to measure the contribution made by encouraging the building of collective imaginaries and wills relative to the integration of nature into the daily lives of cities, as well as providing opportunities to contribute towards improving the uses of the territory, the development of vulnerable areas, protection and valuing of ecological systems, environmental justice, etc. This session is dedicated to the challenges, opportunities and good practices involved in urban regeneration, focusing on the co-creation of NBS and initiatives related to biodiversity and ecosystem protection. Proposals that come from different governance realities and participatory cultures are expected to identify enabling environments and good practices for NBS co-creation, including limitations in governance in terms of NBS processes and products, different types of governance collaboration at different stages of the progress of NBS and guidelines for public policies in the context of urban regeneration.

### **3C.1 - Why a helix-based approach is necessary to govern Green Infrastructure: learning from the Interreg Alpine Space LUIGI project**

Michele Coletti, Frédéric Bally  
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Green Infrastructure (GI) are strategically planned networks of natural and semi-natural areas such as green roofs, hedgerows, forests and orchard meadows. GI provide essential ecosystem services (ESS) such as water and air, and they are directly and indirectly relevant for people and business. However, GI and ESS are under threat by economic activities that exploited or did not respect the natural environment and public policies that did not protect them.

We know from the “wedding cake” model proposed by the Stockholm Resilience Center that the Economy serves the Society and that the Society cannot thrive if the biosphere is not healthy (European Union, 2020). However, the current economic paradigm tends to affect negatively GI and ESS because is based on nature exploitation (Kronenberg et al., 2021). Nature conservation is often perceived to be an obstacle to the economic development. In order to measure the value of ecosystem services (Stange et al., 2022) and to start a virtuous cycle including a broad range of technological and social innovations (Kuhlmann and Rip, 2018), the Triple Helix (TH) framework was proposed. Composed of three spheres: Academia, Business and Government, it allows to explain how innovative ecosystems were developed and provide policymakers engaged in regional growth with relevant guidelines (Etzkowitz and Gulbrandsen, 1999). However, according to some authors, society still lacks in this framework (Kuhlmann and Rip, 2018).

Consequently, several authors proposed a quadruple helix (QH) theory, with the fourth helix associated with civil society (Roman et al., 2020). The Fourth Helix refers to private and public organizations, professional or amateur users, and ordinary citizens (Del Vecchio et al., 2017). This ‘fourth helix’ is made of a fragmented and heterogeneous group of stakeholders that cannot be engaged in participatory processes through uniform interactions (Roman et al., 2020). A variety of processes at various levels have to be envisaged (Trivellato et al., 2017), and we assume that the environment and more specifically GI and ESS will bear the consequences (positive and negative) of the actions carried out by the QH players.

Hence, the focus of this paper is on what should be the ideal governance for Green Infrastructure when seen with the theoretical lenses of the Quadruple Helix. We based our study on a systematic review of policy recommendations of a number of official reports issued by public organizations and project deliverables since 2010, from the following EU funded programs: Interreg, Horizon etc (see list in the Annex), written by experts. Our analysis shows that most of recommendations are addressed to government and society: thus suggesting that social innovation, i.e learning to solve issues through participation (Edwards-Schachter and Wallace, 2017, p. 73), is a key lever for the development and effective management of GI and ESS, and revealing that way beyond government, a wide range of actors such as citizens are needed to tackle Grand Societal Challenges at local, national or transnational levels.

### **3C.2 - Governance Learning by Resisting, Co-opting and Expanding through Collective Actions for Climate Adaptation in Cities**

Mahir Yazar

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Governance learning is an emerging field in the policy literature (Dunlop & Radelli, 2013; Howlett, 2014). Although new empirical and theoretical insights are growing in governance learning, less focus is given to what extent these knowledge are informed by practice for climate adaptation (Gerlak et al., 2020). Some strong institutional settings have the authority to push forward top-down climate change integration through hard regulations (Schoenefeld & Jordan, 2020). For instance, nature-based solutions as a climate adaptation concept have developed alongside the research and innovation agenda within the European Commission and the European Environment Agency. Instead, other institutions or governance settings may depend on soft governance capacities with limited substantive authority but high interests in integrating climate change concerns throughout other agencies or departments, resulting in ineffective policy accumulation (Biesbroek, 2021). Yet, no attention has been given to how collective actions, or “practice from the bottom-up,” inform governance structure to learn what kinds of effective policies and actions are needed to be implemented to address complex and place-dependent climate adaptations in urban settings. Thus, this paper suggests that collective actions through citizen and activist engagements are essential sources for formal governance structures to learn how to implement robust climate actions in urban contexts.

Drawing on the insights of two cities experiencing climate impacts differently, Bergen (Norway) and Istanbul (Turkey), this study assesses how collective actions influence local governments to learn from these actions to implement just climate actions in their localities. Two empirical cases illustrate that learning from collective actions takes different forms and directions by the formal governance structures. Using environmental justice (specifically recognition and procedural) and policy learning literature, this study identifies a three-part governance learning typology that emerged through collective actions that may trigger governance structures for policy integration or change: 1) Learning by resisting (formal governance structures neither recognize nor include vulnerable groups’ demands in the decision-making outcomes, but come up with alternative plans influenced by collective actions), 2) Learning by co-opting (formal governance structures recognize vulnerable communities’ needs but do not include their demands in decision-making outcomes), 3) Learning by expanding (formal governance structures both recognize and include vulnerable communities’ demands in decision-making processes and outcomes).

There is still progress for nature-based solutions to become mainstream in planning and governing practices. From exclusively being a concept of climate change adaptation and biodiversity conservation, nature-based solutions have evolved to become a resource for environmental management. Enhancing governance learning for just climate adaptation in cities (e.g., nature-based solutions) requires collectively generated knowledge. The two case studies in this study show that governance learning takes different directions and forms depending on the institutional contexts, the willingness of decision-makers, and socio-political environments. The governance learning typologies coupled with climate justice concerns in this paper could be beneficial for other case studies, especially to determine how climate adaptation actions foster or hinder climate injustices while urban practitioners introduce methods to develop nature-based solutions in cities.

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### **3C.3 - Adaptive governance for sustainable metropolitan green infrastructure: a case study in Barcelona Metropolitan Area**

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Introduction

In the context of climate change, urban agglomerations must establish strategies that increase the resilience of local communities. There is a growing interest in urban planning in integrating Green Infrastructure on different scales as part of the solutions in this perspective. However, several barriers are identified, such as the need for new models of governance (Marques et al., 2022).

Innovative planning policies have relied on adaptive governance models to address this gap, which refers to flexible, collaborative, and multi-level decision-making processes aiming to manage territories in an adaptable approach (Schultz et al., 2015). In Barcelona Metropolitan Area (AMB), the case of PEPNat illustrates an adaptive governance model for green infrastructure on the metropolitan scale. Covering the territory of the Collserola Natural Park and transitional zones in the surrounding area, the plan is a hybrid instrument that combines environmental and urban aspects considering the dynamism of metropolitan open spaces (Vidal-Casanovas et al., 2020).

#### Methodology

The analysis was based on four dimensions: (1) Governance, (2) Environmental preservation, (3) Built heritage, and (4) Economic activities. The methodology involves the analysis of three main data sources: (1) Planning documents, (2) Papers and reports, and (3) Interview with technician.

#### Results and discussion

- Adaptive governance, participation, and the use of technology for monitoring

The plan's construction was participatory. Public consultations in several formats (e.g. online, in person, and at information points in the park) were performed, involving different actors and planning scales. Aiming to protect ecological functions in an area in constant transformation, the instrument proposes to commit to flexibility and adaptability, relying on the cooperation of multiple actors. This proposal is accompanied by monitoring based on Geographic Information Systems (GIS), which allows constant assessment of the Park.

- Environmental preservation and sustainable uses

The park has different zones that vary with regard to public access according to conservation needs. Among the most accessible zones are areas for public use, and leisure inside and outside the park, to improve the urban-environmental conditions of transition areas and guarantee better accessibility. By associating sustainable uses with economic activities, forestry, agriculture, and livestock are allowed.

- Activation of the built heritage with creative and sustainable activities

New constructions are prohibited. The strategy is to maintain and improve the existing built heritage and public facilities. The idea is to attract new uses for existing buildings, and promote public and private collaborations to foster green economy, local consumption, and environmental education.

#### Conclusions

The innovation of the PEPNat relies on the search for combining environmental protection, activation of new dynamics, and sustainable economic activities within an adaptive governance model. The plan presents a flexible strategy to improve ecological and urban connections between the city and the park by creating transition zones with leisure spaces and incorporating existing buildings. However, its implementation is still limited, especially regarding the suggested transition zones outside the park's boundaries, which depend on the surrounding municipalities' enforcement.

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### **3C.4 - Design and initiation of the first nature-based urban climate adaptation programme in Malaysia: challenges in governance and stakeholder engagement**

Sofia R.M.B. Castelo

Universidade de Lisboa, Portugal & Think City, Malaysia

The paper discusses challenges identified in the design and initiation of the Nature-based climate adaptation programme for the urban areas of Penang Island, the first urban climate adaptation programme to have been developed for Malaysia. Initiated in 2019, the programme's development involved extensive stakeholder and community engagements and complex governance challenges. Designed by the researcher, the programme won the Climathon Global Cities Award in 2020 and was endorsed to receive US\$ 10 million in funding for execution from the Adaptation Fund in October 2021.

The main challenges identified were the lack of awareness by government officials regarding the country's vulnerability to climate change and on the potential of nature-based solutions to address climate-related challenges. Stakeholder engagement posed some challenges as well but also presented unique opportunities for learning. The lack of awareness regarding the country's exposure to climate impacts was shown at multiple levels, including by some of the country's highest officials - in April 2021, the minister of Environment and Water of Malaysia publicly stated the country was not vulnerable to climate change. As the country was not viewed as vulnerable, there was no understanding of the importance of introducing adaptation projects. The team also faced challenges related with how the

status of the country in the international arena was perceived internally. The application for international funding for programme execution was disincentivised by federal authorities due to their reticence in accepting the status of Malaysia as a developing nation, due to its upper middle-income country status. Governance challenges were the most serious threat to the project and almost lead to its abandonment, mostly due to conflicting interests between federal and state level authorities, which, on occasion, were politically motivated.

The lack of understanding of the potential of nature-based solutions (NBS) to address climate change also posed a challenge. Extensive stakeholder engagements and presentations of the programme in national events were able to overcome this challenge by presenting evidence on the subject, not only in terms of adaptation, but also in terms of mitigation, biodiversity, as well as by listing the multiple co-benefits of urban green spaces. Multiple stakeholder engagements also revealed insightful differences between focus groups and workshops with experts and the engagements with vulnerable communities. Vulnerable communities prioritised heat as the main climate-related concern, while experts prioritised floods and stated heat was not a concern. This was attributed to the fact that experts, as part of the middle class, inhabit continuously air-conditioned spaces. These engagements made clear that, to understand impacts already taking place, it is crucial to engage with the most vulnerable communities or some effects may go unnoticed.

In a fast-changing scenario, the floods of December 2021 were attributed to climate change and national awareness rose almost overnight. The researcher was part of discussions for the initiation of the development of the National Adaptation Plan of Malaysia by the Ministry of Environment and Water and brings a unique insight into the climate change debate in Malaysia.

### **3C.5 - São Paulo's experience in Open Government for a co-built world**

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A participatory municipal public management is essential to build a sustainable and efficient city; and only with the inclusion of an active Civil Society with a place to act is it possible for the public administration to understand the municipal realities and solve the challenges presented on a daily basis. In order to achieve such objective, the São Paulo City Hall, in accordance with the membership requirements of the Open Government Partnership, periodically prepares the "Open Government Action Plans", commitments to open government that stimulate a more transparent, integral, responsive and participative management. Through such Plans, Public Power and Civil Society are able to come together in a structured environment conducive to dialogue. In this environment, both spheres are enabled to co-create, co-implement and co-evaluate a series of jointly established commitments that ultimately aim to ensure greater openness of government, broaden avenues for participation and improve public governance in general. Acting as a space for the participatory assessment and transformation of reality, the strategy adopted in such Plans could serve as a reference and inspiration for managers of cities that are part of Urbinat, and contribute to the formulation, implementation and evaluation of Nature Based Solutions.

The Action Plans are planned to last three years and will be developed by a collegiate body made up of eight members of the public authorities - from various areas - and eight members of civil society - from various sectors of society such as academia, social movements and collectives - which make up the Multi-Stakeholder Forum. The Plans are structured in three major stages, the first called co-creation, in which this multiple group establishes relevant thematic axes to work on and, based on them, defines commitments between the government and society; once these commitments are established, they will be, in a second stage, co-implementation and finally, in the third stage, co-evaluation by this collegiate. At each Plan, the public authority and civil society actors involved are altered, as well as the thematic axes and commitments, not following a rigid methodology, but guidelines that may be customized in specific solutions for the different contexts and according to the composition of the Forum, allowing a huge thematic scope, a myriad of experiences and an adaptability to the dynamism of the contemporary world. The project is currently in its 3rd Action Plan, in the co-implementation stage, in which the Forum's Working Groups meet monthly to forward strategies and report progress regarding the pre-established commitments. In the co-creation stage alone, we had 8 moments of elaboration, including a mapping of priority themes for civil society, public consultations, workshops with specialists in the thematic axes - to think strategies for the topics considered priority - and the joint drawing up of the Commitments.

Seeking to collaborate with the expansion of the international construction of more transparent, inclusive and plural cities and a participatory civil society in urban regeneration, we believe in the possibility of dialogue and the transferability of strategies and methods used in the Open Government Action Plans to projects developed in other locations.

## Session 3D - Cultural mapping in the city's co-creation processes toward sustainability

### Coordination

Nancy Duxbury, Nathalie Nunes (CES, Portugal); Laëtitia Boon (City of Brussels, Belgium); Milena Tasheva-Petrova (UACEG, Bulgaria)

### Abstract

Cultural mapping is an emerging field of interdisciplinary research, as a mode of inquiry and a methodological tool in urban planning, cultural sustainability, and community development. It is strategically used by administrations of municipalities, community/civic organizations, and informal initiatives to bring a diverse range of stakeholders into conversation about the cultural dimensions and potentials of a place. Cultural mapping is allied with other mapping fields (i.e. deep mapping, community mapping, participatory asset mapping, counter-mapping, qualitative GIS, and emotional mapping), with which it shares a focus on bottom-up processes for making visible the knowledge of citizens/residents as well as narratives, identities, histories, and local practices that bring meanings to places. It has proven very good at detailing tangible assets that can be counted, such as physical spaces, cultural organizations, public art, and other material resources, with a growing interest in mapping intangible dimensions of culture. These intangible dimensions are of particular relevance in contemporary research, in artistic and architectural works, and in urban and community engagement and planning practices.

This session is dedicated to debating the potential for culturally informed change through cultural mapping in relation to urban regeneration processes with nature-based solutions, as well as the challenges and opportunities of this interdisciplinary research and methodological tool in terms of collaborations across research disciplines and transdisciplinary practices. Proposals are expected to identify case studies, experiences and guiding principles that contribute to our knowledge about how cultural mapping can be interrelated with activities and thinking about sustainability in theory as well as through a diversity of practices. For example, topics may address, but are not limited to: how understanding the local cultural ecosystem informs and influences the community's cohesion, vitality and well-being; how cultural components are produced and reproduced in the context of the territory's urban regeneration; and how cultural mapping functions as a communication, conversational and knowledge production platform. Target audiences: Researchers, civic actors/NGOs, urban planners/practitioners, municipal officers/staff, and representatives of other local/regional authorities.

### 3D.1 - Cultural heritage mapping through community participation in Vale de Massarelos (Porto)

Laís Pettinati (0000-0003-0272-104X)<sup>1,2</sup>, Teresa Cunha Ferreira (0000-0003-4325-4775)<sup>2,1</sup>, Teresa Marques (0000-0003-2936-5268)<sup>3</sup>, Natália Azevedo (0000-0002-6387-7868)<sup>4</sup>, Julia Rey-Pérez (0000-0002-5703-7205)<sup>5</sup>

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Community participation and transdisciplinary co-creation strategies are among the best practices for contemporary integrated and inclusive urban management. This paper intends to focus on cultural heritage mapping through community participation, namely by providing i) methodology background on selected participation techniques; ii) critical analysis of two reference case-studies in Ballarat (Australia) and Cuenca (Ecuador); iii) cultural heritage mapping in a pilot urban area in the city of Porto (Portugal) – Vale de Massarelos, supported on participation experiences with communities.

International reference case-studies are selected because of its innovative and integrated approach on assessing cultural significance of urban areas, both consisting in pilot cities for the implementation of the Historic Urban Landscape Recommendation (UNESCO, 2011). Hence, the "Imagine Project" in Ballarat focused on conserving local heritage through proactive community-based approaches with a focus on the active involvement of different stakeholder groups. As regards to the project "Reassessment of the Cultural and Natural Heritage of the city of Cuenca from the strategies of sustainable development supported in the Recommendation on the Historic Urban Landscape (PUH\_C)", the key focus was citizen participation sustained on a broad concept of heritage and interdisciplinary research.

Moreover, learning from reference cases, this study will provide deeper insight on the implementation of different participation strategies for the urban management of Massarelos Valley, directed to assess the communities' perception on the site's cultural significance. Cultural heritage mapping will be spatialized through a georeferenced GIS software, for the different planning stages of implementation i) characterization (attributes and values), ii) diagnosis (risks and problems) and iii) proposal (tangible and intangible actions).

The study is sustained on different participation techniques for the involvement of stakeholders in a co-creation regime for the identification of values and attributes, vulnerabilities and proposals for sustainable urban management.

Observation (accompanied by the recording of notes in the field diary, photos and videos), aimed at a first contact for the understanding of the territory. Concomitant to the field observation, analytic studies were carried out on the official websites to identify establishments, possible places and interested parties as having a relationship with the Massarelos Valley. Thus, the interested parties were identified and mapped.

In a second and analytical phase, the following techniques were applied: 1) observation, an analysis grid was developed for the field diary with macro themes (Physical Space, Natural Space, Built, Immaterial, People, Signage, Visual relationships, Access, Transport) based on the dimensions addressed in the definition of Historic Urban Landscape - articles 8 and 9 (UNESCO, 2011); 2) semi-structured individual interviews with key people; 3) paper surveys (field visits) and online (sent by e-mail); 4) Lousa Project, with the elderly; 5) Drawing the place where they live and what they like most, with the children; 6) Exhibition of children's drawings and old photos of Massarelos at the Massarelos Residents' Association; 7) Sharing of memories by the elderly; 8) Perception Map creation workshop. Finally, comparative discussion will allow us to point out strengths and vulnerabilities in the development stages, as well as pointing out guidelines for improving cultural heritage mapping for urban management through community participation.

### **3D.2 - Logar do Falcão transformation: models for intergenerational verification and appropriation**

Vitório Leite<sup>1</sup>, Inês Reis<sup>1</sup>, Luís Miguel Correia (0000-0002-3690-930X)<sup>1</sup>, Gonçalo Canto Moniz (0000-0002-1890-1953)<sup>2</sup>

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We are living under a critical and symbolical moment, stressed by the COVID19 pandemic and the increasingly evident climatic changes. On architectural and urban planning research, this scenario seems to be creating a productive generation of thoughts, theories and practices on how we can contribute as a discipline and how we should act as professionals. The concept of participation on urban design processes with an emphasis on more precise, evolutive and adequate design mechanisms are at the core of this phenomenon as a transformative process and practice (Blundell Jones, Petrescu and Till, 2013, p.xvi)

This paper aims to frame and analyse the importance of several design tools to integrate the collective projections of the community and enhance their appropriation of a specific place of the healthy corridor that URBiNAT H2020 project is developing in the city of Porto (Portugal): a vacant ruin of an old farm located on the parish of Campanhã - Logar do Falcão.

The urban project that will change this place is still in progress, but it is already possible to identify its importance to the physical and social transformation on the intervention area. This research will analyse several moments of interaction with citizens that took place in the last three years in three stages of the co-creation process: co-diagnostic with a walkthrough with citizens (children and adults) and individual interviews with adults; co-design with children through a physical model of the study area and a webinar with adults to draw solutions on Miro software; co-implementation with a physical model, which represents a preview of the transformation, allowing citizens of all ages to think and prepare its future use as a public and community space, within an experiment of a solidarity market that was proposed in a previous stage.

During these moments of field (and digital) work URBiNAT's cultural mapping NBS was used as a methodology to plan the described techniques to collect, record, analyse synthetise and test all the information that was gathered or created. This methodology allowed the urban plan team to map facilities, organizations, stories, heritage values and aspirations, which helped to understand the cultural resources, networks, links and patterns of usage that were then integrated as reasons and inspirations for the plan. (Duxbury & Nunes, 2021). Many of the approaches and tools used are, after all, existing 'regular' architecture co-working means. For each case, they are, however, rethought to become more expressive and clearer, flexible, and dynamic, to ease the flow of discussion. Depending on the circumstance in which they're applied, different outcomes and (counter)reactions by the participants arise. Most of the activities include pre-sessions with citizens for their reassessment. Through an active participation, this process puts to test innovative methodologies, by getting constant and direct feedback from their users.

The participatory design process was based on this cultural mapping framework, where citizens identified the needs and proposed ideas to address cultural and social gaps. Then, step by step, the proposal was tested by the planners to transform the physical space, as well as the implementation of a solidarity market with local producers. In permanent dialogue, the participatory activities transform the cultural values and perspectives of both citizens and place.

This way, the architectural design process through a cultural mapping approach is relevant for the intergenerational verification and appropriation of the new Logar do Falcão and the solidarity market initiative.

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Cultural mapping protocol and general guidelines for implementing participatory activities: annex 1 of URBiNAT's deliverable D3.1



### **3D.3 - Community-driven tools to communicate NBS and promote youth engagement: the case of the Campanh'UP Platform in Porto**

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What are the opportunities that emerge through the use of community-driven communication tools for the implementation of NBS? With the aim of activating communication ecosystems in communitarian spaces, educommunication (Soares, 2000) combines creative space and civic participation with learning by doing. Its unlikely association with Nature-based Solutions (NBS) has led to several opportunities in the case of Porto. NBS are defined by the European Commission (2019) as solutions inspired by nature with which to face social, economic and ecological challenges. One of the main functional categories of Ecosystem Services is in fact culture, with nature providing opportunities for reflection, cognitive development and aesthetic experience (Crocì and Lucchitta, 2022). The IUCN refers to the inclusion of traditional knowledge as part of the NBS implementation process. In turn, educommunication includes in its attributes the mapping, integration and recognition of diverse knowledge. In this communication it is therefore argued that the implementation of NBS associated with educational processes based on community-driven communication increases the impacts of the solutions and diversifies their benefits. On one hand, educommunication contributes to local development of a parish by strengthening the active engagement of residents. On the other hand, the values attached to the territory are amplified by changing the criteria by which the community is recognized - more by their potentialities than by the problems that affect them. The co-design process involved in the Campanh'UP Platform in the city of Porto has been underway since 2021, combined with practical activities of educommunication. The proposal for this project emerged within the co-creation process of the Healthy Corridor as part of URBiNAT H2020 project. It was then appropriated by a set of local associations and residents interested in strengthening the project, who organized an Executive Committee to be responsible for its management.

Co-creation of the Platform came about by means of a bottom up mechanism and seeks to respond to a community need to create new narratives about the parish of Campanhã. From an educommunicative perspective, other indicators also help to define the community, enabling their transformative potential and mutual solidarity to become visible.

The aim of this communication is to present progress, from the ideation of the platform to the co-implementation stage. This pathway demonstrates that there have been numerous advances, but also indirect setbacks that influence the actual level of maturity of this solution. These include the challenges of co-governance and co-creation that produced effects on several local solutions, including the Platform. An additional main topic of this communication is the opportunity for youth empowerment, enabling debate and promotion of NBS in public forums. The socio-pedagogical outlines of Campanh'UP contribute to citizen engagement, to sustainable alternatives for the implementation of the Healthy Corridor, and to the intergenerational and intercultural dimensions that enable the stimulation of co-production between different social groups.

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# 4 Room 151

## **ENGAGING CITIZENS FOR HEALTHY CITIES**

Inclusive planning process: linking informal to formal
Citizen engagement and the co-creation of nature-based solutions for sustainable urban development: theories and practices for disruptive approaches
Active involvement of children and youth in the co-creation and decision-making processes involved in nature-based solutions for the advancement of sustainable urban development
Nature-based solutions and their effect on health, wellbeing and behavior

## Session 4A - Inclusive planning process: linking informal to formal

### Coordination

Milena Tasheva-Petrova, Elena Dimitrova (UACEG, Bulgaria)

Inclusive planning approaches aim at supporting active citizenship by generating capacity for collective action and taking responsibility for the future. They provide the ground for a continuous open dialogue of authorities, planning professionals and citizens – all of them entering the process with their diverse culture, knowledge, and expectations. Building mutual trust and encouraging the creative potential of all the participants are two key success factors for inclusive planning. The planning and governance of the urban environment are however complex processes, which require specific expert knowledge and policy-related decision-making with established strict formal rules and procedures – sometimes time-consuming or seemingly bureaucratic. Citizens not being fully aware of all the formal requirements rationale is among the major challenges in establishing a working partnership on the ground.

The session is expected to provide a meeting space for all the key actors and beneficiaries in the planning process, which is expected to contribute to the exchange of points of view and ideas as an important part of the capacity-building for inclusive planning.

The session will build upon a dialogue between scientific and empirical knowledge about concepts, approaches, and procedures in the urban planning process under varying context. The empiric research has identified numerous challenges at the border area between informal and formal action for urban regeneration. Some open questions need to be addressed: How to identify and address conflicts of interest? How to manage the variety of expectations on different sides? How to synchronize the time frames of activities? How to acknowledge and reward volunteering?

Target audience: researchers, urban practitioners and decision-makers, representatives of citizens' organizations, city administration, etc.

A broad variety of contributions are welcome - scientific papers, case studies, policy briefs, storytelling, etc.

Topics to be addressed comprise:

- Building trust, capacity for dialogue and a common language among urban experts, city administration and local communities;
- Introducing innovative approaches and instruments to enhance the sensitivity of the formal planning process to the dynamics and variety of local needs and demands.
- Ways to encourage and reward citizens' volunteering in different stages of the inclusive planning process.

### 4A.1 - Artistic-educational practices inscribed in the territory of the city: the perception of complex ties between rural and urban

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This work is a reflection on practices inscribed in the cities, related to the artistic, political, and educational fields, aiming to cross the tensions and inequalities that the cities contain. This reflection is the result of the rapprochement with agents of the territory of Campanhã, in the city of Porto, which put us thinking about the rural integrated with the urban, in this time that calls for urgent transformations in terms of (re)organization of hybrid territorialities. Campanhã has become historically stigmatized and subjected to the prejudice of poverty, with effects that mark it to this day, but which stem largely from urban transformations of the past. The urban-rural unification movement, governed by capitalist logic, imposes a homogenizing dynamic. On the other hand, what is proposed in this writing is an analysis of the interactions arising from integrated identities that recognize the importance of new hybrid forms that emerge in this area. The concept of urbanities in the rural [1] is proposed as a form of resistance to homogenization and makes it possible to understand the interactions resulting from the multiple identities existing in hybrid areas. Recognizing and naming them is the beginning of a process of asking other questions. For this, it is necessary to find more sensitive ways of observing and coexisting in diversity, with the multiple landscapes and subjects who live there. In May 2021, we started a partnership with Associação Social da Cultura Ambiental A Soalheira, which simultaneously brought us closer to the Urbinat-Porto Healthy Corridor and the Forum, Cultura, Cidade: um Direito (i2ADS-FBAUP), based on hybrid practices that cross art-education-life. These provided complex intersections of social groups and triggered an interdisciplinary study. We are interested in thinking, in an inverted way, about the challenges to be faced to deal with the complexity of "collective and inclusive" planning. Firstly, we ask about our ability to recognize the incompleteness of the knowledge, methodologies, and concepts that we use with the intention of comment the complexity of everyday life, which requires a transdisciplinary approach. By stimulating experimentation, critical research, and artistic creation, at the local level, in this context of rural-urban hybridism, we seek to trigger the

multi-scale exchange between specialized and popular knowledge in a dialogical and dialectical process based on mutual trust, so that the clash of ideas is productive for subjects with distinct views who share ethical-political principles [2]. The hybrid practices that foster the empirical context of this study demand an open attitude, which does not anticipate tools and methods, but proposes to follow processes from what emerges in the specificity of each event. These forms of knowledge-experience-transformation are engendered in co-presence and promote the transformation of the participating subjects, which configures the educational-creative power of this approach.

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#### **4A.2 - Metropolitan Cartography methodology tracing back to the invention/construction of Ouagadougou loti and non-loti settlements' structure resilient points**

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OUAGADOUGOU in Burkina Faso is reclaiming a new metropolitan cultural framework and a structural matrix that holds its different city's morphology together.

Today, new and ancient ways to use the territory resources are scaled in time among practices that date back to the three pre-colonial, colonial and post-colonial phases.

Therefore, it is essential to structure an inclusive planning approach that aims to support citizenship by generating knowledge for collective action based on a city's narrative through maps. The MSLab's innovative approach introduces an open-source mapping methodology: Metropolitan Cartography (MC). MC, linked to MGIP Glossary (Contin et al., 2020), can relate the geographic ground to the territorial organisation to manage its scarce resources.

In MC, the map is a non-verbal narrative presenting how the past and the present territory's elements coexist; a map allows enhancing the sensitivity of the formal planning process to the dynamics of local needs.

The narrative interpreted in the Ouagadougou project is based on the possible coexistence between the loti (planned urban morphology) and the non-loti (urban cellular expansion). The city claims to project a new growth model's infrastructure that could transform the non-loti without destroying it, tracing back to the territory structure in notable point of resilience.

Findings Notable Points through MC's maps means studying the impacts of strategies defining formal and informal cities (Contin et al., 2022). Ouagadougou's large barrages and canal system are the Green-Grey Infrastructures (Galiulo, 2021) capable of forcing the Heritage of public space protecting the settlements by reinforcing the edges between ground/water, anthropic/nature.

Therefore, Metropolitan Cartography is a design tool to project signs of relationship among geography, remarkable points, roads and canals indicating places as mnemonic signs of the metropolitan mental map. MC's map strengthens knowledge of the metropolitan city epistemic structure to understand and accept its new dimension, structure and image.

In conclusion, MSLab's project proposes to promote Cultural Heritage as the dimension of change. Tracing tangible and intangible Heritage and hybrid space on maps, MC guides projects to different metropolitan rhythms' comprehension, studying the influence of heterogeneous contexts on mapping grounds. The metropolitan cartographic project made it possible to design the relationships between times and global/local values, which are dynamic forms in space maps, such as spatial processes.

Our mapping tool allows us to define strategies toward a metropolitan African identity as a collective value that we can acquire through the regeneration of existing loti and non-loti settlements. Through Metropolitan Cartography, our city reading or inheritance is diachronic. Then, through the narrative infrastructure of maps, the cultural and spatial transformation of change deals with a process of inclusion and deconstruction to read multiple identities according to a systematic and multi-scalar vision.

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#### **4A.3 - Co-creating NBS through cooperative work: ecological sanitation led by urban social movements in Rio de Janeiro, Brazil**

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The text discusses the role of Nature-based Solutions as socio-technical interventions within the context of social movements' struggles for housing and emancipated labour in informal settlements in Brazil. The discussion relies on concrete experiences of housing occupations in the outskirts of Rio de Janeiro city, where worker's cooperatives led the implementation of multiple NBS with technical advice from university groups through outreach projects in which both authors were involved as master's students (2016-2019). Among the solutions adopted by the workers, we focus on decentralized ecological sanitation systems built collectively to treat sewage in neighbourhoods uncovered by public sanitation services. The inhabitants have grasped and replicated these ecological sanitation technologies, among other NBS for water management, food production, and civil construction, significantly impacting their settlements and unfolding solidarity economy initiatives.

In the main case presented in the article - the Solano Trindade housing occupation - the co-creation of NBS involved the leading social movement (Movimento Nacional de Luta pela Moradia - MNLM) and university groups from the Federal University of Rio de Janeiro (UFRJ). This partnership has forged learning processes involving 12 families, over 100 students, 15 technicians, and 5 professors. The action-research was the methodology adopted in the technical advice process, aiming to identify challenges and co-create socio-technical solutions that respond to the dwellers' needs. This approach reveals that while scientific knowledge is socially recognized as a promoter of development and social well-being, the materiality of popular territories exposes the technical capabilities of the working class in the self-production of their living space in a context of enormous needs. During the exchanges between both groups, university and social movement, it was possible to acknowledge that the confrontation between scientific and popular knowledge produced socio-technical innovation and constituted pedagogical processes for all subjects involved.

Furthermore, when looking at the possibilities of building the right to the city through the production of common spaces and infrastructure, we could reflect on the following questions: To what extent might NBS, led by workers cooperatives, create different roles in the urban services provision system? What were the tensions between self-managed initiatives, public policies, and university outreach projects? Could these processes promote citizenship through participation in decision-making spaces? Were NBS integrated into the agenda for the right to the city led by social movements in Brazil? Thus, relying on the empirical evidence, as well as on the literature about the co-production of urban services and the engineering for social development in Latin America, we aim to shed light on the potentialities and challenges of co-created NBSS in the production of the urban space.

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#### **4A.4 - Urban green infrastructure: a detailed approach to ecosystem/cultural services**

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Urban green infrastructure (GI) and protected areas (PAs) are specific nature and cultural spaces in cities exposed to various negative transformations (Benedict, McMahon, 2006). These spaces have a wide range of ecosystem services which are crucial for the nature conservation and citizens at the same time. According to Millennium Ecosystem Assessment (2005) and CICES (Haines-Young, Potschin, 2018), such cultural services as recreation, historic heritage, «sense of place» etc. are included in ecosystem services. However, matter, energy and information balances are rather complicated in urban spaces due to enormous technogenic impact on small areas. Thus, ecosystem and social aspects are in great contradiction in urban environment by now (Trzyna et al., 2014).

The total ecosystem value according to zoning established by law and restrictions of human activities (E1) was assessed. Besides, ecosystem value according to actual landscape deterioration through on-site surveys and ability to proceed ecosystem services through InVEST tools (E2) was evaluated (Sharp et al., 2018). Moreover,

the cultural value (C) was assessed on the basis of functional zoning, government plans of investments and GI popularity among visitors through Strava data. Differences of E2 and E1, E2 and C were estimated through integral assessment maps in QGIS operations of weighted overlay. The case areas of study are three considerably large (330, 700, 1600 ha) PAs in Moscow (Russia), but it is possible to extend such method to other cities and green areas.

Estimated E2-E1 and E2-S values of PAs vary from -5.8 to -1.6 (possible values vary from -20 to 20), what pinpoints the prevalence of cultural services, including not only recreational, but also transport, utility, sport, science, education, sacral ones (Gowdy et al., 2010). The considerable spatial differences have been identified: riparian forests and grasslands, some parts of distant forests are under strong human impact and mild regulations, despite its high ecosystem value (insufficient restrictions). Besides this, a strong tendency of restrictions easing since the 2000s has been revealed – the area-weighted average dynamic parameters vary from -5.4 to -2.9 (through the scale from -20 to +20).

The devised set of methods may be implemented in resolving a dilemma between protection and exploitation and defining the most of gaps in GI planning and management. The expanses of negative E2-E1 values should be thoroughly surveyed and the elements of landscape design should be transmitted to the less disturbing forms: elevated walkways with permeable pavements, construction of strictly limited number of benches, localization of the visitors' influx in the narrow transport corridors equipped by convenient walkways, benches, litter bins, outdoor lightning. Moreover, all mobile retail objects must be conveyed to the main park entries, occupying biotopes highly transformed already. Besides, all downsizings of urban PAs with area compensation must be prohibited due to rapidly growing biotopes' fragmentation. At the same time, the social needs of citizens should not be neglected, as total prohibitions on human activities are seemed to be impossible in the contemporary megapolises (Trzyna et al., 2014).

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## **Session 4B - Citizen engagement and co-creation methodologies for sustainable urban regeneration: theories and practices for disruptive approaches**

### **Coordination**

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There is a broad consensus that citizen participation is critical in processes of urban regeneration, as well as the planning and implementation of nature-based adaptation. Citizen involvement is said to increase acceptance, fairness, quality of life and sustainability. Hence, the proposed session focuses on the methodologies and practices of participation in various stages of urban regeneration with the development of tools and guidelines for citizen engagement. This session will address co-creation initiatives that put Communities of Interest into action.

Encouraging ways that go beyond everyday traditional planning, co-creation aims to open the process to permanent innovation, challenging all for disruptive and experimental approaches that leverage Communities of Practice in different urban contexts.

We welcome a variety of presentations: subjects for researchers and practitioners through oral presentation format (scientific papers / report / design-artistic practices / storytelling).

The session aims to approach these topics in two perspectives:

- 1) Co-creation methodologies and processes that have been designed to engage a wide range of citizens and other stakeholders, focusing in particular on: innovative co-creation methodologies that frame strategies, goals, steps, and tools, with the aim of implementing projects by different actors. Further focus encompasses co-creation training models for future facilitators in living labs to co-create initiatives for the community.
- 2) Citizen engagements strategies related with: the efficacy of co-creation processes, namely in relation to

participation and inclusion; allowing the specific needs of the diverse citizen groups to be addressed; matching citizen engagement to the participatory cultures of cities; encouraging researchers and practitioners to build a mixed knowledge base with key stakeholders; working interdisciplinary and interculturally in developing NBS; rethinking engagement in times of COVID-19; sharpening and tailoring participation for an inclusive and innovative urban regeneration with NBS. The focus here will include case studies, lessons learnt and best practices.

#### **4B.1 - SPIRE Baia Mare**

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Decontamination of polluted land and creation of an Innovation Hub in Baia Mare ROMANIA

Basically, over the next three years, a total area of 8 hectares of land will become Living Labs. The entire project will involve citizens, entrepreneurs and students who will be able to come up with innovation ideas and will have a specially created space in the city center, an Innovation Hub.

The project partners will help to implement a virtual rewards and payments system, called iLEU, to encourage sustainable development behaviors in the city and to support citizens' involvement in the project, but also to obtain benefits and reductions locally, in the future. The iGIS platform will be used for data collection, a platform that will be able to provide forecasts on the duration of a land decontamination.

The UIA SPIRE project will use non-invasive and plant methods for remediation of heavy metal pollution. At the same time, the project aims to support new economies based on nature at local level, new initiatives in the community and ideas from young people.

Finally, after the concrete results of the project the partners will develop a Masterplan for the Baia Mare Metropolitan Area, which will aim at the recovery and regeneration of the approximately 650 hectares of polluted land.

The national partnership is coordinated by the Municipality of Baia Mare and consists of the following national partners: Urbasofia, Indeco soft, ARIES Transilvania, Baia Mare Metropolitan Area, University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca and Green Energy Cluster.

#### **4B.2 - Rethinking the right of the city through the vegetal : the case of street gardens in Lyon (France)**

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Producers of waste (Sassen, 2004), places of consuming more than production (Parham, 2015), cities are now subject of a social demand for nature (Bourdeau-Lepage & Vidal, 2012), participative democracy (Beierle & Cayford, 2002) and recently more political interest for climate change.

The problem of the cities comes today from the way in which they produce space, which we approach here under the angle of the sociology of H. Lefebvre: space is a social product, and this space is used as instrument with the thought like with the action. It is, at the same time as a means of production, a means of control thus of domination and power. For Lefebvre, space is thus the product of (daily) practices, strategies, representations, appropriations, even contradictory practices, resulting from groups, from different social positions. For him, the capitalist mode of production produces an urban space that is its own, and that allows its own reproduction. This capitalist space produced by an elite does not sufficiently take into account the climatic and vegetal issues, but it is beginning to change by including citizens more and more in the processes of urban construction (Bally, 2015). Citizens are invited to participate through collective gardening (like shared or community gardens) to produce and manage public green spaces (Ernwein, 2019). These citizens initiatives contribute to create new imaginaries about cities with spaces of plants, flowers and vegetables accessible to everyone, in each neighborhood. Street gardens (Bally, 2019), wild herbs emerging from the concrete, flowers on the space between a habitation and the pavement or flowers / vegetables in a trail, managed by residents, also produce new imaginaries : a nature close to the house, in the street, where everyone can garden and benefits from these gardens. Residents choose to cultivate their street and to take care of flowers during the year. They have to make a demand to the municipality, which can dig a hole in the pavement, or legitimate an existant trail. These street gardens are interesting because they grow on public space, without a fence, where everyone can act, even badly, on the flowers. From this perspective, the right to the city take the form of residents participation to their neighborhood landscape.

We base our analysis on an ethnography over 10 street gardens in Lyon (France). We led multiple observations on collective events, meetings and of other moments, and also 36 interviews with street gardeners and institutional actors on the territory, and we rely on the collection of secondary data such as charts, notes on events, newsletters, for example.

This presentation aims to show how residents can shape vegetal places through street gardens (which are in

part collective gardens), therefore claiming their right to the city (H. Lefebvre, 1968) and how they create new representations on the city, that can influence public policies and create path dependencies, like community and shared gardens did.

By appropriating a public space on the street, these inhabitants change the way the city is managed and contribute to the generalization of a bottom-up approach: it is the collective appropriation of the city, a reappropriation through daily practices, which can allow a liberation and a change in the mode of production of space (Lefebvre, 1974) and thus develop development solutions that are more in line with nature and the good life in the city.

#### **4B.3 - Photography as gravitas: on the relevance of visual anthropology and creativity for citizen engagement**

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With profound urban changes foreseen in the implementation of URBiNAT, in Campanhã, Porto, I tried to visually rescue personal narratives, emotions and reflections in this place. This presentation is, therefore, a systematization of the steps taken to produce a visual and textually sustained approach and to know how these can engage citizens in the interventions.

It became inevitable from the outset to develop a speculative visual research, which would capture expanded visions of the concept of sustainability, in search of multiple logics and rationalities. In this sense, care and transformation emerged from the unforeseen, from social, political, economic, philosophical and ecological events that could not have been anticipated.

Photographically approaching health, education, culture and housing are forms of care that range from the individual to the collective. This work could thus, in a way, be considered an oracle, a deliberate attempt to produce new issues surrounding URBiNAT's principles. To this end, visual anthropology has provided the necessary analytical tools to research relative truths, concepts and worldviews.

In this presentation, a set of recommendations, principles, curiosities, anecdotes and other stories are told to illustrate what can be characterized as ethnographic work and its peculiarities.

In this process, I intended to identify the constraints and possibilities surrounding the concept of sustainability. While it is true that any attempt at generalization is a permanent difficulty in qualitative studies, the images and voices present here have crossed the line that unites the intimate with the political.

It was intended, therefore, to move towards greater participation and co-production of knowledge with the approached people, hence engaging them in the upcoming project. In this way, and in this context, the objective was to recognize and, above all, promote the articulation of personal experiences with public policies, private initiatives and other locally implemented projects.

#### **4B.4 - First steps to social engagement for sustainable cities. The case of Buenos Aires, Argentina**

Mariángeles Viqueira Gabarain (0000-0002-9693-5470), Beatriz Plata  
UBATEC, Argentina

In the last decade, Argentina has developed many strategies, such as regulations and public policies, to mitigate climate change. Most of them are oriented to creating sustainable and resilient cities. In this context, an increasingly important role of local governments has been observed, allowing not only a more effective implementation but also greater participation of different stakeholders.

It should be noted that these plans begin to incorporate concepts related to nature-based solutions (NBS), especially in the city of Buenos Aires (BA). This city, with a population of approximately 3,000,000 inhabitants and 3 million more than daily commute to it, is being affected by increased flooding, severe storms, and heating. These climate challenges not only produce negative effects on the environment, but also on the economy and society.

In 2019, a Climate Action Plan 2050 (PAC) was designed based on Sustainable Development Goals (United Nations) 11 and 13, with more than 30 government areas, with the collaboration of an external Advisory Council. There were different participation spaces, such as the Forum to Fight Climate Change, workshops with elderly people, meetings with the private sector and the Consultative Council for the Environment and Sustainable Development. This Council was created in 2020 and it's made up by Civil Society Organizations led by young people. Its main objective is to assist and provide counseling to the Secretary for the Environment regarding planning, development, and promoting public policies.

As partners of UNaLab project, we carried out a study about the vision, ambition, and real participation of Civil Society Organizations (CSO) concerning the PAC of BA. The main reason for having chosen this sector is that their capacity to make their voices heard is limited. Despite existing instances of participation, there continues to be a significant gap between civil society and decision-making bodies.

To know the opinion of CSO about the current situation of NBS in Buenos Aires and to inquire about their vision



to build a greener city, we decided to use the Six thinking hats tool for both data collect and data analysis. We elaborate a semi-structure, descriptive and qualitative survey to interview key actors, based on each thinking hat, including topics such as co-creation, knowledge and interest, institutional management etc.

On the other hand, we studied the mechanisms used by the government of BA during COVID-19 pandemic to support citizen engagement.

The main findings from our study demonstrated that the city of Buenos Aires has the essential elements to incorporate NBS in more actions of the PAC and other public programs and the citizen participation has increased instead of problematic situations of the last years. The first steps have already been taken. Now it's necessary to improve and deepen the actions.

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#### **4B.5 - The shift from stakeholder to communityholder for Territorial Social Responsibility: the contribution of UNICITY Laboratory**

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The University of Padua's UNICITY Laboratory arises as a hub for the study and co-design of policy interventions for the strategic development of Padua as University City. It responds to the need to understand the university-city interaction within the socio-economic system, along with the need to "know to govern" the complex processes and trends in the urban organization of Padua. Besides to developing scientific knowledge on the topic, UNICITY aims to promote dialogue between the city and university. Within this perspective, a line of research-intervention is dedicated to measure the degree of shared responsibility and social cohesion of the community – particularly that pertaining to neighborhoods inhabited by native residents and university students. The goal of this line is to promote, through the resulting initiatives - tailored ad hoc on the basis of the data collected - a shift in citizens (permanent and temporary) from a profile of stakeholder to one of communityholder: citizen who, pursuing common and shared objectives, participate as an active resource in the management of requests/criticalities emerging within the community (e.g. fairness, sustainability). In doing so, the citizen acts as "dialogic node"<sup>1</sup> accelerator and promoter of social cohesion, and thus the governance responsibility is shared among all members of the community<sup>2</sup>.

UNICITYLab has built a tool called "Social Cohesion Thermometer", based on M.A.D.I.T.3, a specific methodology for the analysis of human interactions. M.A.D.I.T., through the study of ordinary language (the one used in everyday life), has encoded the interactive-discursive modalities used and usable by all the members of the community, assigning them a different "weight".

Social cohesion and shared responsibility are a product of citizens' interactions: through M.A.D.I.T. it is then possible to observe and measure rigorously which interactive-discursive modalities lead the community more towards social cohesion and shared responsibility, or conversely towards social fragmentation and deresponsibility.

In 2020, applying the tool in Portello district of Padua - inhabited by students, residents and local business - a low degree of social cohesion was found (6.4 on 1-20 scales): the citizen role was oriented towards the satisfaction of personal interests (stakeholder), that could conflict with those of other residents, since they do not consider a shared aim for the community<sup>4</sup>.

In 2021, another UNICITYLab research investigated the role of local businesses in the Portello district. In fact, within an often-conflictual interactive framework, but which can also find virtuous forms of collaboration and sharing of goals and common goods, they can promote the social cohesion of the community targeting both the native population and students. This is possible when they place themselves in terms of Territorial Social Responsibility, not merely pursuing an exclusively economic purpose, but also of care and regeneration of the territory. Research's results show that it's useful to strengthen the role of such exercises as community nodes: that's because, while they narrate themselves as social-hubs, they lack operational pragmatism in exercising a role as active contributors to the cohesion of the residential-student community.

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#### **4B.6 - Co-Creation process indicators of nature-based solutions: a deduced assessment methodology for stakeholders' engagement in CLEVER Front runner Cities**

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Since 2018, the CLEVER Cities project has put in place an inclusive co-creation pathway that aims at engaging stakeholders (in particular citizens, civil society, public and private stakeholders) in decision-making processes for Nature-based Solutions (NBS) within large-scale urban regeneration projects.

The scope of this research is to highlight the importance of conducting an evaluation for co-creation as an added value from the actual implementation of NBS in the collaborative environment of "CLEVER Action Labs" (CALs). Hence, a systematic approach to gather information on each city's pathway along the co-creation process was developed in order to evaluate: 1) commitment to the process and defining/refining the set of indicators, 2) realistic and relative impacts from the project implementation, and 3) added value to the project in terms of the validation of the co-creation process itself.

Within the context of Urban Innovation Partnerships (UIP)[i], different workshops and surveys were used to gather opinions and feedback from cities' leaders and co-creation facilitators' teams on the possible criteria of assessment from March 2020 onwards utilizing a reflexive method. Three sets of indicators mainly prioritizing 1) stakeholders' engagement, 2) shared governance and 3) co-design activities were selected. A learning by doing approach was adopted to structure the results from the framework implementation based on two categories of qualitative and quantitative indicators: procedural indicators (looking at the quality of the process itself in achieving its goals) and impact indicators (that address the expected impacts/results from the co-creation activities).

From the workshops with cities in concurrent timeline with the project co-creation processes, two sessions were held to validate the results from the surveys and the previous analysis based on cities exchanges. Two main categories are transversally embedded for measurement: Stakeholders engagement and Shared governance process within the two first project phases of partnership establishment and co-design. The measurements in these two categories are meant to be reflecting the overall co-creation process in the FR Cities and are not entailed to a specific phase (it could happen on a UIP scale or a CAL scale – any scale more detailed than that should be aggregated). The first column (categories) refers to Macro areas of interest such as 1) Stakeholder engagement, 2) Shared governance model and 3) Co-creation pathway (co-design phase so far).

Each city evaluation impact is translated into a score board to assess its own co-creation pathway performance; there is no pre-defined success or failure threshold. The general idea is to set a baseline for possible co-creation set of Key performance indicators towards a possible future verification and validation of the methodological framework.

The concept behind this methodological approach is not to compare between what "happened" throughout co-creation experiences in the Front Runners of CLEVER Cities, but rather to understand what added value co-creation can have in advancing shared governance models. The analysis will highlight evidence-base from a possible co-creation assessment methodology that takes benefits from the Front Runners' cities experiences.

[i] The UIP is the local public private partnership cluster of actors and stakeholders that carry out the implementation of the project in the local context of each city.

#### **4B.7 - Local planning and healthy city**

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Participation in urban planning

Participation; the action of taking part in something.

The participatory approach in the public planning domain has become institutionalized as a method of good planning practice as opposed to the rational hierarchical comprehensive approach. In the public sphere, especially in community planning, democratic principles and public participation have become increasingly accepted as means for balancing and rationalizing multiple interests and preferences. The end of participation is to forge consensus among interested parties, including planners, decision-makers, citizen groups and advocacy groups, outside the traditional decision-making setup. Participation is thus viewed as a community action that is

meant to augment the institutionalized democratic processes.(Kaza,Niki,2006,P256).

Healthy city theories

After the Industrial Revolution, the world's urban population increased This led to the emergence and formation of millions of cities in the area Most of this population was made up of immigrant and poor villagers They formed to move to cities in search of work. Concerns arising from this phenomenon led developed countries, especially after World War II, to take measures to resolve or contain this crisis. Due to these problems, theories about the preservation of the urban environment were presented, which led to the emergence of various cities in the industrialized countries and then in developing countries(Ziari and Janbaba Nejad,2009,15).

Co-Selection of NBS

The NBS co-selection workshop was held with the participation of a group of local activists, in which 12 local activists participated. Among the NBS that received the most votes:

- 1- School of Entrepreneurship
- 2- Equipping vacant lot
- 3- Growing mushrooms and hydroponic saffron

Case 1 was selected as the first priority with the highest number of votes and Cases 2 and 3 with the same number of votes were selected as the second priority.

Conclusion

Partnership and neighborhood are two interrelated elements. The characteristics of a healthy city arise from the characteristics that can be achieved with neighborhood and participation. Due to the high number of economic and social problems in families living in deprived neighborhoods, less attention is paid to the living environment, However, familiarizing the residents of such neighborhoods with the good living conditions and their right to their place of residence increases their attention to the living environment and the quality level of such neighborhoods also improves with the participation of the residents themselves. By pursuing URBiNAT project In Khorramabad the residents' attention to their living environment and sense of social responsibility increased. It is expected that with the implementation of several NBS proposed by residents, their level of trust and participation and consequently the quality of their living environment will increase.

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#### **4B.8 - Participatory planning for a widespread and resilient cross-border park**

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The project for the creation of a “Widespread and Resilient Cross-border Park” was initiated in the framework of the Master in Urban Regeneration and Social Innovation at the IUAV University of Venice.

Its assumptions are also inspired by the experiences of the URBiNAT project in Nova Gorica and Gorizia, in particular to the approach designed for an innovative use of public space through nature-based solutions, and tested during the participatory event “OLTRE OGNI LIMITE: rethinking borders in the new Europe”, which took place in February 2022 at the Gorizia campus of the Department of Engineering and Architecture of the University of Trieste, also thanks to the support of the initiative “University 4 EU - Your future, our Europe”. On this occasion, citizens were invited to rethink a specific border area, with a focus on the San Gabriele/ Erjavčeva Ulica crossing and constitutes the main axis of connection between the two cities, Nova Gorica and the old Gorizia, jointly nominated as European Capital of Culture in 2025, by investigating various themes: environment, urban planning, landscape, and infrastructure.

Forty-six people took part in the ‘world café’ - the chosen methodology for the interactive involvement of participants. In particular, the panel discussion about the cross-border environmental issue brought out concrete comparisons and needs. As an example, one proposal included the installation of bilingual (Italian and Slovenian) signs and panels to promote and improve accessibility in natural areas. The debate highlighted also the importance of building processes to identify and recognise these areas as places for educational excursions. These processes should become part of educational projects and sustainable tourism.

The results of this public event, together with what emerged during the week-long training seminar that preceded it, are the basis for possible further participatory planning activities that will continue to involve the citizens of the cross-border area, aiming at achieving a common vision of the territory that might lead to rethinking and a re-appropriation of these places.

As a follow-up, another initiative took place at the beginning of May 2022, when a group of about 30 people were involved in a “walkthrough” for participatory planning guided by the use of nature-based solutions along Via della Cappella and Via del Poligono (which lead into Slovenia to the Kostanjevica hill). Under the umbrella of

the URBiNAT project, citizens were invited (most of them residents of the streets) to express their experiences, expectations and wishes for the area they live in. The public discussion was useful to put a stress on several issues including: street lighting, parking spaces, historical cobbled paving maintenance (characteristic of the area), and the use of unused public buildings.

The process for a participatory design of the cross-border area has been started, thanks to several bottom-up initiatives and endorsed by the URBiNAT project and the GoBorderless2025 Culture Capital. The aims is both to co-design the public space and to improve the collaboration of the 2 citizenships across the border.

## **Session 4C - Active involvement of children and youth in the co-creation and decision-making processes involved in nature-based solutions for the advancement of sustainable urban development**

### **Coordination**

Beatriz Caitana, Gonalo Canto Moniz, Nathalie Nunesb(CES, Portugal); Fabrice Rodriguez (IRSTV, France); Ingrid Andersson (IKED, Sweden); Iuri Bruni, Mariapiera Forgione, Stefania Elisei (Comune di Siena, Italy)

Participatory processes contribute to the design of urban spaces based on the understanding of user experience and by enabling alternative or customized solutions. Children and youth benefit from participatory processes by being provided with the opportunity to build a sense of place and belonging, community responsibility, active cooperation, and creativity. However, they are often constrained by the expectations of adults, which isolate them from community participation and social activities. Despite advances in the legal and normative sphere, the realization of the right to participation in relation to children faces significant challenges in order to move from the availability to listen to their voices towards sharing power and responsibility in decision-making. The influence of adultcentrism includes children being seen merely as “the future” and yet not fully capable of making choices and decisions that affect their lives, which also results in silencing and legitimizing rights violations such as those based on age group, gender, race, ethnicity, functional diversity and sexual orientation. Such perspectives do not recognize the gradual autonomy of children – the progressive acquisition of competences inherent to this phase of life. A child-friendly city is committed to an ongoing process of implementing the rights of children and adolescents. In this context, participation is an opportunity to break with adultcentrism and establish horizontal relations of dialogue and intergenerational learning. This session is dedicated to debating the engagement of children in participatory processes for nature-based adaptation. Children can contribute inspirational content about nature and connecting to the local neighbourhood, transforming this knowledge into ideas for change as well as creating compelling messages to fellow citizens of all ages. The methodology proposed for this session is to present practical experiences in a diversity of formats, which will contribute evidence pathways related to the successful engagement of children and youth in the co-creation of nature-based solutions in order to advance sustainable urban development. Three papers will be selected for presentation during the session as well as a paper with URBiNAT workshop results. Topics may address, but are not limited to:

- a) childhood specificities in participatory processes;
- b) intergenerational learning;
- c) legal mechanisms and public policies to guarantee the participation of children;
- d) ethical issues involving children e) design and planning in schools;
- f) engaging children as part of the achievement of the right to the city.

### **4C.1 - Nature-based filterless Air Pollution Abatement Solution for Urban applications: the case study of Scuola Bagnera in Rome**

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This paper presents the initiative called “Pollution-free school” involving the “Giuseppe Bagnera” School located within the City of Rome. The initiative has involved the active participation of the pupils and the APA (Air Pollution Abatement) innovative Italian technology provider SME company IsCleanAir@.

In the two years that approximately have elapsed since the launch of the initiative, in April 2016, training and dissemination activities have been carried out, and community awareness programs (school, students, teachers, citizenship, administration, etc.) on the issues of air pollution. In addition, various tests and experimentation phases were carried out, in particular for measuring and more importantly abating pollutants coming both from the intense road traffic that develops in proximity of the School, and from other emissions of residential origin. The APA demonstrator which was based on an innovative nature-based filterless water-based technology APA,

low running cost and zero waste, consisted in a cluster of 3 APA® Large model Abatement systems deployed outdoor in the external perimeter of the school. In order to measure the abatement effectiveness of the APA systems, different sensors for monitoring NO<sub>x</sub>, CO and Black Carbon were deployed and in collaboration with CNR ISAC and CNR IMM of Bologna, various monitoring campaigns were carried out.

Results highlighted the efficacy of the APA nature-based technology in eliminating the wider spectrum of air pollutants present in the ambient air. Specifically, it was observed that in just 14 days of daytime operation of the APA systems the average concentration of BC did decrease by approximately 50%, similar abatements were recorded for NO<sub>x</sub>. Whilst the performance for CO was much higher reaching 80%.

During the duration of the experiment pupils were asked to draw and paint the APA Large models stimulating their interest for the topic and making them active participant in the successful initiative.

#### **4C.2 - Cities and urban green spaces in debate: including young children's voice**

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Urban green spaces (UGS) are important parts of the urban ecosystem, offering solutions for dealing with extreme heat waves, debacles, or floods, and promoting a first contact with the local biodiversity, motivating informal environmental learning [1]. But access to natural parks and contact with different forms of non-human life, mainly by children, has been restricted with the increasing urbanization of the population [2] and the reduction of learning and leisure time outdoors [3]. Research results highlighting the positive impacts of UGS should be used to inform decisions in city planning, involving its inhabitants as agents of the dynamic processes of cities' transformations and adaptations. And children, as city dwellers, should also be considered in these processes. However, the question arises: are children being involved in the planning and maintenance of the UGS? And, recognizing children's agency, how can these spaces be created, managed, and transformed also through their effective participation and involvement? Using a participatory approach for engagement, we aimed at understanding what preschool children prefer in the city landscape. Photo-elicitation interviews were used to find their opinions, emotions, and perceptions about the city of Coimbra, Portugal, and were complemented with drawings created by children, in two different occasions: following the interviews, and embedded in a storytelling about a utopian new city. The drawings were treated as Personal Meaning Maps [4] and analysed accordingly. Eighteen children, ten aged 5 and eight aged 6, participated in the photo-elicitation interviews, and ten in the storytelling and free drawing sessions (three aged 5 and seven aged 6). Results show that children, in their perception of the public urban space and in their preferences, are mostly guided by aesthetic and emotional values. Aesthetics values were classified through the identification of positive and negative attributes; the attributes identified as underlying emotional values were all positive. Overall, there were almost no direct references to nature, or UGS. It thus appears that urban living can challenge the expected innate affiliation with nature. This result adds to previous observations that children prefer less biodiverse urban gardens [5], supporting the suggestion that the diminishing time children spend outdoors and in contact with nature may enlarge the nature/culture divide [3,6,7]. Together, results show how young children envision a "better city" and how that construction can defy current scientific knowledge on the positive impact of urban biodiversity on human health and well-being. In particular, children seem to be well adapted to the building environment. From their perspective, the city emerges as a space that offers multiple opportunities to establish meaningful relationships with friends, family, and space. As such, contrary to expectations, young children envision a city that does not necessarily include UGS. However, results also show that urban biodiversity triggers positive memories and interest and curiosity for environmental-related issues that can be used to foster co-construction of significant knowledge.

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#### **4C.3 - Co-designing NBS for schools through a participatory process with kids in Porto**

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The URBiNAT project aims to involve local citizens to jointly create a Healthy Corridor in three European cities to ensure the inclusion of neighborhoods living in areas with major social and environmental challenges. A co-creation process organized in 4 phases, co-diagnosis, co-design, co-implementation and co-monitoring, is

being implemented in the cities. As part of the co-design phase implemented in Porto, a participatory process involving kids, among others, has been organized in the six schools located in the area to be regenerated. The objective is to co-design a Nature Based Solution (NBS), namely a vegetable garden, that can answer to educational, environmental, and inclusivity purposes. The process, organized in 8 activities, involves 3 groups of participants and it is implemented through different participatory methodologies. Kids between 8 and 12 years olds together with their teachers from each of the six schools, students participating in the Institute for Advanced Architecture of Catalonia (IAAC) post graduate programme and experts of the site area from URBiNAT consortium have been involved in the following activities:

Activity 0 (URBiNAT experts) – Co-selection of the NBS to be implemented in the schools through focus group meetings with Porto municipality. Outcome: vegetable garden NBS for kids

Activity 1 (Teachers and kids) – Teachers gathering kids' preliminary ideas and inputs after a preliminary training about NBS and URBiNAT received from URBiNAT experts. Outcome: analysis and selection of possible locations of the vegetable garden in each school; preferences' collection between vertical vegetable garden and mobile vegetable garden.

Activity 2 (Urbinat experts + teachers and kids) – Kids presenting motivation of the selection to the experts; walkthrough with URBiNAT experts guided by kids through the possible locations in the school; co-design of the vegetable gardens functions with kids in groups reflecting on biodiversity and ecosystems; analysis of maintenance requirements of both solutions with teachers and URBiNAT experts. Outcome: coloured drawings and balsa models of the vegetable garden project produced by kids; presentation of projects by kids to the URBiNAT experts.

Activity 3 (Urbinat experts + IAAC students) – IAAC students developing design alternatives inspired by kids' projects; alternatives include structures for cultivation and textures inspired by Porto's "azulejos" to stimulate senses and enhance the sense of belonging to the place. Outcome: scaled models produced with advanced manufacturing and parametric design techniques.

Activity 4 (Urbinat experts + teachers + kids) – Kids, supported by URBiNAT experts, evaluating design alternatives through emotional mapping adapted at kids and by inspirational re-connection of their projects from Activity 2 with design alternatives proposed by IAAC students. Outcome: Qualitative and quantitative evaluation of design alternatives.

Activity 5 (Urbinat experts + IAAC students) – IAAC students fine-tuning the design alternatives. Outcome: real scale prototype of vegetable gardens portions.

Activity 6 (Urbinat experts + teachers) – Co-adaptation of design alternatives to be implemented. Outcome: infrastructure requirements' analysis for each school.

Activity 7 (Urbinat experts) – IAAC researchers developing the final design for each school. Outcome: final design of the vegetable garden for each school.

Activity 8 (Urbinat experts + teachers and kids) - Co-implementing the solution together. Outcome: vegetable garden implemented in each school.

## **Session 4D - Nature-based solutions and their effect on health, wellbeing and behaviour**

### **Coordination:**

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In recent years, the qualitative (re)design of the human habitat has become a central and concrete field of action, included in important political agendas at national and international level, with the United Nations Sustainable Development Goals at the forefront. In addition, the European Union is massively funding the concept of nature-based solutions (NBS) as a holistic approach with which to tackle the challenges faced, from the climate resilience of urban environments to the health and wellbeing of its citizens. More specifically, the health-environment context is increasingly in the spotlight, with the global disease burden being dominated by Non-Communicable-Diseases (NCD) such as diabetes, obesity, chronic respiratory diseases, cancer, and mental and cardiovascular disorders, which are related to the environmental conditions in which people live (van den Bosch & Ode Sang, 2017; Vos et al., 2015). While a convincing body of evidence indicates a positive relationship between green space and health, the complex interrelations of environment, wellbeing and behaviour are not fully understood (Hartig et al., 2014; Labib et al., 2020; Markevych et al., 2017; Twohig-Bennett & Jones, 2018). Advancements in this area of research are a high priority to enable quantification of the true values of this kind of urban renewal. This might be the missing leverage point needed to enable a greater level of engagement among local decision makers, citizens and other stakeholders in the forthcoming green transition of our cities. We invite submissions from urban and environmental researchers as well as related disciplines that contribute new insights to this research domain. This session aims to bring together scientists working in the area of NBS-health research, for presentation of their insights and to debate key indicators, methodological standards, theories and research priorities in the field.

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#### **4D.1 - See, the good is so close! Health-promoting residential greenery: The green living room on our doorstep in times of crisis and beyond**

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The pandemic exacerbates existing inequities and negative impacts in neighborhoods with preexisting social, environmental, and/or economic multiple stresses, resulting in widely varying perceptions of the pandemic, particularly depending on whether and to what extent resources are available to address the crisis (Collinson 2021). Environmentally and socioeconomically disadvantaged neighborhoods are particularly vulnerable, and residents have limited means to cope with the crisis.

Our studies focus on the residential greenery in the most disadvantaged areas of Berlin, Germany with high noise and air pollution, high bio-climatic stress, low social status indexes and low access to green spaces, identified on the basis of the Environmental Justice Map of Berlin (see details in Battisti et al. 2020). The residential greenery is defined as green of the immediate surroundings of the residential buildings created in connection with the construction of the respective settlements (Säumel & Butenschön 2018). This part of the urban green infrastructure is very rarely in the focus of research, is overlooked by planners, neglected by architects and step-motherly treated by housing companies, and, nowadays, strongly pressured by urban (re) densification. It provides multiple ecosystem services to the residents and is - perhaps - “the sleeping giant of urban green”.

Our Studies on residential greenery in neighborhoods of modernist housing complexes that are home to three quarters of the Berlin population cover the dense and closed block-edge developments (1870s to 1920s), the block-edge development with large green backyards (1920s to 1940s), the parallel and free row development within landscaped residential greeneries (1920s to 1970s), and the large housing estates with towers and high-rise buildings (1960s to 1980s). Today the residential greenery originally designed in these different epochs does not share a common plant use mode. Woody species mapped in the residential greenery have a medium to high air filtration capacity, but also one to two third of the planted species have a high allergenic potential. All residential greeneries have common elements that support physical activities and related healthy life styles such as bike racks, benches or playgrounds. Bioswales, façade-attached greenery, atriums, fountains or ponds are rare (Battisti et al. 2020).

The residential green was very appreciated before the pandemic. Residents visited the parks once per week, but daily benefit from residential greenery, which was used passively (e.g. enjoying the sun and fresh air) and outweighs active uses (e.g., meeting neighbors, playing sports). Respondents have different views of their city and are very attached to the place, but less to their neighbors (Säumel et al. 2021). It seems to be crucial to enhance welcoming qualities and the motivation to be physically active by implementation of adequate elements. An enhanced multifunctionality of residential greenery helps to maximize the adaptability to diverse and changing residents' needs across different cultures and generations. We developed a guideline for health promoting ecosystem services of residential greenery (Mohr-Stockinger 2020). We also analyzed the views out of the window on green areas in the apartment of great importance especially during lockdowns (Schmid & Säumel 2021). These window perspectives significantly different from ground perspectives and composition of visible elements varies by building type. Vegetation and structural elements for recreation were positively perceived. During pandemic (Summer 2020) the residential greenery became a crucial refugia for neighbors.

Residents' park visits increased during the crisis compared to the period before. The crisis fostered appropriation of residential greenery such as meet neighbors or do sports. Moreover, the spectrum of residents' requirements for RG expanded significantly to active use settings (Säumel & Sanft 2022).

The scientific community recently started to explore the impacts of the COVID-19 crisis on urban societies. However, it is undisputed that the weakness and shortcomings of our lifestyles and governance modes have produced collateral damages, particularly to vulnerable groups we claimed to protect, such as children, the younger generations and the elderly. We highlight the crucial role of residential greenery in dealing with inequalities in the urban living space, and the need to conserve, restore and re-design residential green to enhance health and the resilience of our cities (Säumel & Sanft 2022). Urban planners, neighborhood manager, housing companies and neighbors should join forces to unlock the potential of residential green as an effective measure of preventive medicine (Coburn, 2015). Designing an inclusive and actively usable 'green living room' will reduce the divides not only in times of pandemics and re-connect neighbors as 'social tissue' of our neighborhoods.

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#### **4D.2 - (Re)finding the values of nature in the neighbourhood of Estação, Faro**

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The role of nature in historic cities has been a growing debate in creating healthier environments as society pays more attention to mental and physical health. The relation between nature, city, and community is growing in understanding but still limited in practice.

Recent research evidences that high cultural values of green places, where people like to spend time, positively impact their well-being. Moreover, investigation of this topic showed that community well-being is connected to the presence of nature because of strong emotional attachment to greenery in historic cities.

This paper focuses on the neighbourhood Estação in Faro, Algarve, Portugal, which historically was an agriculture area but nowadays contains only a few green areas and lacks connection with the Ria Formosa National Park (lagoon). These natural elements primarily convey, e.g., aesthetic and ecological values but may also bring a broader cultural significance to the community of Faro. Hence, how to restore nature in the neighbourhood of Estação by considering community values?

Participatory methods, in particular gaming, are used to reveal the values of the community. Gaming is a participatory method that enables co-creation in representing, visualising, and redesigning architecture and the urban landscape. Both sides can learn by engaging the local community. The method supports raising awareness about values and considering them in the redesign process. Four participatory methods are developed in these regards to be suitable for engaging different age groups. The methods consist of: 1) A walking tour, 2) cultural mapping, 3) a card game, and 4) Minecraft video game. 86 participants took part in the research, divided into four different age groups, from children to elderly.

The results of each method were coded using the values framework of Pereira Roders (2007) and the attributes typologies of Veldpaus (2015). By comparing the results of the different age groups, it can be concluded that for all age groups, the ecological, social, and economic values are the most important. When further breaking down these values, the most significant overlap between younger and older generations can be seen in the secondary (social) emotional-collective and (ecological) spiritual values. However, when looking at the attributes, a significant difference



can be seen as younger generations feel more attached to tangible attributes since they might perceive the environment through more visible and physical aspects. On the other hand, the older generations are more attached to intangible attributes as relation attributes consisting of memory, meaning, and identity.

By understanding the local community's values, design guidelines can be made to restore nature within the neighbourhood of Estação. These guidelines will be further used to develop a strategy for implementing value-based redesign in order to improve the living environment of different age groups. The set of participatory gaming methods can be applied to other cities in consultation processes that aim to prioritise solutions to restore nature in historic cities.

Keywords: cultural significance, heritage values, public participation, healthy cities

#### **4D.3 - User engagement through perception of vertical greenery: a case study in Milan**

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The fast growth of cities has been caused and accelerated by the impacts of climate change, health issues, and pollution. In urban areas, these challenges have such environmental, economic, and social repercussions as to be required sustainability as an obligation. In this framework, Nature-based Solutions can offer multi-scalar beneficial impacts and people engagement can become the key for their successful implementation. Buildings are started to be included among Green Infrastructures when their skins constitute the green infrastructure by itself. They can be both green roofs and green walls from horizontal and vertical planes, respectively. The latter, the Vertical Green Structures (VGSs) are a relatively new technology still under development that needs more research to understand the benefits and possible drawbacks. In the framework of urban regeneration, VGSs can foster sustainability in urban areas currently facing a lack of horizontal land surfaces to design novel green parks and gardens. These structures can offer both direct and indirect versatile benefits with the potential to contribute to robust and resilient cities through human health and well-being.

The green elements can make it easier to breathe nature which has been demonstrated important for physical and mental health especially during the COVID-19 pandemic situation, when the physical and visual benefits for people interacting with living plants have become evident.

The motivation of the present study is to understand what is the existing level of users awareness in the perception of vertical greenery. This is done looking at a case study in Milan Polytechnic University, Leonardo campus. To this aim, a survey is prepared in both Italian and English language and circulated among the users of two buildings in the campus to understand how they interact with the existing VGSs, as well as to assess their existing knowledge and future expectations. The questionnaire is consisted of multiple-choice questions, yes-no questions, and open questions. There are twenty-one questions clustered in five main sections with a final open question that asks if any participant has further comment to share. First section aims to understand the demographic background of the participants. The next sections have the scope to understand general knowledge level on vertical greenery in the framework of sustainability and Nature-based Solutions; emotional perception; and future respond, respectively. In this preliminary step, the questionnaires have been distributed among students who are at master and bachelor levels on the following disciplines: architecture, landscape architecture, urbanism, and construction engineering. The preliminary insights show as most participants consider themselves knowledgeable in sustainability, although this score decreases when the scale of interest is reduced. On the other hand, participants who declare they have high level of knowledge on Nature-based Solutions, are more aware of vertical greenery. The participants who consider themselves with high knowledge, are mostly aware of the main benefits VGSs contributes to, except their functions in food production, protecting wall surface, storage (or demanding) water, and in enhancing thermal insulation. Students stated that they would like to be trained more on the topic of vertical greenery. The result of this analysis helps to understand people's interest and experience of vertical greenery as well as their future expectations from it. The VGS technology should improve looking at the ways users are experiencing existing green wall technologies to make steps forward towards the optimization of social benefits. The future aims of this work are both to enlarge the pool of target groups participating the questionnaire and to create new sections for assessing the awareness of benefits - nowadays still hidden - in the use of vertical greenery as well as unconventional and possible even more economic sustainable use of green wall.

#### **4D.4 - Exploratory approach to nature-based solutions for human-ecological well-being and health in cities**

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The Habitat III, New Urban Agenda established a new paradigm shift in sustainable development. Likewise, calling for global action on well-management and well-planning of urban spaces in cities in a sustainable and

equitable approach, in order to boost health and quality of life. The EU research and innovation agenda aims to help solve urban and territorial challenges towards an inclusive, resilient, healthier and sustainable future ahead with nature-based solutions (NBS), in order to provide environmental, social and economic benefits through systemic adaptation interventions. This exploratory analysis on the NBS Cluster Go Green Routes (GGR), conducted under the framework of the EU-funded H2020 project GO GREEN ROUTES; was intended to bring new insights in the debate about NBS into co-design, co-creation and co-implementation in cities for well-being and health in cities. The main objective of the study is to analyse perspectives on public urban spaces intervention to enable the co-design, co-creation and co-implementation, co-assess and co-monitoring of NBS in Cultivating Cities in GGR project; Umea (Sweden), Lathi (Finland), Tallinn (Estonia), Limerick (Ireland), Versailles (France) and Burgas (Bulgaria). With the aim to broaden the discussion on environmental and ecological, political socio-economic perspectives related to NBS interventions in public spaces as a drive for human and ecological well-being and health in cities, with the expected impact to mainstream NBS into the EU policy and global agendas facilitating the science for practice research. This paper presents the methodology deployed in the NBS Cluster GGR: firstly, proceeded with research literature review on the main concepts, after that through an exploratory qualitative analysis aimed to augmenting a comprehensive perception of social issues; provided with four workshops during 2021 and finally, validation of the theoretical and procedural dimensions for the implementation of the NBS. The overview of the exploratory NBS Cluster workshop session contemplated the following aspects: main challenges, expected impact, NBS for human well-being and health in cities and enablers and barriers. The main findings of the study are as follows: (i) Transdisciplinary approach is key in the overall process; (ii) A comprehensive approach to sustainability when we co-design, co-implement, co-assess and co-evaluate NBS is highly valuable; (iii) Key principles about science, research and innovation from research to practice, from strategy to design to implementation.



Room 152

## **CHANGING ECONOMY FOR EQUITABLE CITIES**

Rethinking the urban spaces towards an inclusive regeneration
Economy for Equitable Cities
Cities for whom? Asymmetries, economies and exclusion in the urban space
Urban regeneration and social innovation: Social and Business Opportunities

## Session 5A - Rethinking the urban spaces towards an inclusive regeneration

### Coordination

Beatriz Caitana (CES, Portugal), Milena Tasheva-Petrova (UACEG, Bulgaria), Sofia Martins (GUDA, Portugal)

Climate change and biodiversity loss have led to a need for significant changes in cities. The “green agenda” has been prioritized by diverse actors worldwide, such as governments, civil society and private stakeholders. Not by chance, concepts such as Nature-based Solutions, ecosystem services, among others, are broadly recognized. Moreover, those concepts seek to expand green topics without disassociating them from socio-economic and cultural issues. With the COVID-19 pandemic, inequalities such as problems of mobility, housing, and access to nature and well-being are beginning to feature on the public agenda. Society on a global level seems to be witnessing a shift from a desire for untrammelled globalization to placing greater importance on local communities, the neighbourhood, the place and the home. Any city project based on a sustainability perspective must take these issues into account, and therefore understand their multidimensional character, by considering responses integrating environmental, social, and cultural perspectives as part of the process and not as the end. Aiming to discuss solutions both based on nature and on socio-cultural dimensions, this session will rethink public spaces to be more integrated and resilient.

### 5A.1 - Polarized cities and fragmented citizenship: rethinking participation and political opportunities in urban spaces

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In Brazil, the right to the city is described in the City Statute, which provides for the right to sustainable cities. The Master Plan, provided for in the City Statute is the main instrument of urban development and expansion policy, presents itself as a mechanism capable of ensuring the planning of the performance of the Government, enabling the orderly management of cities, combining the performance of the Government and the participation of civil society, in the direction of state actions, in the achievement of the well-being of individuals. This article aims to analyze the importance of political education, considering the construction and dissemination of knowledge from citizen participation for the practice of advocacy in the management of cities. Thus, through documentary research, the pedagogical political strategies developed by Projeto de Educação Ambiental da Bacia de Campo (NEA-BC) in two cities located in the state of Rio de Janeiro: Quissamã and Armação dos Búzios. Although there are constitutional mechanisms that guarantee participation in public administration decisions, implementing them constitutes a challenge for the management of cities. The work developed, community-based, committed to those impacted communities and with low decision-making power over socio-territorial and environmental resources has, in political education for democracy, the construction of a critical and liberating process. The occupation of decision-making spaces and social control is one of the strategies to be adopted to strengthen the decision-making power of these communities, which must be organized and prepared for political action. The NEA-BC has built teaching-learning processes with the community, taking into account articulations between action, reflection and action. For Borja (2013), with an increase in urban populations, there will be a need to manage public policies that guarantee quality of life in cities more efficiently, effectively and effectively. It should be noted that the democratic city is a permanent conquest, an open field of confrontation of values and interests, a challenge to political innovation, urban imagination and civic mobilization (BORJA, 2013). For more emancipatory and transformative urban management we start from the assumption that it is necessary to create mechanisms that boost local citizen participation. According to Souza (2008), as the individual acquires a broader view of local dynamics, they gathers elements to act on issues directly related to theirs daily life, from a perspective different from that which moves theirs peers, they start to consider the complexity of the situation and all those involved. It is up to the municipal government and representatives of civil society to build or improve dialogues and actions that guarantee the quality of life of all citizens, through the implementation and supervision of urban public policies, orchestrated not only with an institutional architecture that legally guarantees the right to the city, but, with a management and planning that roots, according to Gohn (2011), a process of absorption, re-elaboration and transformation of the existing culture, generating the political culture of a nation.

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## 5A.2 - Quality public space and the right to the city for a more inclusive and equitable urbanism

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Public space is a key element for sustainable urban dynamics and is vital for creating equitable and democratic urban spaces, present and futures. Parks, streets, sidewalks, markets, beaches, gardens, playgrounds, libraries, and community centres offer a wide range of functions to contribute to a city's cultural, social and economic development; and prompt civic empowerment and political engagement (Chong, 2022). However, awareness about the importance of public space has not yet been fully established, and the concept of public space remains ambiguous and not actively promoted, both in the Global North and in the Global South. As a consequence, public spaces are often poorly designed, maintained or managed as a leftover space, while publicness is jeopardised by private interests, political regime, or improperly planned or un-planned urbanisation. Additionally, top-down decision-making processes are mostly guided by economic issues and globalisation trends, with housing policies that do not contemplate adequate public spaces (Bravo, 2020). Public space is not simply a well-designed physical space for public enjoyment; it is primarily a way of re-thinking cities and human settlements so that they can powerfully contribute to the effective implementation of the main pillars of the right to the city, such as:

building safer cities, especially for women and girls, children, vulnerable groups and people with special needs (migrants and refugees, informal workers, street dwellers, children, youth, older persons, people with disabilities, among others);

fostering non-discrimination, regarding gender, age, health status, income, nationality, ethnicity, migratory condition or political, religious or sexual orientation;

meeting the needs of city's inhabitants (especially those related to livelihoods);

enabling human rights, embracing cultural diversity and promoting socio-cultural expressions;

shaping democracy by promoting political participation;

promoting social cohesion and inclusive citizenship, for temporary and permanent inhabitants, by granting equal opportunities for all and ensuring access to secure livelihoods and decent work, also through a social and solidarity economy.

The Right to the City is based on the theoretical approach of Henri Lefebvre (1968) and has since inspired struggles, experiences and mobilizations. Nowadays, the concept is linked to a more complex urban scenario made of socio-spatial discrimination and exclusions, increasing inequalities and neglecting civil rights, due to globalization phenomena and neoliberal political and economic systems.

As stated by the Barcelona declaration on public space, the right to the city is "a new paradigm that provides an alternative framework to re-think cities and urbanisation" (Habitat III, 2016) on the basis of principles of social justice, equity, democracy and sustainability, for the effective fulfilment of all internationally agreed human rights and the Sustainable Development Goals of the Agenda 2030.

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## 5A.3 - Presenting Urbinat Concepts in Brazilian Cities: 2021 International Seminar Summary

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The International Seminar Inclusive Cities and Nature: Brazil-Europe dialogues was proposed by the Environment, Ecology and Animal Protection Commission (CEMPA) of the Legislative Assembly of the State of Paraná (ALEP) as part of its experience as an observer of URBiNAT Consortium. The Seminar was a collective work made by CEMPA and URBiNAT, in collaboration from Goura's mandate and Centre for Social Studies of the University of Coimbra (CES/UC). The event aimed to increase the integrated relationship between cities, nature and people in the municipal government agenda, looking for inclusive and sustainable urban transformations and the diffusion of Nature Based Solutions (NBS). The partnership with Paraná's Architecture and Urbanism Council and Paraná's School of Management allowed the online event to reach municipal servants and public managers.

The main topics discussed in the event were: (i) Co-governance and public policies; (ii) Sustainability and co-creation of solutions; (iii) Inclusive economy and urban regeneration; and (iv) Networking and cooperation between cities. Addressing examples from Brazilian and European cities, the experiences exchanged at the seminar involved public managers, academics, social activists, technicians, and members of civil society,

integrating different sectors and knowledge in the workgroups. In addition to that, the opening and closing sessions of the event had lectures, respectively, by PhD Professor Claudino Ferreira (CES/UC) and PhD Professor Ermínia Maricato (BR Cidades).

The Seminar welcomed 165 attendants from 47 Paraná municipalities, among other Brazilian and Portuguese cities (Lisbon and Porto). 43 people took part in the seminar workgroups, representing 14 Brazilian cities, between 20 thousand to 2 million inhabitants. Two collective intentions were mentioned by them at the end of the event: to establish a collaborative network among the participants of working groups and to propose pilot projects in their municipalities. These projects may work as laboratories to engage citizens and as workshops to municipal and regional technicians and managers.

At the final session, some points were highlighted by the promoters: (i) the relevance of introducing NBS to some municipalities of Paraná, allowing them to plan and monitor urban projects; (ii) the importance of bringing different actors together at the seminar, especially public managers and researchers, promoting the construction of an “evidence-based policy”; (iii) the emphasis on diversity: diversity of scales – from neighbourhoods to metropolis and regions; diversity of actors; diversity of looks; and diversity of realities – from the north-south global to the internal differences of the cities themselves. This scenario shows that citizen engagement can be a strong ally of local governments with benefits for both sides. Therefore building collective projects and genuinely listening to the communities is a strong path to more fair and sustainable cities.

## **Session 5B - Economy for Equitable Cities**

### **Coordination**

Thomas Andersson (IKED, Sweden), Guido Ferilli (IULM, Italy)

Applications of conventional economics, through an influence on government policy and acceptance of unmitigated market forces, often contribute to the challenges of polarisation and fragmentation within cities, which are linked to inequality as well as social and political instability. This session invites contributions presenting new methods, strategies, and driving forces on terms that support NBS and healthy corridors while diminishing inequality in urban development.

The present proposal aims to review the role of economics and how it is applied in shaping the driving forces, decisions, processes, and outcomes relating to the fragmentation and polarisation of cities. The session welcomes new methods strategies to operationalise and assess more favourable and inclusive outcomes, with particular attention to the issues and opportunities pertaining to Nature-based Solutions and Healthy Corridors. Furthermore, the session could contribute with new insights related to governance and the means of achieving capacity building to overcome some of the most serious and lingering issues confronting the urban environment. The session also aims to broadening the theoretical and conceptual dimensions of the Healthy Corridor.

### **5B.1 - Ecosystem condition indicators to support Nature-based Solutions implementation in cities**

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The ongoing pandemic crisis has exacerbated the existing socio-economic and environmental inequalities within cities (Grima et al., 2020), including in terms of green space accessibility and ecosystem service provision. Among others, the presence of high-quality green spaces and elements and the enhancement of Ecosystem Services (ES) supplied by Nature-based Solutions (NbS) have become a more pressing need. The provision of ES highly depends on the condition of ecosystems. Natural ones are usually regarded as the main providers of ES, but urban areas can also be seen as ecosystems with their own structure and functions which provide a certain range of ES (Haase et al., 2014). The knowledge of urban ecosystem conditions can therefore support different types of policy questions within processes for sustainable urban planning in an equitable perspective. Several general frameworks for the assessment and accounting of ecosystems and their services are currently being developed internationally, including the Essential Biodiversity Variables, and the UN's SEEA EEA Ecosystem Condition Typology (ECT). The latter aims at regular and standardized stocktaking on the extent of ecosystems, their condition and the services they provide to society (Maes et al., 2013; Czúcz et al., 2021). However, so far there have been only few attempts to apply it to urban contexts, and its usability to support decision-making processes is still uncertain.

Our research aims to advance the application of ecosystem accounting in urban contexts by proposing a set of condition indicators for urban ecosystems' classes. We reviewed scientific and grey literature describing indicators of ecosystem conditions for both urban ecosystems and other ecosystem types that can be found in urban areas (e.g. agriculture and forest patches, rivers). The indicators were categorized according to the DPSIR

framework. For each indicator, we noted the ES to which it was linked in the publication. Proposed ECT are grouped into eight classes: 1. Demographic and socio-economic factors; 2. Habitat alteration and fragmentation; 3. Ecological-environmental condition; 4. Structural and functional attributes; 5. Land cover; 6. Land use and management; 7. Conservation and protection status; 8. Biodiversity.

The classified indicators for urban ecosystems can support local governments operating in urban contexts. Their use could guide the geographical arrangement of NbS with the potential to inform decision-makers determining policy priorities or proposing green intervention, and their design, that respond to specific types of inequality. We conclude by discussing suitable scales of analysis and possible uses of condition indicators in the framework of urban ecosystem accounting exercises.

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### **5B.2 - Comparative Analysis: Business models and Impacts of Nature-based Enterprises**

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Governments increasingly recognize the viability of Nature-based solutions (NBS) to deal with societal and environmental challenges. Noteworthy hurdles, including immature market development, have been well-documented to hinder realising their potential for value-creation, however. While innovation and the rise of Nature-based enterprises (NBE) have been observed to improving the situation (Kooijman et al, 2021), the realization of sustainable business models and impacts on socio-economically weak populations continue to raise issues (Peredo and Chrisman, 2006; Anyonge-Bashir and Udoto, 2012). The present study aims to investigate the marketability and financial viability of different kinds of NBEs, while taking account of community-based organization as well as social and participatory NBS. The methods involve field research in three city areas, in Sofia, Nantes and Porto, featuring in-depth interviews with Nature-based enterprises, innovation hubs and municipalities. Based on a comparative analysis, we draw conclusions on variation in the marketability and viability of NBEs along with their impacts on sustainability. Finally, policy implications and recommendations are presented, including lessons for dissemination and replicability.

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### **5B.3 - Trees as Infrastructure (TreesAI) A portfolio financing platform to enable transparent public private partnership for the long term stewardship of urban nature-based solutions**

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Cities around the world are acknowledging the importance of trees and pledging ambitious afforestation targets. By 2030, Prague has pledged to plant 1 million trees (Dimitrova, 2021), Milan is aiming at 3 million trees (Barry, 2018) and Sydney intends to add 5 million trees to the city's existing urban forest. (Greening Our City | NSW Dept of Planning, Industry and Environment).

However, we are struggling to maintain our existing tree stocks. In England, green space declined from 63% to 56% between 2001 and 2016 (Zylva et al., 2020); in Madrid Hurricane Filomena devastated a third of the city's trees (Filomena Arrasa Un Tercio De Los árboles De Madrid, 2021); and ash dieback in Glasgow is forecasted to affect 12,5% of the urban tree stock (Stewart, 2021). By 2030, 290,000 km<sup>2</sup> of natural habitat are forecasted to be converted to urban land uses (McDonald et al., 2019).

This paper presents the case of TreesAI; a cloud-based platform, establishing nature as a critical part of urban

infrastructure, alongside bridges, roads and rail, enabling investment, profitability and sustainability. The aim of TreesAI is to establish urban trees as investable assets, with multi-dimensional values. TreesAI aims to support city scale partnerships to support NbS scaling by bridging science, technology, and civic participation. This paper will be presented through the study of Glasgow's urban afforestation challenges, plans and the potential solutions that could enable its sustainable and just delivery. It will look at current limitations of urban nature finance and maintenance practices, and how these can reinforce the decline of forest's health. It will make the case that following good science and software engineering practices can enable a new kind of decision making process for city wide transition. State-of-the-art machine learning methods combined with citizens sensing are employed to detect trees from 2D or 3D image data. Scenario Analysis Framework is developed to geolocate, design and forecast nature-based solutions portfolios and their impacts, across time (50+ years). These tools and information can enable new partnerships from stakeholders at different levels of the governance spectrum, from local communities to nature stewards, funders and practitioners. This paper looks at how the open-source nature of the impact models combined with a thorough stakeholder engagement portfolio design process, is fundamental to gain the respective trust of a variety of actors while maintaining the portfolio mission intact and aligned. This is a key component of multi-stakeholders value distribution to help close the finance gaps to adapt to climate related financial risk.

We suggest that the development of an open-source cloud-based platform could support nature stewards to aggregate projects into landscape-scale portfolios, build the business case that the benefits of urban forests far exceed its costs, ultimately attracting private and institutional capital to fund the long term stewardship of Nature-based Solutions (NbS). The platform would help establish the replicability of such case studies across cities. TreesAI makes a compelling argument for maintaining a green infrastructure with carbon, water, health, energy, economic and social benefits serving as a basis for co-investments.

#### **5B.4 - Triggers of transformation - A case study of public spaces in Muscat**

Shaharin Elham Annisa<sup>1,2</sup>, Rowa Elzain<sup>1</sup>

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The 1970s oil boom in the Gulf countries triggered an exponential growth of their cities. The urban development of the capital city of Oman is no different. Muscat expands linearly towards the northwest with a major focus on road, electricity, and waste infrastructure and little focus on housing and amenities such as parks and outdoor spaces. With the rapid urbanization process, a vital part of the physical development is undertaken by the support of top-down laws and policies with the role of the public sector being at the core. (Role of ministry: allocation of plots and regional planning; the role of Muscat Municipality: Execution, design, implementation, and Maintenance at different scales). Furthermore, Muscat lacks an official policy that calls for community/civic participation as there is no clear foundation that enables people to participate in the design of outdoor spaces. However, in the last decade, awareness has developed among the residents of the city in order to play their role in the process of development. This research aims to document the development of outdoor open spaces in Muscat. The vitality of these spaces corresponds to the opportunities it provides to the vulnerable groups of the community. These spaces are seen to develop in an untraditional process, independent of the local municipality. By taking several typologies of outdoor spaces as case studies with varying governance structures, the research objective is to outline the level of appropriation of spaces by analyzing physical characteristics that shape them; the types of corresponding users; their roles and responsibilities in co-creating these spaces; the private financial initiators of such projects and the uses that trigger activity within these spaces.

The case-study typologies vary spatially and socially from each other but are presentative of other neighborhoods in the city. Moving from a position of permanent to temporary appropriation these typologies are neighborhood parks, spaces within souqs, street fronts, beach fronts, empty parking lots, and undeveloped allocated land.

A qualitative research approach focusing on small public space users and their contribution to the transformation of the area was taken. Hence using interviews, and surveys, we understand the process of transformation from the user's perspective. Furthermore, through aerial maps, direct observations, photography, and spatial mapping we trace the development process of the physical space.

Our findings indicate that in order to fill in the gap in the provision of public spaces by the public sector, residents of various neighborhoods take it upon themselves to appropriate permanent and temporary interventions in public spaces. The typologies that this research has identified are neighborhood parks, spaces within souqs, street fronts, beach fronts, empty parking lots, and undeveloped allocated land. In neighborhoods with financial investors such as Bank Muscat, Bahwan, and Khimji, permanent infrastructures, the research identified the development of landscaped public playgrounds. Neighborhoods that have the presence of active neighborhood bodies/CBOs/ NGOs give rise to the development of temporary spaces such as activities on street fronts. Furthermore, there are two main aspects that contribute to the triggers of appropriation of temporary spaces in other neighborhoods at the level of Wilayat. These aspects are the economic opportunities, the specific spatial quality of the location, empowerment, and initiatives by residents, and the presence of governing bodies. Finally, in low-income neighborhoods, appropriation of spaces is mainly attributed to simply the dire need to be present in outdoor open spaces.



The research highlights the need for the presence of active community-based organizations for lobbying for the need for outdoor public spaces. In addition, the research calls for attention to the development of policies and incentives by the public sector towards the participatory development of outdoor open spaces at neighborhood scales.

## **Session 5C - Cities for whom? Asymmetries, economies and exclusion in the urban space**

### **Coordination**

Luciane Lucas dos Santos (Centre for Social Studies, Portugal), José Luis-Fernandez (University of Extremadura, Spain), Beatriz Caitana (Centre for Social Studies, Portugal)

### **Abstract**

The conventional models of the market economy have not been able to reduce asymmetries, or generated by the transformation of the urban space. Although the discourse on sustainable urban development has been grounded in social inclusion and an ecological perspective, environmental gentrification has subordinated equity to profit-minded development and deepened economic disparities (Checker, 2011). Social exclusion, due to social markers such as race, gender, nationality, age or sexual identity to name but a few, has defined the experience of minorities in relation to access to the city. Representations of their perspectives are usually underrepresented in the design of the landscape. Their access to social, cultural and safety facilities has been impaired. Participation by minorities in the decision-making processes of urban planning has been permanently neglected. Taking the notion of the inclusive city as a starting point, this session aims to reflect on the traps that the inclusion discourse might produce in relation to urban planning issues and public policies. The session will also highlight the strategies, intervention models, methodologies and policies that work towards an urban regeneration proposal that values heterogeneity in terms of landscape, economic alternatives, aesthetic experience and uses of city space. Different proposal formats are welcomed, including scientific papers, case studies, policy briefs, and artistic performance, among others. Given the emphasis on public policies, the participation of policy-makers and analysts, social scientists and environmental activists is encouraged.

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### **5C.1 - A child-friendly city – sustainable city**

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Nothing equalizes children, (single) parents, elderlies and persons with disabilities (PWD's) as much as public space. By accessibility rules, customs and physical impediments, their participation and access to social, cultural and safety facilities is discouraged. Since women are traditionally seen as caregivers, providing care to children, elderly, PWD's, as well as to all the others in need of care, accessibility to public space has to be observed through the gender lens.

Due to the traditional role of caregivers, more than one third of Serbian young women aged 25-29 do not even seek employment (35.7%) (Babović 2019: 18). At this age, women are mostly raising children, who need open public space for their proper development. Besides small green and children parks in the city centers, they usually do not have much of a choice of activities in the public space. While taking care of others, women rarely may practice or consume some quality activities for their own well-being. Nature-based solutions, that would satisfy and develop cultural and social needs of all, are of great need in Serbia.

If we look closer at the cultural public space, we see that less than 25% of museums in Serbia are accessible to PWD's, while something more than 50% of museums do not have accessible interior and public space (ZAPROKUL 2022). Most of the cultural programs, especially performing arts, are organized separately for adults and children. Most of the adult programs are not even permitted to children, either by behavior expectations (silent, calm, seated...) or by inadequate hours, air, noise, etc. In this way, parents, children, elderlies, PWD's are more and more pushed towards virtual world of internet, at least those 78% who used Internet in 2020 (Statistical 2021). With the pandemic, internet usage has increased, but brought even bigger challenges.

"Cultural sustainability supports and connects the other three dimensions of social, economic and environmental sustainability" (Opoku, 2015: 49). Still, traditionally half of the Serbian population is excluded from participation in cultural life (Mrđa, Milankov 2020), especially divorced single parents (66%) (Stanojević 2014: 79). Apparently, all the responsibility of citizens' social status and participation in public life is on individuals, while public policies are still remaining ignorant towards gender dimension. A child-friendly city

could satisfy the needs of the most, if their needs are acknowledged.

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## **5C.2 - Public-Private Partnerships, Urban Regeneration Projects and Asymmetries: contributions from a systematic literature review**

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Urban regeneration practices are increasingly used in urban development in different contexts, with the aim of reclaiming degraded urban areas of the city. The regeneration of urban areas, especially when these represent strategic areas of cities, are inserted in a scenario of increasing competition between cities. This competition is intensified by globalization and the context of neoliberalism. Neoliberalism is associated, in turn, with an idea of neoliberal urbanism and, also, with the concept of urban entrepreneurship, the role of the private sector being of great relevance. In this sense, many urban regeneration practices are implemented through public-private partnerships.

Regarding the projects, despite the different urban contexts, some specific typologies of projects can be observed, thus identifying common characteristics of projects in different contexts. Thus, the current work seeks to identify, from a more comprehensive literature review about PPPs in urban regeneration, specific typologies of urban regeneration projects carried out through public-private partnerships. The objective is, beyond the identification of typologies, to understand the main characteristics of the projects and, above all, to understand the consequences and the asymmetries resulting from their implementations.

The results point to some well-defined typologies such as mega-events projects, business improvement district (BID), brownfields redevelopment and industrial areas, sustainable cities and low carbon cities, creative cities and smart cities, waterfront projects, entertainment and shopping center projects, projects related to heritage and historic areas. Regarding the asymmetries, it is observed that many of these projects, while providing urban and economic regeneration that benefits specific groups, present evidence of processes of exclusion and gentrification. The asymmetries observed intensify as these projects are increasingly inserted into the logic of neoliberal urbanism and the strong action of the private sector to the detriment of the public sector. Neoliberalism thus finds a very clear formulation in urbanism, fostering urban entrepreneurship and private appropriation of value.

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### 5C.3 - Goura's Mandate working guidelines for Paraná, Brazil

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Yoga teacher, cycle activist and with master's degree in philosophy at UFPR, Goura was elected state deputy in 2018 with 37,366 votes. His mandate has a constructive feature, with 39 draft laws approved, 60 public hearings held and hundreds of proposals. Goura is also President of the Environment, Ecology and Animal Protection Commission (CEMPA) of the Legislative Assembly of the State of Paraná (ALEP). He has an important role questioning - and stopping, if possible - environmental setbacks led by state and federal governments.

Cycle mobility was the subject that introduced Goura into politics, as a city councillor. He supports the integration of the bicycle, a "non-dominant" transport, in the Curitiba urban mobility debate. This intention to break paradigms is present in many other banners defended by the deputy: environmental protection; urban agriculture and agroecology; organic food; cycle tourism; urban waste management and better working conditions to recyclable waste pickers; cities for people; urban mobility; art, culture and historical heritage; public security; social housing; human rights; LGBTQIA+ rights; mental health; humanized childbirth; medical cannabis and drug policy; traditional people support (indigenous, quilombolas and caiçaras); education and public workers.

The mandate is organized in a collective and non-hierarchical way, open to the permanent contribution of participants and supporters. An intense agenda of communication and debates with society was established from the beginning, through informative booklets, field visits and community listening, in addition to dialogue with the executive and judicial representatives, universities, NGOs and professional associations. Especially at this critical moment for Brazilian democracy, the engagement of the deputy is fundamental in the public debate and to represent groups excluded from the current planning process. Regarding the theme of this session, we emphasize that the mandate has been working with communities in the Metropolitan Region of Curitiba to guarantee their right to housing - and to the city - especially in the health emergency context between 2020 and 2022. The "Popular Housing Conference of Curitiba and RMC", held in November of 2021, was part of this work. The conference was attended by 26 organizations (among resident's associations, universities and mandates) and produced a manifesto entitled "For a Public Policy on Quality Housing". Deputy Goura also looked for an understanding with judiciary power to extend the validity of the federal legislation that suspended evictions during the pandemic, approved with the support of the Zero Eviction campaign.

The search for infrastructure and safety conditions for pedestrians and cyclists is also part of the contest for urban space that Goura supports in Paraná. In addition to that, he sought, during the public budget approval, to guarantee state resources for culture, whose workers were hit hard by the Covid pandemic. The mandate also stands up for agroecology and community-based tourism policies, aiming to preserve traditional people's culture and territories as a counterpoint to the current economic model (agriculture commodities for export), which has a great impact on local ecosystems and brings few benefits to the population.

## Session 5D - Urban regeneration and social innovation: Social and Business Opportunities

### Coordination

Fábio Sampaio, Beatriz Caitana, Isabel Ferreira, Nathalie Nunes (Centre for Social Studies, Portugal)

Contemporary societies are facing new economic problems and challenges, crystallized in the form of urban contexts characterized by social exclusion. This situation demands a rethinking and restructuring of the neoliberal development paradigm, readapting the capitalist discourse to embody the increasing awareness of the need for change, including a move towards inclusive urban regeneration. Market-oriented innovation can no longer be perceived as a long-term solution and therefore other approaches to innovation, such as social innovation, are emerging. Social innovation is a complex process that seeks to solve social problems by generating new ideas, products and processes to meet social needs. Despite the current relevance of the social innovation concept, resulting from the fact that contemporary societies face unprecedented problems that endanger their economies and social models, there is a question that remains – how can decision and policy makers use the paradigm and concept of social innovation for inclusive urban regeneration to deal with social and societal challenges at the same time as depopulating the economy and business opportunities? Taking this premise into account, the URBiNAT project is based on social innovation, having at its core the meeting of social needs in a socially inclusive way. This directly involves and is determined by the people who have those needs in cooperation with other relevant stakeholders. That being said, there is a need to identify the problem-solving mechanisms used for social problems and social innovation in order to create a tool to overcome challenges

and to support the creation of business opportunities. Proposals are expected to discuss the opportunities that emerge from social innovation in order to solve social and societal problems, particularly in the context of urban regeneration. In short, this session welcomes contributions examining and casting light on ways for decision and policy makers to help boost social innovation in support of inclusive urban regeneration, as a means to addressing ongoing social and societal challenges. Analysis identifying hurdles and impediments to social innovation, while also examining how they can be overcome, are of great interest. Both theoretical and empirical studies will be included.

### **5D.1 - Academic Entrepreneurship and Social Innovation: Transforming Responses to Societal Challenges and Needs that Influence the Generation and Diffusion of Social Innovation Practices – A Literature Review**

Fábio Sampaio  
Centre for Social Studies, Portugal

In recent years, various forms of science-society articulation have become widespread. Academic entrepreneurship is one such mechanism. It refers to the creation of enterprises based on knowledge generated at the university. The role of the University and other scientific research entities was then reconsidered in the knowledge society, as centres for producing knowledge and innovation. Many entrepreneurial initiatives aim to generate responses to social needs, being directly linked to the generation of social innovations. Concerning this social value produced by academic entrepreneurship, it is associated with the resolution of societal challenges. From a Schumpeterian perspective, academic entrepreneurship can be analysed as the generation of value through social innovation. Social innovation refers to the development and/or implementation of new ideas to meet explicit or latent social challenges and needs using shared and co-produced knowledge that is innovative both in its ends and in its means.

Portugal was not far from this trend, but the topic still needs investigation. Based on contributions from S&T Social Studies and Economic Sociology on entrepreneurship and innovation, this communication aims to analyse the link between academic entrepreneurship and social innovation. This connection will be analysed within the framework of the concept of academic entrepreneurship as a “practice carried out with the intention of transferring knowledge between universities (...) and the external environment, in order to produce economic and social value” (Cantaragiu, 2012, p. 687) and, on the other hand, social innovation as the development and/or implementation of new ideas to meet explicit or latent social challenges and needs, and this innovation can favour social well-being, growth and economic performance. That being said, entrepreneurial activity is examined as a vital element for societies, because entrepreneurs (in this case academic entrepreneurs) introduce innovations in the system that will most likely contribute to social, economic and financial development, while developing, a triple relationship between university, industry and governance, thus promoting the dissemination of social innovations that will culminate in benefits for society.

This communication arises from the preliminary results of the state of the art of doctoral thesis: Academic Entrepreneurship and Social Innovation: An Economic Sociology Approach to Entrepreneurial Contexts, Ecosystems and Dynamics in Portugal. The communication seeks to contribute to the debate on the existence of different responses to the challenges and needs (academic entrepreneurship) that influence the generation and diffusion of social innovations. In short, the study aims to highlight academic entrepreneurship as a driving force of social innovation.

### **5D.2 - U-SOLVE: adjusting entrepreneurial and open innovation methods for thriving urban communities**

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The proliferating sustainable development challenges of urban areas require a societal mindset change. Innovative approaches for urban transformation and regeneration, combining nature-based solutions with society-based solutions are essential, to make our cities thrive and prosper. Open innovation and entrepreneurial approaches, typically designed to serve economic and corporate ambitions, can be adopted and reconfigured for driving urban communities towards sustainable and inclusive growth.

Recognising the increasing awareness for the need of mindset shift, as well as the importance of urban regeneration, U-SOLVE – an empirical project supported by the ENI CBCMED Programme – seeks to stimulate cities and their stakeholders to co-create a future that is sustainable for people and the environment, based on circularity and redistribution of resources. U-SOLVE is experimenting an innovative process, which is based on the principles of the ‘Doughnut Economics’ (Raworth, 2017), promoting social development under the ceiling of the planetary ecological limits. Quintuple helix co-creation processes are activated to boost the implementation of SDGs in urban contexts of the Mediterranean region, seeking for the appropriate orientation of innovative technologies and business models arising from creative sectors, towards priorities expressed by local actors through a participatory process.

Implementing the initial activities of U-SOLVE has accelerated our learning curve about the effective development of sustainable urban communities. Main barriers are the lack of an all-inclusive, transparent

interaction and experimentation of urban actors during policy and decision-making processes as well as the appropriate mindset and culture for solving complex sustainable development challenges. It has become evident that policy-making procedures might exclude local society; however, society might be also lacking interest in the present configuration of open participatory processes. Mobilising the creative and cultural industry, through a lean and transparent dialogue, can significantly enhance the collective engagement towards urban sustainable transitions.

Empirical realisations showed that activating a community's wide-ranging interest is a complex task; accepting and adapting to changes takes time; fostering imagination and sense of ownership can help build stronger communities; and conceiving with a long-term horizon in mind rather than expecting immediate outcomes is key. Further, it resulted that the sustainable transition of cities requires a creative effort around existing areas and settlements, rather than the further promotion of urban sprawl as a shortcut to move away from the wicked urban problems.

Human capital emerges as the critical asset for thriving communities. The creative sector can generate solutions that influence behaviours, meet social needs and encourage the success of interventions for urban sustainable development. Activating the creative industry (at the crossroads of the arts, culture, business and technology) can trigger imagination and breed urban cultures, fostering socio-technical systems towards more sustainable and equitable models.

In closing, cities can become more sustainable and inclusive through the creative use of existing resources, if appropriate cultural schemes would emerge. Creative and cultural business opportunities and solutions may have the power to support this process – by triggering imagination, influencing behaviours, and engaging the wider population.

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### **5D.3 - Public-Private Partnerships in Urban Regeneration projects: Identifying local actors from a systematic literature review**

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Urban regeneration practices make up current urban development and are often carried out through public-private partnerships (PPPs). These practices have several characteristics resulting from their unique nature in urban, social, economic and environmental terms. From the social point of view, one of the main characteristics is the wide range of stakeholders involved.

These stakeholders can be of public or private nature, organized in groups or acting individually, and belong to different hierarchical levels of power. Among the main actors, there are the public sector through its different levels of government; the private sector represented by companies, entrepreneurs, foreign capital, real estate agents; the local community and citizens, with emphasis on residents and merchants; independent agencies; and non-profit organizations.

Despite the great importance of all stakeholders involved in PPP processes in urban regeneration projects, the strong role of local actors is observed, especially regarding the local public authorities and the local community/citizens. The strong presence of local actors in PPP processes in urban regeneration can be understood within the concept of local governance. In this sense, the present paper approaches the idea of local governance in PPP processes in urban regeneration, trying to analyze the different roles of local actors and seeking to understand how each group of actors acts in different urban, social and institutional contexts.

The results point to different contexts in which local governance is applied and to situations in which local forces act to support the intervention to be carried out and situations in which local forces act as resistance to specific interventions. It is also possible to observe that the ability to influence the urban regeneration practices of these actors depends on their organizational capacity.

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#### **5D.4 - Designing socially inclusive co-creation of urban nature-based solutions**

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The use of nature-based solutions (NBS) to enhance urban resilience is gaining prominence in both academic research and the urban planning domain, as they hold proclaimed co-benefits for the environment, society, and economy (European Commission, 2020; Faivre et al., 2017; Kabisch et al., 2016). However, empirical research shows that the consideration for social benefits such as equity and social inclusivity is often lacking in urban NBS design and implementation processes. This lack of attention often enhances processes of green gentrification (Haase, 2017; Haase et al., 2017; Rutt & Gulsrud, 2016; Tozer et al., 2020; Kotsila et al., 2021). At the same time, co-creation processes are increasingly being promoted and used by researchers, public actors and urban planners as an approach that can include a diversity of local stakeholders in the creation of urban NBS (Lupp et al., 2021; Raymond et al., 2017; Zingraff-Hamed et al., 2020). However, literature on co-creation shows an implementation gap between the intended diverse representation of stakeholders and deeper levels of participation through a co-creation process and the challenges of meeting these goals in practice (Leino & Puumala, 2020). This implementation gap is partly due to the lack of a framework for co-creation that incorporates issues of social inclusivity. To contribute to insights on how to make the co-creation of NBS more socially inclusive, this paper develops a novel design-oriented framework based on a synthesis of existing scholarly insights from NBS, urban planning and co-creation literature, and through empirical validation. The conceptualization of a co-creation process by DeLosRíos-White et al. (2020), including iterative co-explore, co-design, co-experiment, co-evaluate and co-management phases, is used as the backbone for the framework. This literature-derived framework has been empirically validated through two case studies from the EU-CLEVERCITIES project and two focus groups with leading experts on NBS implementation and co-creation. The validated framework consists, amongst other elements, of five general and fourteen stage-specific guiding principles for the socially inclusive co-creation of urban NBS. Additionally, the framework includes five pre-process inputs that have been found to provide a conducive context for socially inclusive co-creation processes. The validated framework highlights the importance of collectively understanding and defining the local problem(s) together with local citizens as the starting point for the co-creative process. Only through this first step, there can be an opportunity for NBS to be reflexively tailored into a potential solution and offer greater social value. In addition, the process should be accessible to diverse social groups through tailored engagement tools, target-group-specific language, and involving social group representatives as mediators. Moreover, the co-design of the NBS should carefully consider long-term implications for social inclusivity, for instance, the spatial effects, financing mechanisms, and long-term governance arrangements. We find based on the results that the validated framework holds two purposes, as a design-oriented tool, and as an evaluation tool. The framework can be used to help practitioners develop future urban NBS co-creation processes that centre around issues of social inclusivity and contribute to a fairer and greener city.

## Posters

### **P.1 - Searching for Equitable, Inclusive and Caring Urban Neighbourhoods: Measuring Children's Right to the City Through Urban Design. An urban laboratory in Contumil and Lagarteiro social housing**

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Public spaces have become fragile environments where minority groups, children and their caretakers are the most affected by socio-spatial inequalities. The real and perceived insecurity has been restricting minors' presence to institutionalized places, designed especially for them. This form of integration denies the educational function of the city, as a place to appropriate with personal interpretation.

However, proximity can still be found inside the neighbourhood unit and made visible through children's actions and interactions with the public space, as a connector between buildings. Hence, their participation in urban public policy design and their inclusive perspective should be the benchmark of improving cities' public places.

While this movement has engaged academics and has been advocated by municipalities, it has had little to no influence on design and planning agendas, yet.

Appointing children into decision-making positions, encouraging organisations and businesses to promote a friendlier public realm, is the way to a fairer society.

The research intends to study and apply the results of three successful international policy programs from the southern European context into two selected social housing neighbourhoods of Porto, Portugal: Contumil and Lagarteiro.

It does so by analysing children's experience through site-specific pilot workshops developed in neighbourhoods with school-age children of the first stage of basic education (6-10 years). The groups are diverse in terms of ethnic and parental background, and eager to take part in different activities and methods, reinforcing community and solidarity networks.

These workshops aim to assert theory and practice with direct participation and cooperation between associations working in the territory, ensuring a situated work focused on the public spaces of the neighbourhoods. Therein, one of the goals of the academic research is to provide a road map and guarantee direct dialogue between the associations that still hesitate to work together.

The final step of these laboratories is an internal and public evaluation, through an exhibition in the neighbourhoods, of results and impact, with the aim of systematizing an urban toolkit as a child participation assessment tool, to make knowledge operational, reproducible and adaptable in different contexts. This open-source tool would empower children as citizens, users and creators to take part in the city-making process as they become aware of the use they make of places and their rights in them as citizens.

The motivation and innovation behind this research rely in making knowledge feasible through a pilot project, developed over consolidated methodological experiences and reflections, that can be operationalized and politicized to transform a specific urbanity, offering a template for effective, long-term action in this lack of inclusion in the public life.

The results of this experience aim to urge urban planners, architects, and designers to re-scale and re-imagine places from a different perspective.

By including children in targeted programs and formulations of policies, it would benefit health, well-being, local economies, safety, nature, sustainability, and resilience.

Promoting equitable, inclusive and caring neighbourhoods through urban and participatory design would enable residents to co-create alternatives in contexts of social exclusion.

In doing so, making it inclusive to all.

### **P.2 - Photography as an instrument to approach Residual Spaces on the Peri-urban Fringe**

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The modern belief in rationality and technical-scientific knowledge as the main references for the recognition and management of the territory, led to the simplification of the urban reality to a universalizing entity, reducible to simple schemes and taxonomies [1]. However, the city of today is a complex and constantly changing organism, so complex that it is difficult to define it through the old concepts and tools [2]. As referred by Lamas [3] the disciplinary abstraction assumed in traditional reading processes does not allow to fully explain the urban object, either in its configuration or in its formation process. Thus, the "passive" analysis needs to be complemented with in loco assessment, through the cross-reading between the erudition of scientific knowledge and the impressive approach. Instinctive or emotional perception seems to be the key means to apprehend the particularities that constitute the identity and values of territories and societies - assuming, as argued by Lynch, that perception is an eminently creative act [4]. To that extent, photography can be a valuable instrument in urban studies, as it complements traditional vertical analysis and

historical analysis by introducing data from the sensitive experience - in line with the idea that urban planning is done with the feet [5]. Photography therefore becomes an instrument of documentation, of cataloging, of knowledge of the transformations of the territory and of the city, taking into account perceptual, symbolic and representational aspects that are essential in urban studies [6].

Since its creation, photography has been used as an instrument of documentation of urban transformations and has found a privileged field of investigation in cities. However, starting from the Sixties and Seventies, photographers began to show interest in the large empty spaces at the borders or within cities, called Residual Spaces or, according to Solà-Morales [7], Terrain Vague, undeveloped areas at the border of the urban areas, characterized by the mixture of urban and rural dimensions, where emptiness prevails over fullness and naturalness prevails over built.

Starting from the role that photography played in recognizing the transformation processes of territory and urban settlements, it is proposed with this poster a photographic approach to Residual Spaces and its possibilities to integrate traditional analysis, taking the pre-urban fringe of Florence as a case study.

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### P.3 - Symbolic Right to the City

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The main objective of this study is to demonstrate the symbolic characteristic of the right to the city on peripheral capitalism countries, according to Brazilian professor Marcelo Neves' theory of Symbolical Constitution, which states that any legal system – beyond its inherent symbolism as a cultural system that expresses values – bears a specific symbolism originated from each country's own sociopolitical and economic structures. Taking this premise, the theory develops a typology that aims to dissect the subject of symbolic legislation and presents the legal system with some qualitative variables such as instrumentality, that establishes a relation of means and ends, i. e. the bill is made to reach its specific ends, with the respective means of law enforcement; expressiveness, in which the bill itself is confused with the needs it intends to supply and, at symbolism itself that is related to postpone conflict solving problems. Considering these variables the theory of symbolic constitutions gives us three types of symbolic laws, each of them with a different perspective, such as need to confirm values towards societies, meaning that government has made its choice among the several social movements in dispute; the second express a need to build up an impression of listening to societies demands in order to build trust between politicians and electors, and symbolic laws with the sole aim to postpone social conflicts. In order to demonstrate the impact such framing has in the false enforcement of the right to the city, we go to the Brazilian Constitution of 1988, which establishes that urban policy in Brazil is to be developed mostly by local governments and shall ensure the social function of the property throughout city and its real estate. Law 10257/01, known as the City Statute, establishes the right to sustainable cities and defines a list of subjective rights including the right to housing, urban land, sanitation, urban infrastructure, transportation, public services, work and leisure. Beyond what the law states, it is our aim to establish a relation, from an analysis of budget resources allocation, between urban legislation and the Constitutional Amendment 95/2016, which set a new fiscal regime forbidding any increases in public spending over the next 20 years, affecting directly the setting of an agenda able to deliver any practical results on public policies regarding the right to the city. Therefore the right to the city, which aims to be framed as a human right in the City Statute has, in practice, been reduced to a symbolic law that must be read is the third type of symbolic acts, with the sole aim of postpone social conflicts, whose effectiveness is doubtful per se – failing to enable the construction of an emancipatory right to the city, from the epistemologies of the south perspective, which would allow its concept and its content to be built upon human experience, from citizens, who live and work in the city.

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