

# Nature Based Solutions: Make them practical 4 Climate adaptation!

Learning methodologies,

Collecting Ideas,

Getting inspired for Innovative, Effective  
and Efficient Design from Implemented  
Case Studies.

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and Regional Planning, Policy Support Facility,  
Covenant of Mayors



## **Context**

**Case study #1: MAC, Pozzuoli**

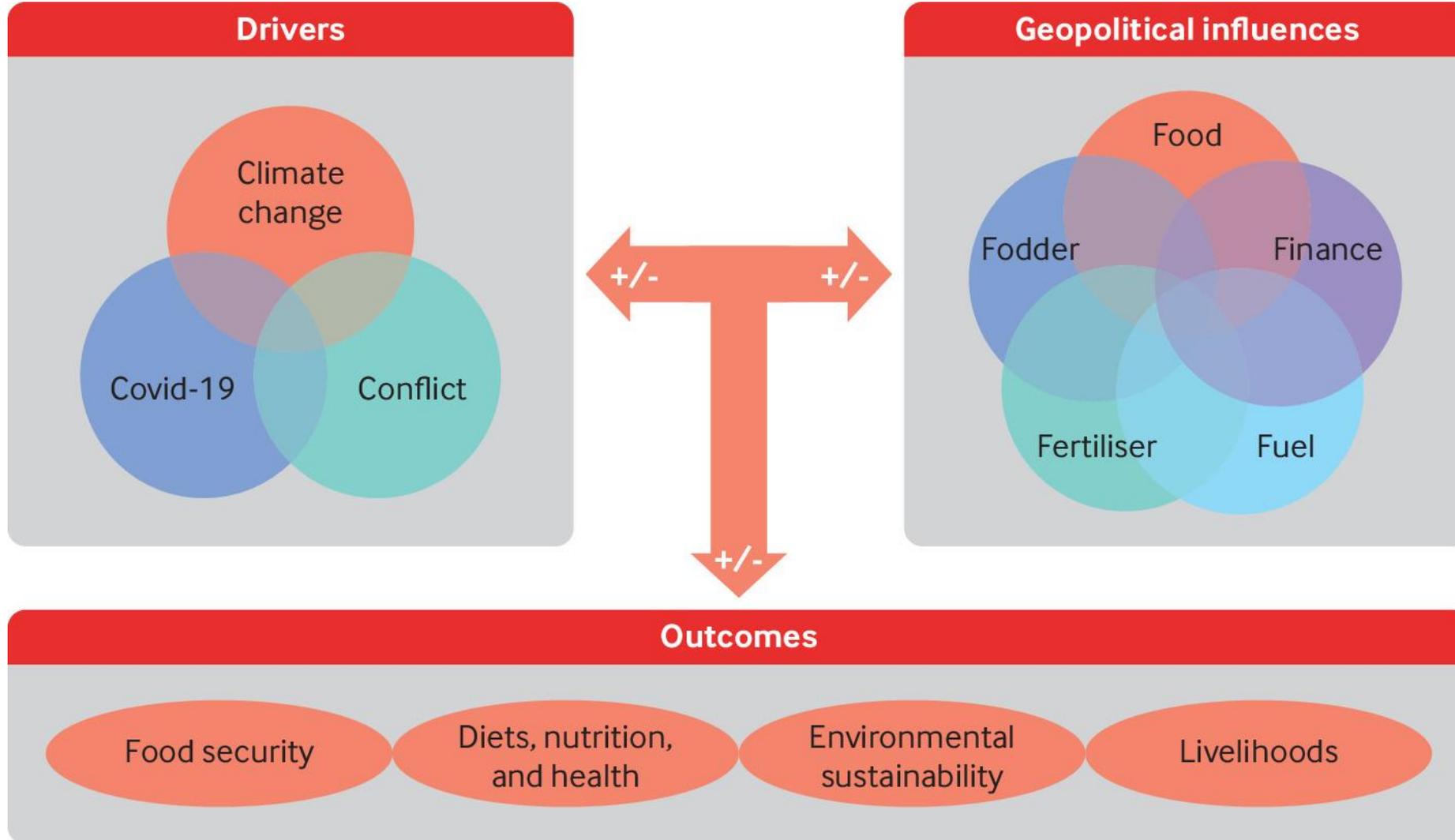
**Case study #2: SPIRE, Baia Mare**

**Place Based Approach: The role of horizontal governance in shaping sustainable development**

**Final Remarks**

**Context**

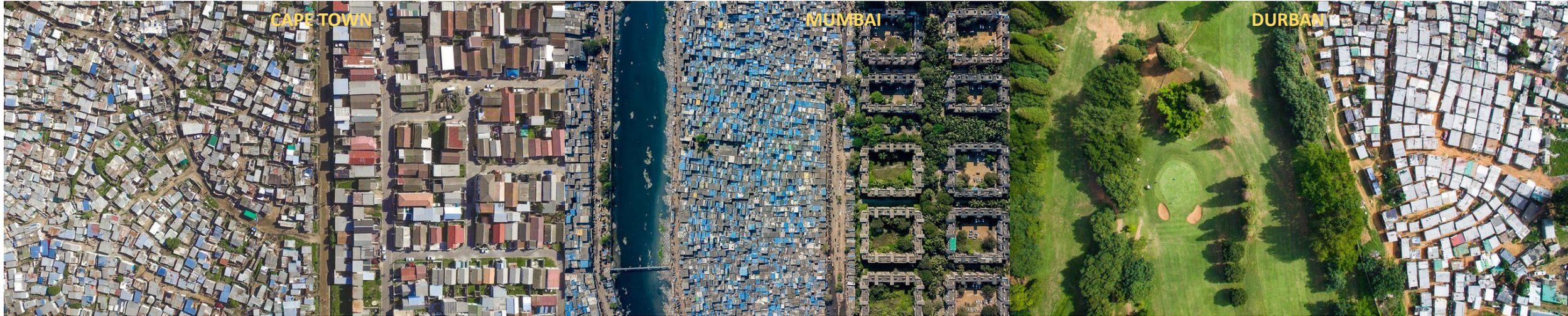
# 3Cs and 5Fs



Environmental climate change threatens food security and nutrition through interconnected impacts on **soil, crop growth, animal survival, and labor productivity.**

Reloading/recontextualizing classic questions:

Have we reached the limits of growth ... of urbanization/through the urbanization?

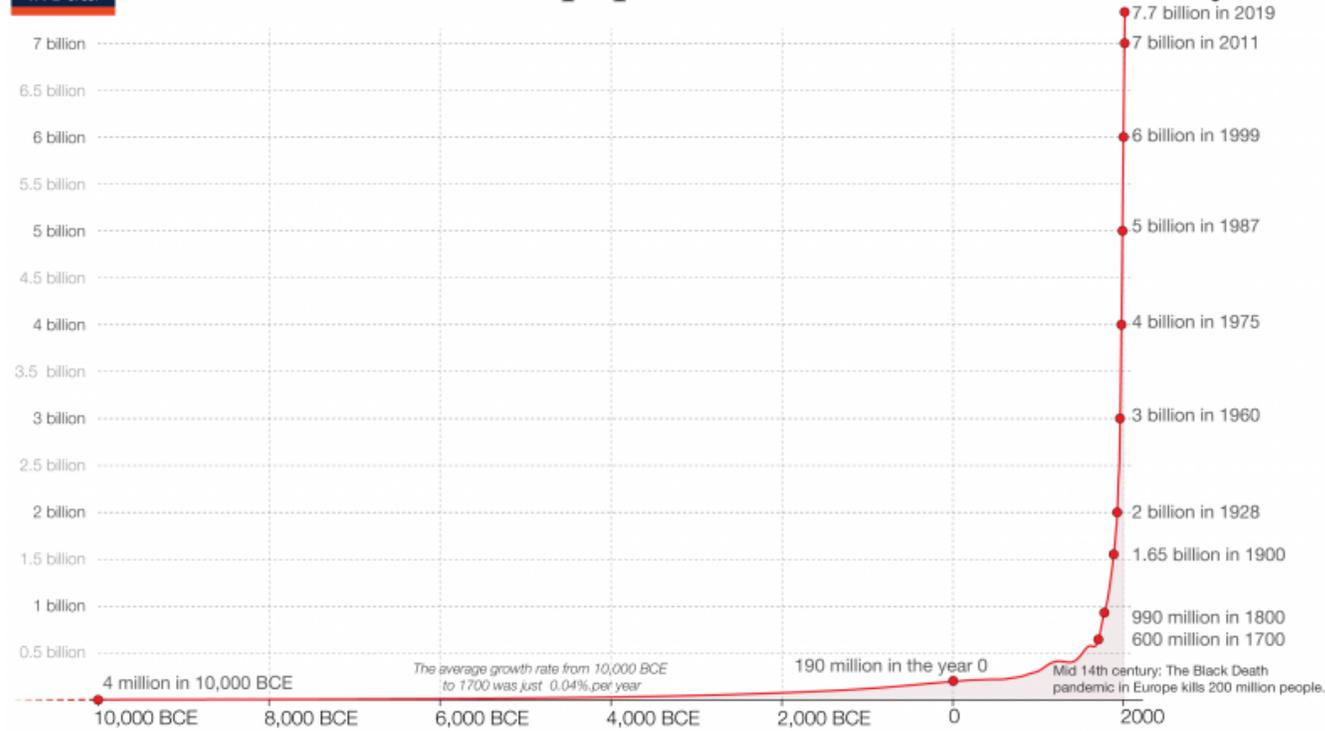


**The annual growth rate of people migrating to urban areas** is 1.63% between 2020 and 2025 and 1.44% between 2025 and 2030

# What is getting out of control, what are the critical points of this urbanization? (I)

The global urban population is expected to grow approximately **1.84%** per year between 2015 and 2020, **1.63%** per year between 2020 and 2025, and **1.44%** per year between 2025 and 2030.

**Our World in Data** The size of the world population over the last 12,000 years



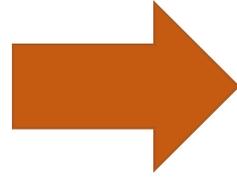
Based on estimates by the History Database of the Global Environment (HYDE) and the United Nations. On OurWorldinData.org you can download the annual data. This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing. Licensed under CC-BY-SA by the author Max Roser.

Year	World Population	WP Yearly Growth Rate	WP Net	WP Density	Urban Population	UP %	UP Yearly Growth Rate
2020	7,794,798,739	0.015	81,330,639	52	4,378,993,944	0.56	0.0163
2021	7896131123	0.013	101,332,384	53	4450371545	0.56	0.0163
2022	7982988565	0.011	86,857,442	54	4522912601	0.57	0.0163
2023	8054835462	0.009	71,846,897	55	4596636077	0.57	0.0163
2024	8119274146	0.008	64,438,684	55	4671561245	0.58	0.0163
2025	8176109065	0.007	56,834,919	56	4747707693	0.58	0.0163
2026	8217807221	0.005	41,698,156	57	4816074684	0.59	0.0144
2027	8247391327	0.004	29,584,106	58	4885426159	0.59	0.0144
2028	8264710849	0.002	17,319,522	59	4955776296	0.60	0.0144
2029	8269669675	0.001	4,958,827	60	5027139475	0.61	0.0144
2030	8269669675	0.000	0	61	5099530283	0.62	0.0144

If growth trends are right, in 2030 the world population growth will stabilize, but already 62% will live in urban areas

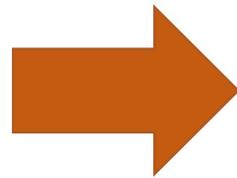
## What is getting out of control, what are the critical points of this urbanization? (II)

This means that the urbanization of around **720 million** people will have to be managed between 2020 and 2030



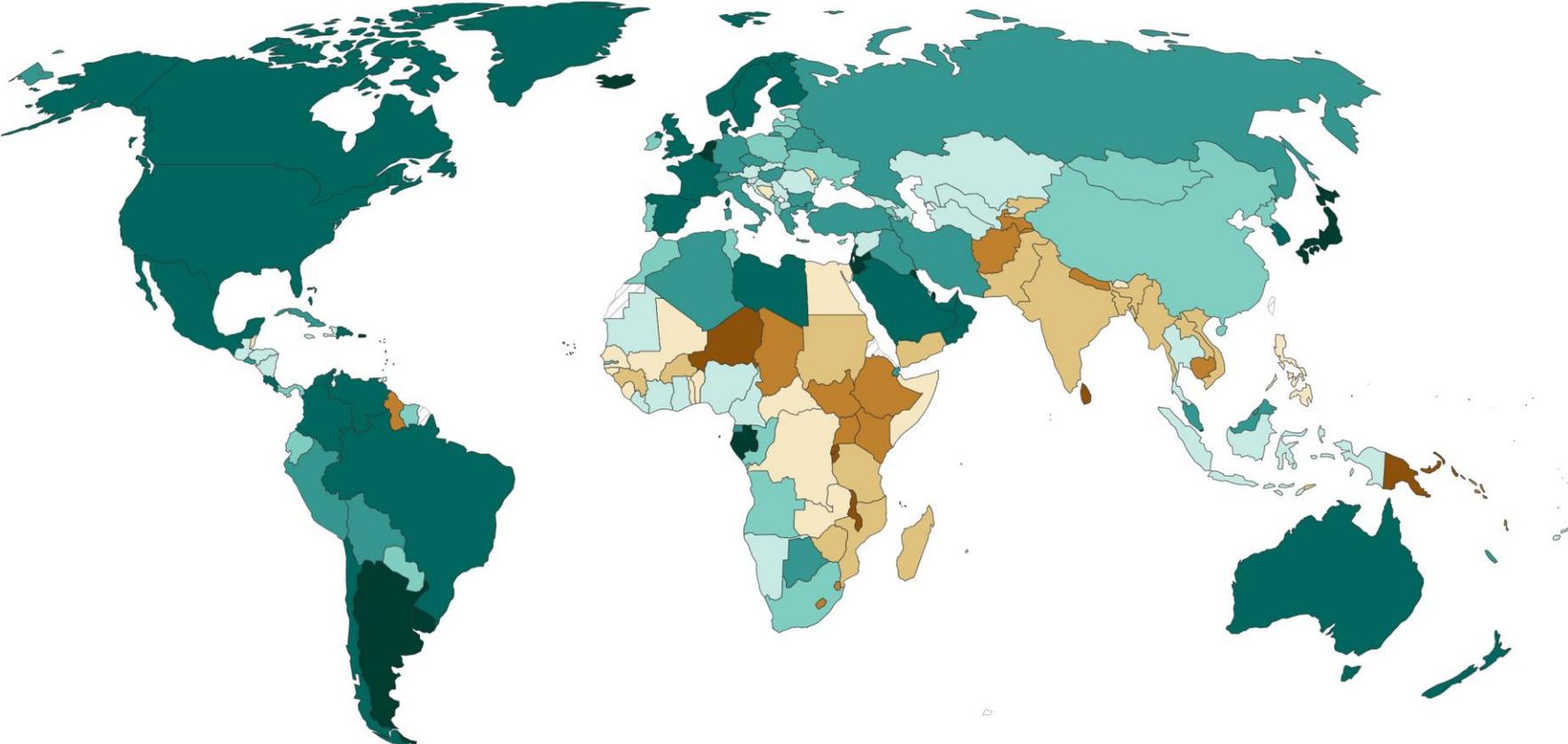
Considering that the metropolitan area of Shanghai (A megacity) has 34 million inhabitants, it would mean about **new 21 megacities** ... as an impact

If we calculate to equip each a new urbanized person with a minimum standard of a room



It means creating an area equal **to 9 times that of Greater London**

# Share of people living in urban areas, 2020

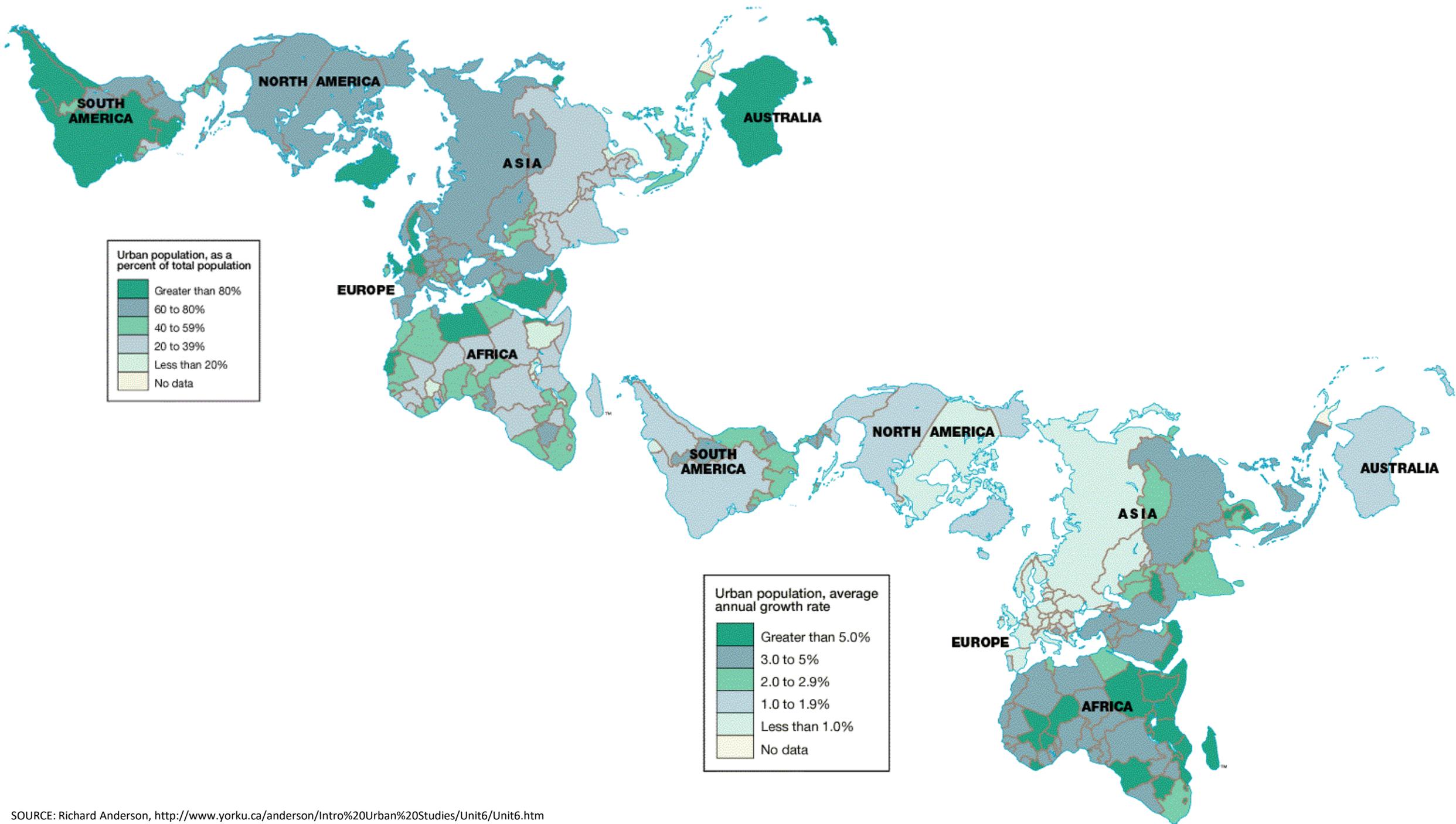


Source: UN Population Division (via World Bank)

OurWorldInData.org/urbanization • CC BY

Note: Urban populations are defined based on the definition of urban areas by national statistical offices.

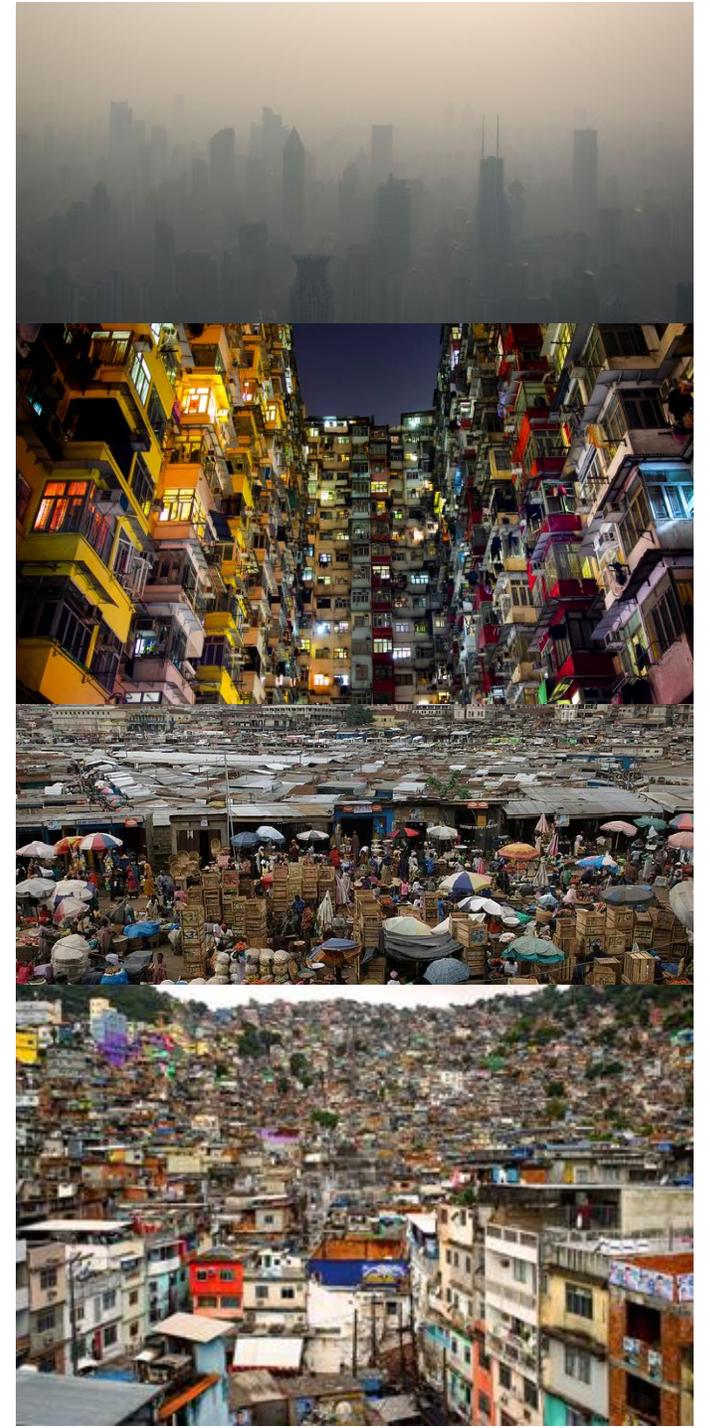




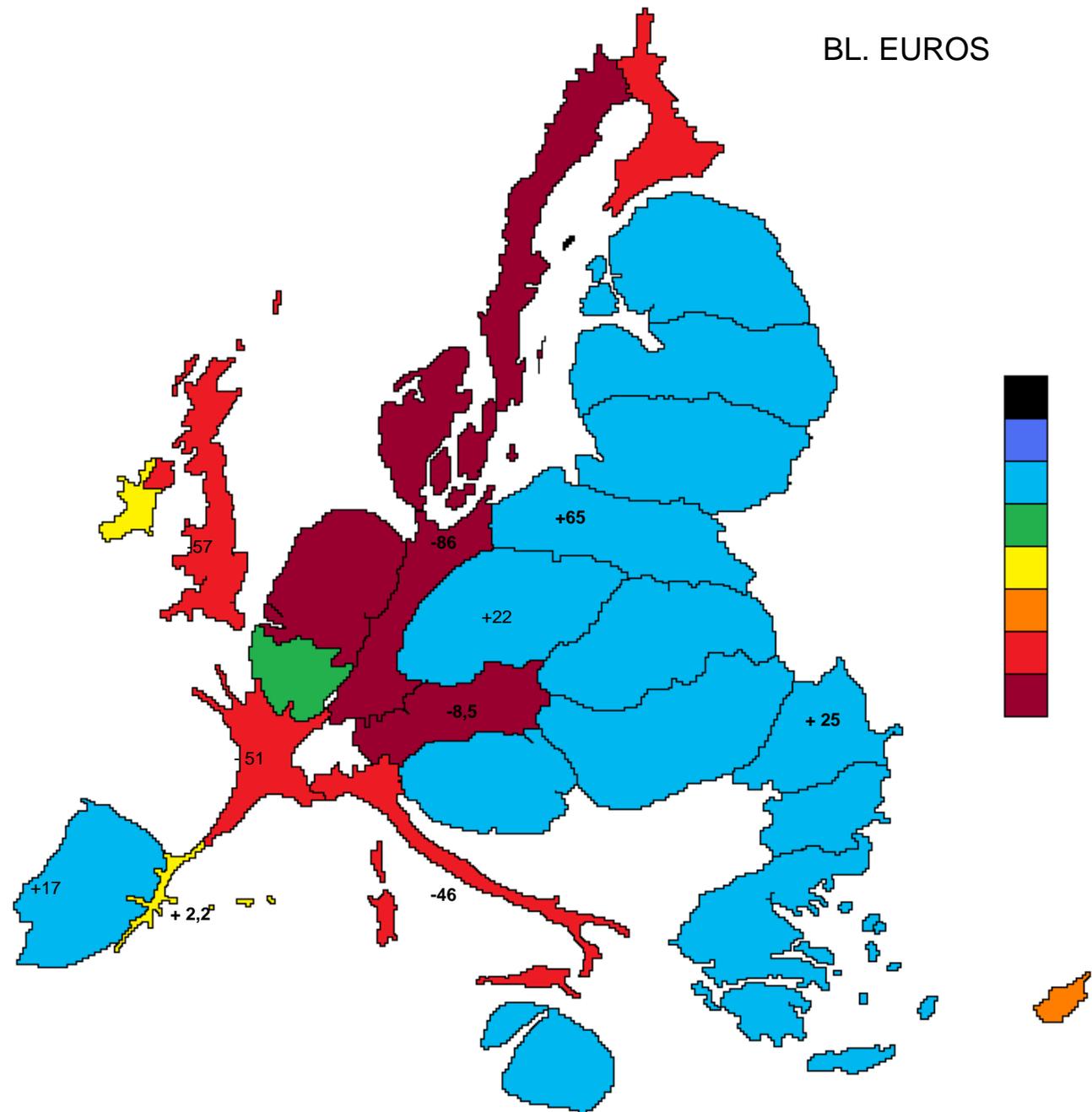
SOURCE: Richard Anderson, <http://www.yorku.ca/anderson/Intro%20Urban%20Studies/Unit6/Unit6.htm>

## CONSEQUENCES OF RAPID URBANISATION

- Rapid urbanization is making people more vulnerable to the **impacts of climate change**. (UN , FCCC, 2017)
- Urbanisation has negative consequences on **health** due mainly to pollution and overcrowded living conditions.
- Intensive urban growth can lead to greater **poverty**, with local governments unable to provide services for all people.
- Rapid housing construction leads to **overcrowding and slums**, which experience major problems such as poverty, poor sanitation, unemployment and high crime rates.

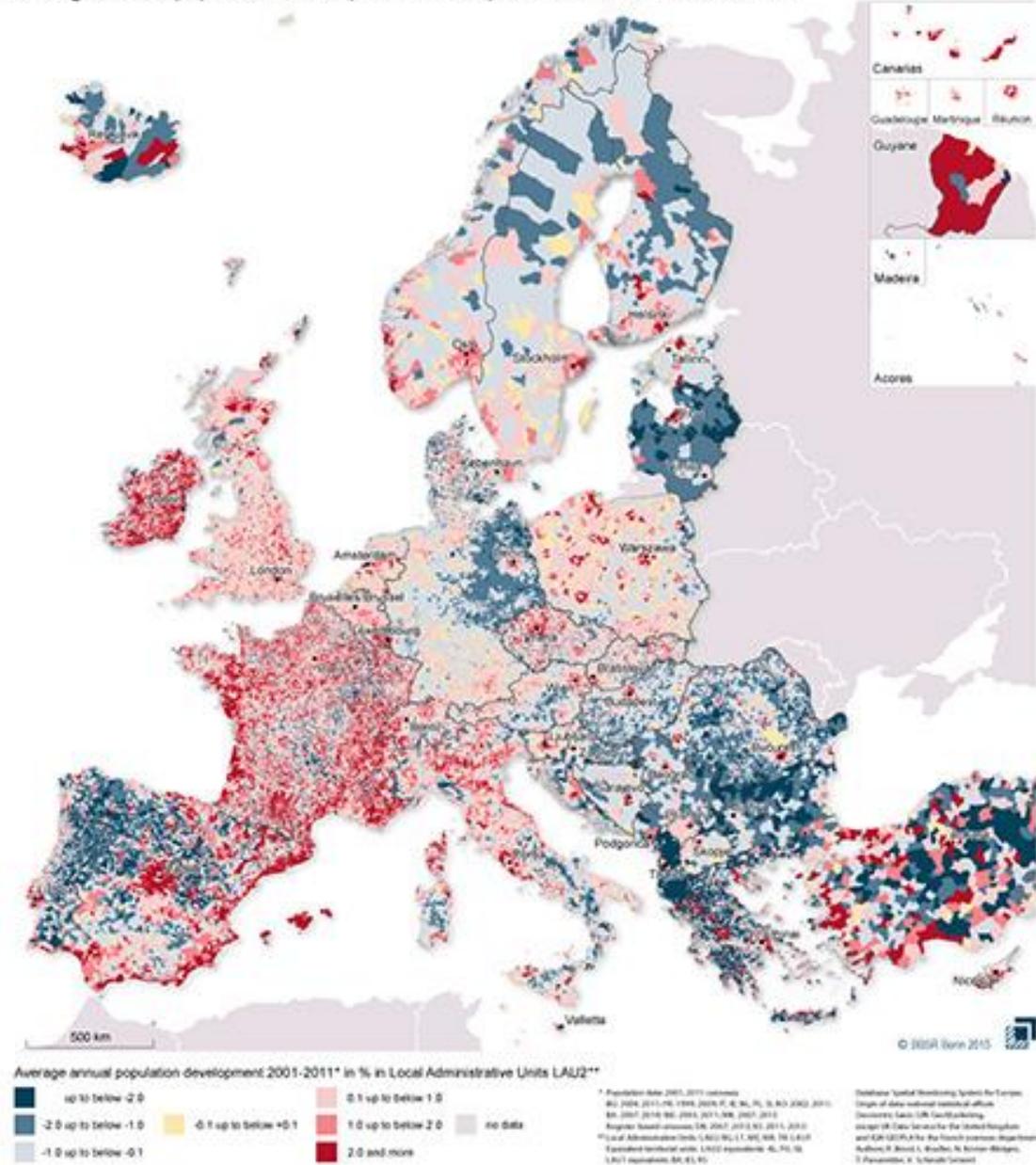


# BL. EUROS



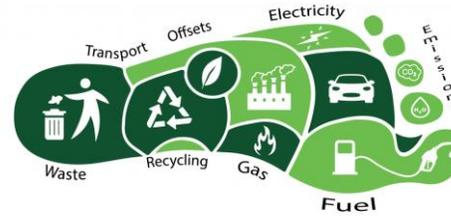
SOURCE: OPEN EUROPE

# Average annual population development in European Local Administrative Units



SOURCE: BBSR EUROPE

## A SECOND STEP OUT TO FACE THE 3Cs



A second point to be addressed for urban planning is systematically

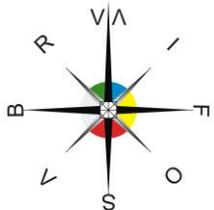
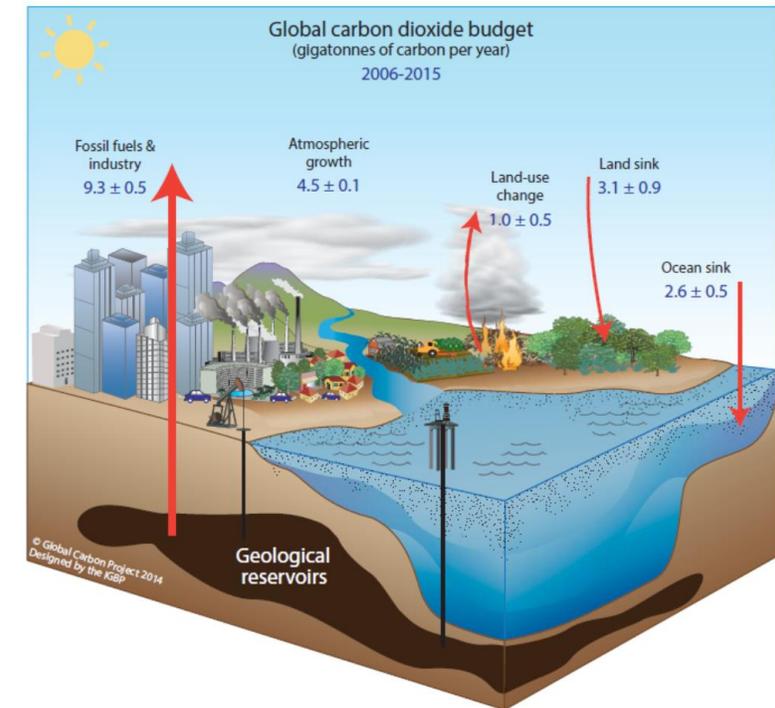
*considering climate change related issues in every normative or strategic plan and in the design of every kind of urban policies:*

**CLIMATE MITIGATION** is any action taken to permanently eliminate or reduce the long-term risk and hazards of climate change to human life, property.

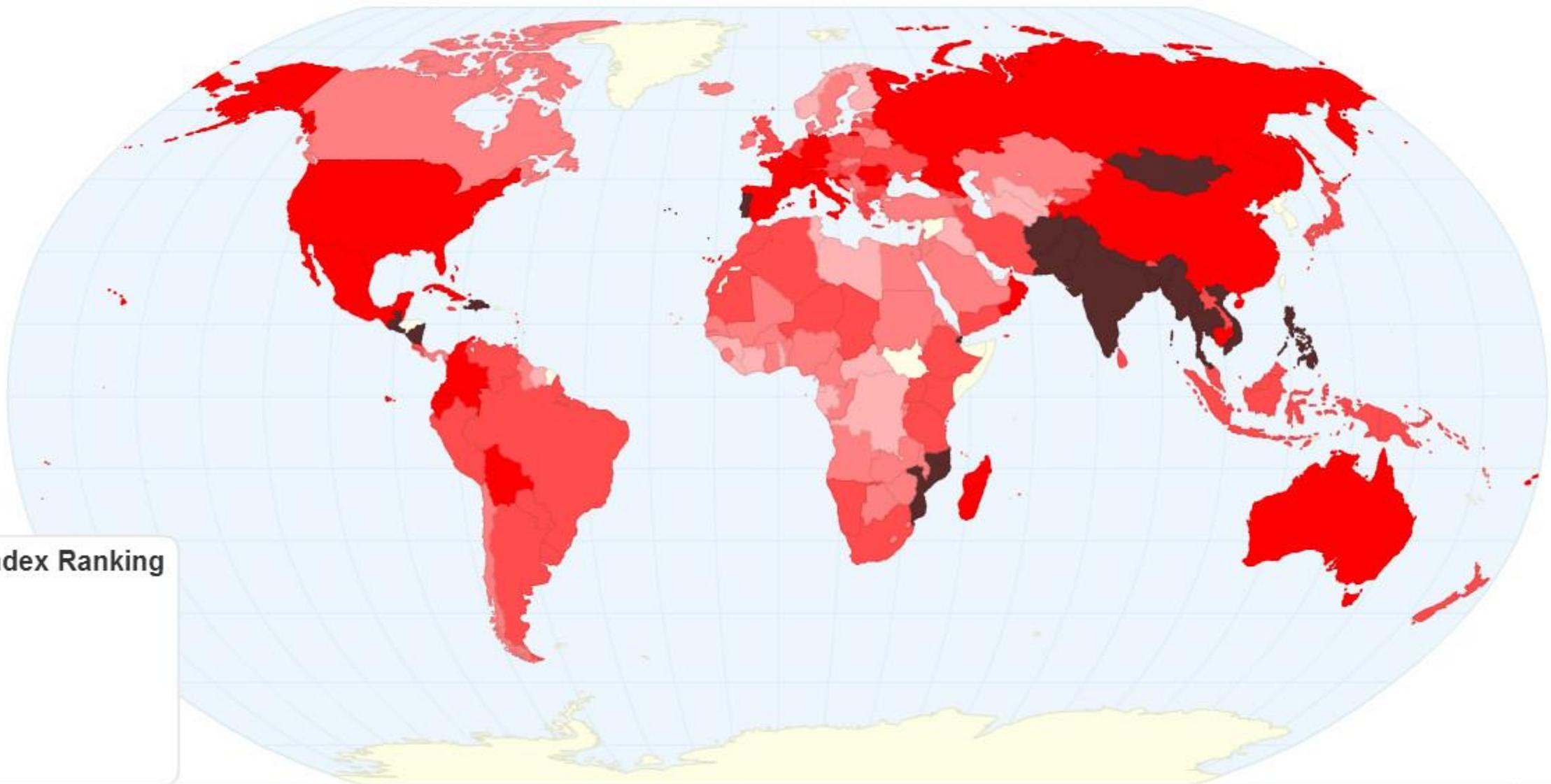
**CLIMATE ADAPTATION** refers to the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damage, to take advantage of opportunities, or to cope with the consequences.

CLIMATE CHANGE AND ENERGY USE RELATED ISSUES ARE FACED AT CITIES SCALE

Urban activities have strong impacts on natural ecosystems going beyond city's borders, they have enormous ecological footprints. They are even the places where more relevant is the impact of natural risks/hazards.



# Global Climate Risk Index



**Climate Risk Index Ranking**

- 1-20
- 20-50
- 50-100
- 100-150
- 150-178

# CITIES IMPACT ON CLIMATE CHANGE

- Cities are responsible for **between 30% to 70%** of global greenhouse gas emissions (Satterthwaite2008)
- and **consume roughly 60% of the world's energy** (Van der Hoeven 2012).
- the projected impacts of climate change show that **urban populations and infrastructure around the world are at significant risk** (Carmin, Nadkarni, and Rhie 2012, Hunt and Watkiss 2011, IPCC 2014).
- Finally, CITIES have emerged as IMPORTANT PLAYERS in global efforts:
  - to mitigate greenhouse gas emissions and
  - to enact adaptive policies to protect both people and assets.

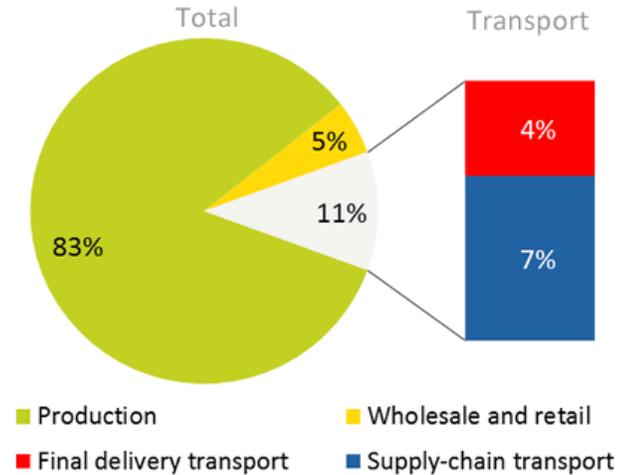


when knowledge gives directions

SOURCE: MIT – ICLEI, Progress and Challenges in the Results of a Global Survey Urban Governance of Climate Change

<https://ddpoultry.ca/green-wholesale-chicken/>

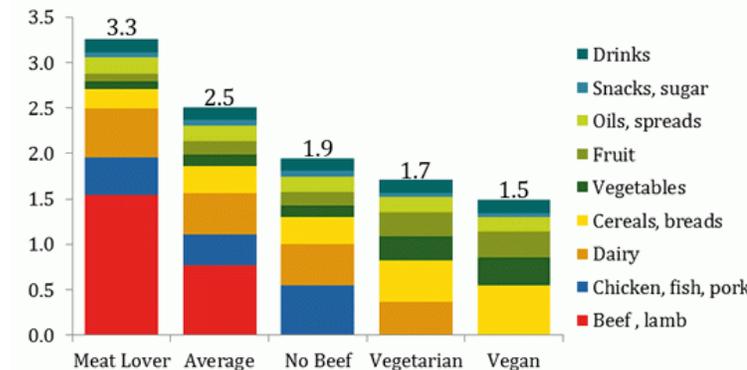
## Food Emissions Breakdown (%)



Source: Weber and Matthews 2008



## Foodprints by Diet Type: t CO<sub>2</sub>e/person



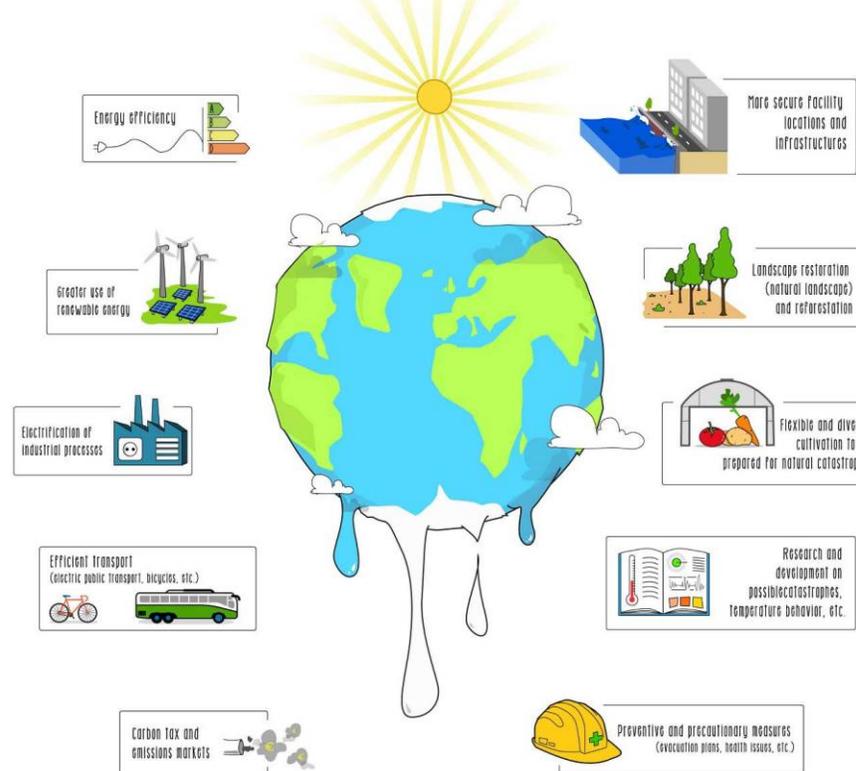
Note: All estimates based on average food production emissions for the US. Footprints include emissions from supply chain losses, consumer waste and consumption. Each of the four example diets is based on 2,600 kcal of food consumed per day, which in the US equates to around 3,900 kcal of supplied food.

Sources: ERS/USDA, various LCA and EIO-LCA data



# Mitigation and adaptation to climate change

**MITIGATION** < > **ADAPTATION**  
 Actions to reduce and curb greenhouse gas emissions      Actions to reduce vulnerability to climate change



Mitigation attends to the causes of climate change and adaptation addresses its impacts

- Practice Energy efficiency
- Greater use of renewable energy
- Electrification of industrial processes
- Efficient means of transport implementation: electric public transport, bicycle, shared cars ...
- Carbon tax and emissions markets

- More secure facility locations and infrastructures
- Landscape restoration (natural landscape) and reforestation
- Flexible and diverse cultivation to be prepared for natural catastrophes
- Research and development on possible catastrophes, temperature behavior, etc.
- Preventive and precautionary measures (evacuation plans, health issues, etc.)

## Global Warming Potential and Atmospheric Lifetime for Major Greenhouse Gases

Greenhouse gas	Chemical formula	Global Warming Potential, 100-year time horizon	Atmospheric Lifetime (years)
Carbon Dioxide	CO <sub>2</sub>	1	100*
Methane	CH <sub>4</sub>	25	12
Nitrous Oxide	NO	265	121
Chlorofluorocarbon-12 (CFC-12)	CCl <sub>2</sub> F <sub>2</sub>	10,200	100
Hydrofluorocarbon-23 (HFC-23)	CHF <sub>3</sub>	12,400	222
Sulfur Hexafluoride	SF <sub>6</sub>	23,500	3,200
Nitrogen Trifluoride	NF <sub>3</sub>	16,100	500

### SOURCE

Fifth Assessment Report (Intergovernmental Panel on Climate Change, 2014).

**The Global Warming Potential (GWP)** was developed to allow comparisons of the global warming impacts of different gases.

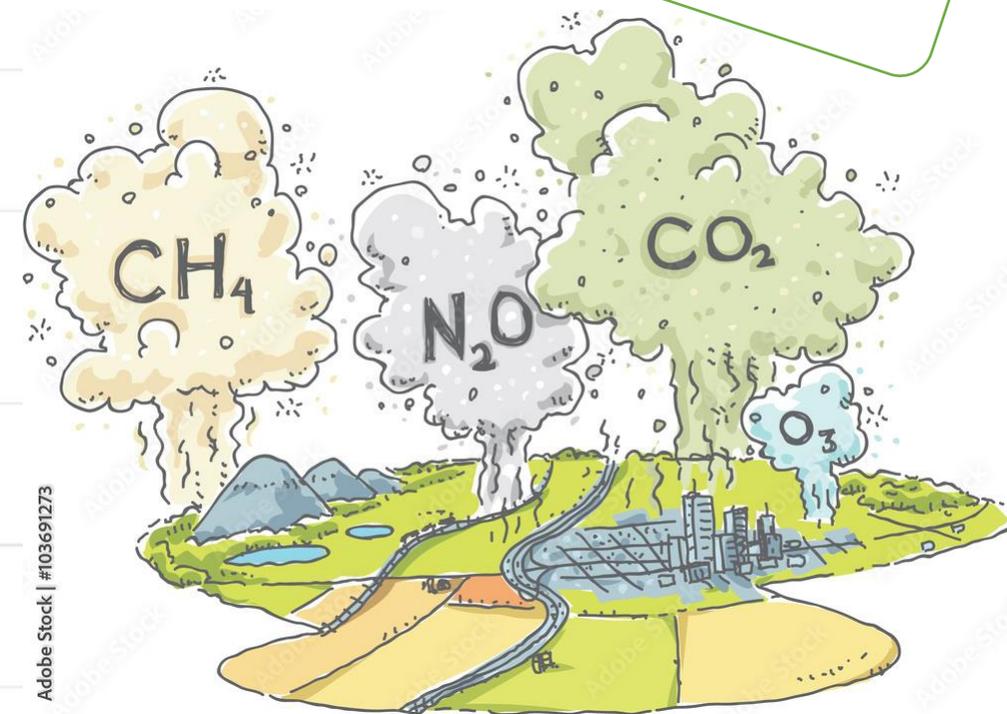
Specifically, **it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time**, relative to the emissions of 1 ton of carbon dioxide (CO<sub>2</sub>).

**The larger the GWP, the more that a given gas warms the Earth** compared to CO<sub>2</sub> over that time period.



Greenhouse gas	Major sources	Pre-industrial concentration (ppb)	2011 concentration (ppb)
Carbon Dioxide	Fossil fuel combustion; Deforestation; Cement production	278,000	390,000
Methane	Fossil fuel production; Agriculture; Landfills	722	1,803
Nitrous Oxide	Fertilizer application; Fossil fuel and biomass combustion; Industrial processes	271	324
Chlorofluorocarbon-12 (CFC-12)	Refrigerants	0	0.527
Hydrofluorocarbon-23 (HFC-23)	Refrigerants	0	0.024
Sulfur Hexafluoride	Electricity transmission	0	0.0073
Nitrogen Trifluoride	Semiconductor manufacturing	0	0.00086

**SIAMO NELL' ANTROPOCENE**



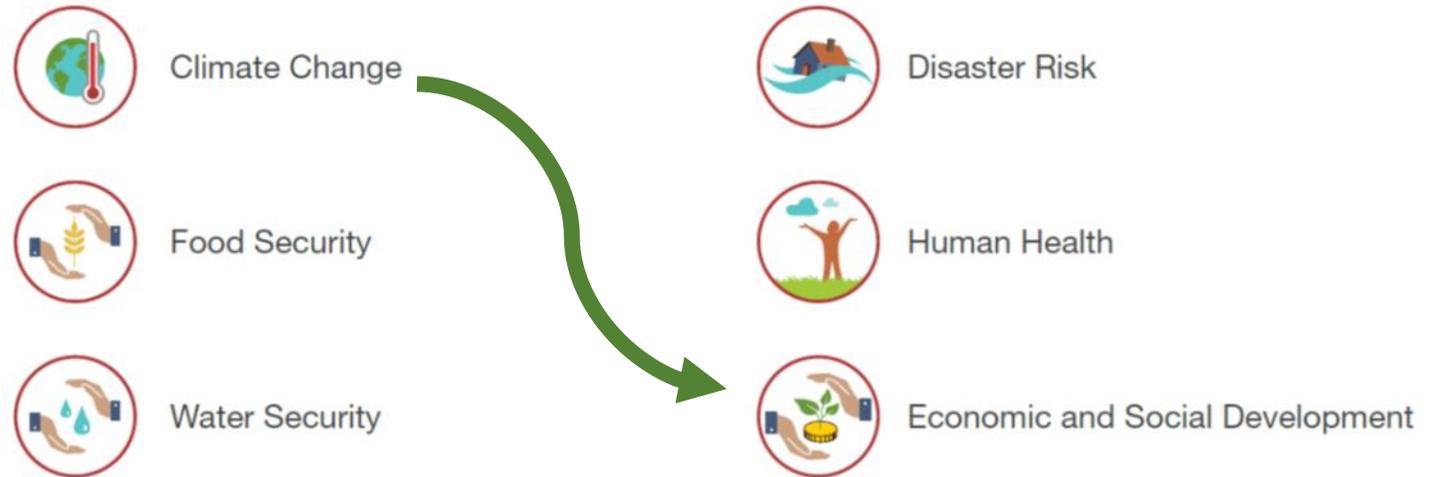
# **Nature Based Solutions: An overview**

# Nature Based Solutions and Societal Challenges

NBS is best considered an umbrella concept that covers a range of different approaches.

These approaches have emerged from a variety of spheres (some from the scientific research domain, others from practice or policy contexts) but share a common focus on

- ecosystem services and
- aim to address societal challenges.



# KNOWLEDGE AND EXPERIENCE REQUIRED TO WORK WITH NBS

APPLYING NATURE-BASED SOLUTIONS INVOLVES HAVING KNOWLEDGE FROM SEVERAL DISCIPLINES

AT LEAST:

1. Soil and Water Bioengineering
2. Air Quality Expertise
3. Renewable Energy Engineering
4. Economy and Finance
5. Urban Planners and Architects
6. Experts in Governance and Policy Design



# CLASSIFYING NATURE BASED SOLUTIONS

**TYPE 1 - no or minimal intervention in ecosystems** - The objective of the action is **to maintain or boost the effects of certain ecosystem services in already existing natural or weakly managed ecosystems**. This type of NBS promotes better use of natural/protected ecosystems, implying the delivery of multiple ecosystem services to multiple stakeholder groups.

**TYPE 2 - NBS for sustainability and multi-functionality of managed ecosystems** - Effective management towards the sustainability and multifunctionality of ecosystems and landscapes so as **to support selected ecosystem services**. This type of NBS implies an increased provision of fewer ecosystem services to fewer stakeholders' groups.

**TYPE 3 - Design and management of new ecosystems** - A more transformational “intrusive” approach that is often connected to the **creation of new ecosystems**. Restoration of degraded ecosystems falls under this type. This type of NBS includes the design and management of new ecosystems, seeking to maximise the delivery of key ecosystem services for key stakeholder groups.

**PROTECTING/BOOSTING – REINFORCING/EMPOWERING – RECOVERING/REVITALISING**

# CLASSIFYING NATURE BASED SOLUTIONS

## **Type 1 – Better use of protected/natural ecosystems**

1. Protection and conservation strategies in terrestrial (e.g. Natura2000),
2. Marine (e.g. MPA), and coastal areas (e.g. mangroves) ecosystems

MINIMAL INTERVENTION

## **Type 2 – NBS for sustainability and multifunctionality of managed ecosystems**

1. Agricultural landscape management
2. Coastal landscape management
3. Extensive urban green space management
4. Monitoring

IMPLEMENTING SUSTAINABLE  
AND MULTIFUNCTIONAL  
ECOSYSTEMS AND LANDSCAPES

## **Type 3 – Design and management of new ecosystems**

1. Intensive urban green space management
2. Urban planning strategies
3. Urban water management
4. Ecological restoration of degraded terrestrial ecosystems
5. Restoration and creation of semi-natural water bodies and hydrographic networks
6. Ecological restoration of degraded coastal and marine ecosystems

INTRUSIVE APPROACH,  
CREATING NEW ECOSYSTEMS

SOURCE: [https://www.researchgate.net/publication/315481005\\_Nature-based\\_solutions\\_new\\_influence\\_for\\_environmental\\_management\\_and\\_research\\_in\\_Europe](https://www.researchgate.net/publication/315481005_Nature-based_solutions_new_influence_for_environmental_management_and_research_in_Europe)

SOURCE: [https://platform.think-nature.eu/system/files/thinknature\\_handbook\\_final\\_print\\_0.pdf](https://platform.think-nature.eu/system/files/thinknature_handbook_final_print_0.pdf)

**Protezione e Rafforzamento – Aumento della Sostenibilità – Recupero e Rigenerazione**

# ECOSYSTEM SERVICES

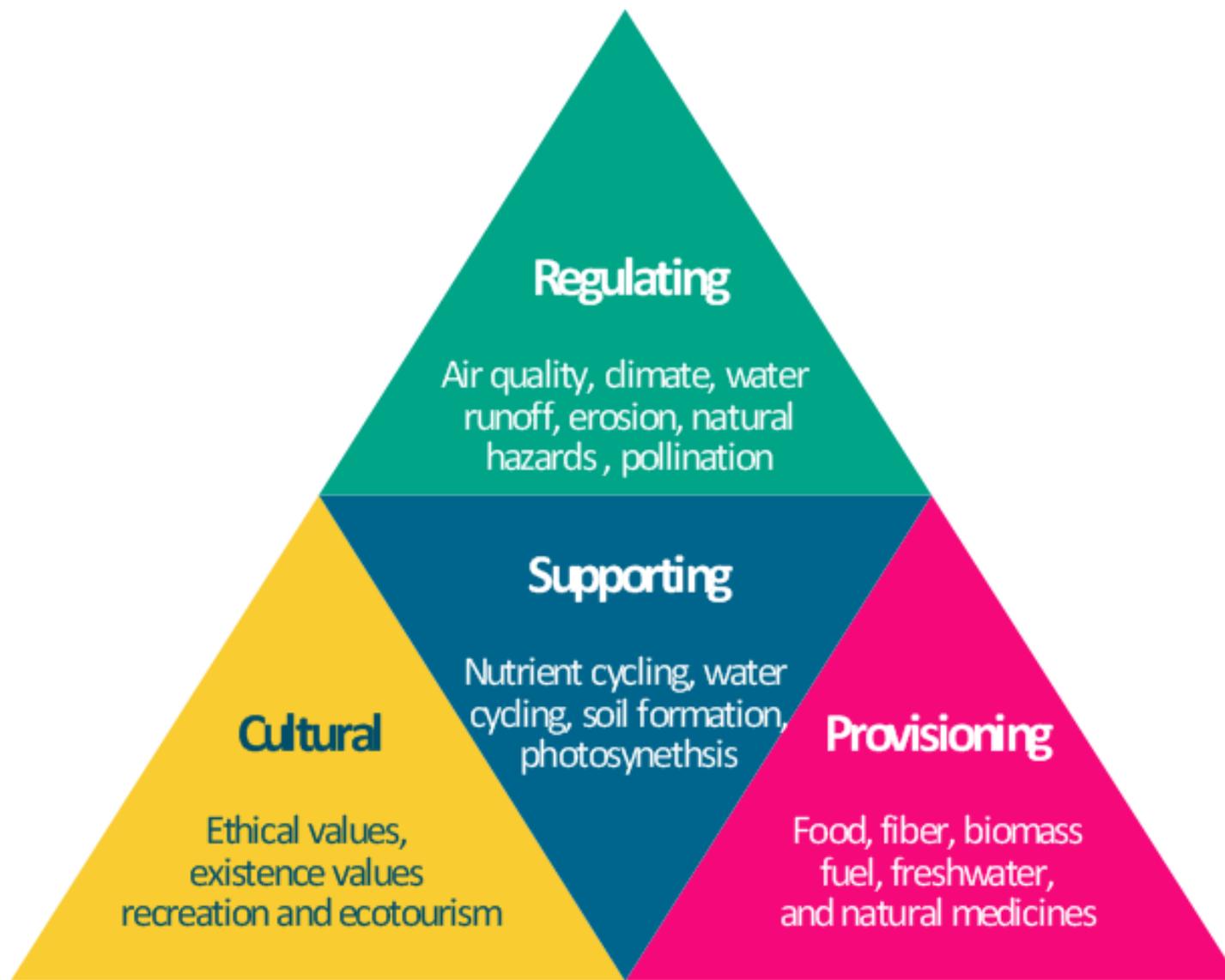
The value of nature to people has long been recognized, but in recent years, the concept of ecosystem services has been developed to describe these various benefits. An ecosystem service is **any positive benefit that wildlife or ecosystems provide to people**. The benefits can be direct or indirect—small or large.

**Regulating services**

**Provisioning services**

**Cultural services**

**Supporting services**



### **Regulating**

Air quality, climate, water runoff, erosion, natural hazards, pollination

### **Supporting**

Nutrient cycling, water cycling, soil formation, photosynthesis

### **Cultural**

Ethical values, existence values, recreation and ecotourism

### **Provisioning**

Food, fiber, biomass, fuel, freshwater, and natural medicines



## **Case study #1: MAC, Pozzuoli**



## MAC: Monterusciello Agro City



The **MAC** project is seeking to reduce urban poverty in the neighbourhood of Monterusciello, where poverty is understood in the social and economic sense and within the physical environment.

Monterusciello is a new public housing district with 40,000 residents with low-income, a high level of unemployment, and characterised by large unused spaces.

# GGONO DA POZZUOLI CHE TRE

ti, 60 scosse (una di 5°). Una frana, palazzi lesionati, calc  
il panico 30 contusi. Danneggiata la sede della Protezione

## FARE

SSO per la fasci  
a terra fiegrea.  
a di miti dell'anti  
ca e dell'operosità  
la sua gente, i  
ni della paura e  
sono diventati i  
orrore e della rab  
diventati i giorni  
are?». Un «che  
uale bisogna asso  
presto, cancella  
interrogativo. Già  
o aver vissuto per  
scossa in casa, co  
essere fiaccati da  
ra estenuante -  
miveglia da incu  
cipite abbandonano  
ni quotidiani

- Pozzuoli ore 13.32. Dopo uno sciame di scosse (la sequenza sismica dell'intera giornata ne registrerà 60), un boato annuncia il sussulto più grave, quinto grado della scala Mercalli.
- È subito caos. Rete elettrica e telefoni in tilt. La gente si precipita nelle strade, trenta contusi nelle resse per guadagnare le uscite dai palazzi.
- Il panico alimenta le prime notizie di crolli e catastrofi. Saranno smentite dalle prime verifiche: ma il bilancio delle lesioni ai fabbricati resta pesante. Il terremoto ha colpito vecchie costruzioni anche nei centri limitrofi: Agnano, Quarto, Bagnoli e Bacoli. Una frana sotto monte S. Angelo.
- Tensione e angoscia anche all'ospedale e nel carcere femminile che è stato sgomberato. C'è gente che organizza la fuga verso sistemazioni provvisorie, presso familiari un migliaio di persone invadono il campeggio di Licola, solo 400 trovano posto penetrando nei bungalow e nelle 50 roulotte; molti organizzano campeggi sui lati delle strade con tende di fortuna.
- Il terrore si trasforma in rabbia. La folla devasta gli uffici della Protezione civile e del centro operativo comunale.
- Ordinanza di sgombero immediato per quattro edifici lesionati.
- Il ministro Scotti, in stretto collegamento con tutti gli enti responsabili, segue la situazione e coordina i primi interventi. Pre-disposto l'invio immediato di tende per 700 posti-letto. In un'intervista al nostro giornale, il ministro assicura: «La mobilitazione è stata immediata. Almeno non si sono ravvisati i motivi per far scattare il piano di sgombero. Sono ore difficili: dobbiamo superare il primo giudizio sul



Monterusciello represents a case of urban poverty induced by a natural disaster: the bradyseism of 1983 which shocked and drastically changed the lives of citizens residing in the historic center of Pozzuoli.

# CONTEXT

## Project in numbers

1/4

of Pozzuoli inhabitants live in the district of Monteruscello

40%

of people living in Monteruscello are less than 30 years old

50%

Unemployment rate for young people in Monteruscello

50 hectares

of public unsealed soils in Monteruscello are sadly abandoned

60%

of them will be regenerated with permaculture techniques

EUR 3,999,996.68

Total ERDF budget granted



## Schede Partner

Clicca il partner di interesse per visualizzare la scheda

Comune di Pozzuoli	
Università degli Studi di Salerno	
Coldiretti Napoli	
Confagricoltura Napoli	
Agrocultura	
APS L'Iniziativa	

FORMIT



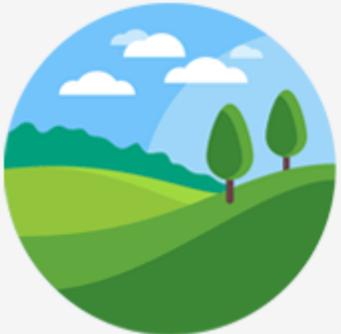




TO FIGURE OUT



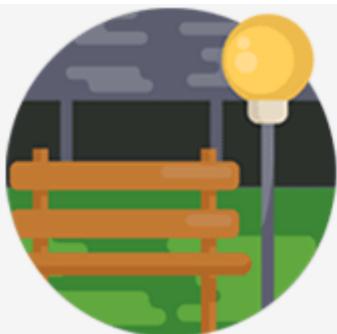




**AGRICOLTURA**

**AGRICULTURE**

**MAC Monterusciello Agro City**



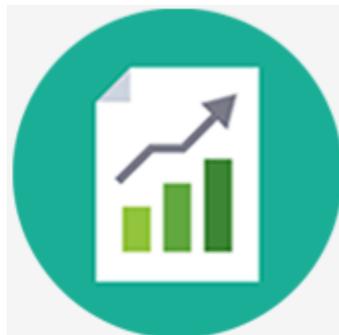
**AMBIENTE URBANO**

**URBAN ENVIRONMENT**



**FORMAZIONE**

**TRAINING**



**IMPRENDITORIALITA'**

**ENTREPRENEURSHIP**

<https://www.macpozzuoli.eu/>

# METHODOLOGICAL APPROACH

**A METHODOLOGICAL APPROACH based on a real integrated territorial and economic perspective to UA.**

- **Classic land use enhancement actions** (changes of function to facilitate new lines of development based on urban agriculture),
- **Requalification of urban planning standards** (amenities and facilities are refurbished and reactivated),
- **Implementation of capacity building initiatives** (especially addressed to the young segments of the population, where unemployment is strongly impacting),
- **Involvement of the local community** in defining critical planning choices (locally rooting sustainable choices),
- **Creation of an economic development model, partnership between the municipality and private actors** (several of them are partners of the UIA initiative too), but also the search for mainstreaming funds, to make the project sustainable after the UIA period.

# AD HOC TOOLS

The creation of AD HOC TOOLS to facilitate dialogue with the local community and its involvement in the ongoing transformation process, both in decision-making and productive terms:

- **Agro Urban Center** (A community centre specialised in managing UA-based policies)
- **Agro Urban Forum** (a permanent stakeholder consultation group)
- **Incubator for the enterprises** generated by the recovery of abandoned land
- **Permaculture Permanent Laboratory**
- **Ethical and supportive production Lab**
- **Factory to experiment with innovative techniques and structures related to UA**

# SOLUTIONS

To start a **transformation process of the vacant public land suitable for agricultural use through the application of permaculture** methodology

**Conception of a local cooperativistic approach to the development of a new local and sustainable economy based on UA led by permaculture** approach (training courses, open laboratories) – creating an innovative self-sustaining system able to endogenously develop in the medium and long-term;

**Re-designing and re-qualifying the urban spaces: architectural and urban interventions will provide areas for events, food market, and walkways, constructing the new landscape for an “agro-city”** and creating a new forma urbis through social, technological and agricultural, economic and governance innovation.

**Creation of a local value chain (km 0) for the food produced in the recovered land.**

The local products are going to be used in the local bars and restaurant serving growing demand of tourism and local Neapolitan “movida”.

**Planting of native plants, cereals and vegetables** that were grown in the area before the creation of Monterusciello





# STATE OF PLAY





Covenant of Mayors  
for Climate & Energy  
EUROPE

# STATE OF PLAY

BEFORE



AFTER



BEFORE



AFTER





## Related documents

[Journal no.5](#) (April 2020), The resilience of urban regenerative processes led by urban agriculture

[Journal no.4](#), (April 2019), The Design issues, training and communication, remapping challenges

[Journal no.3](#), (November 2018), The urban context, the sphere of knowledge, the green infrastructure

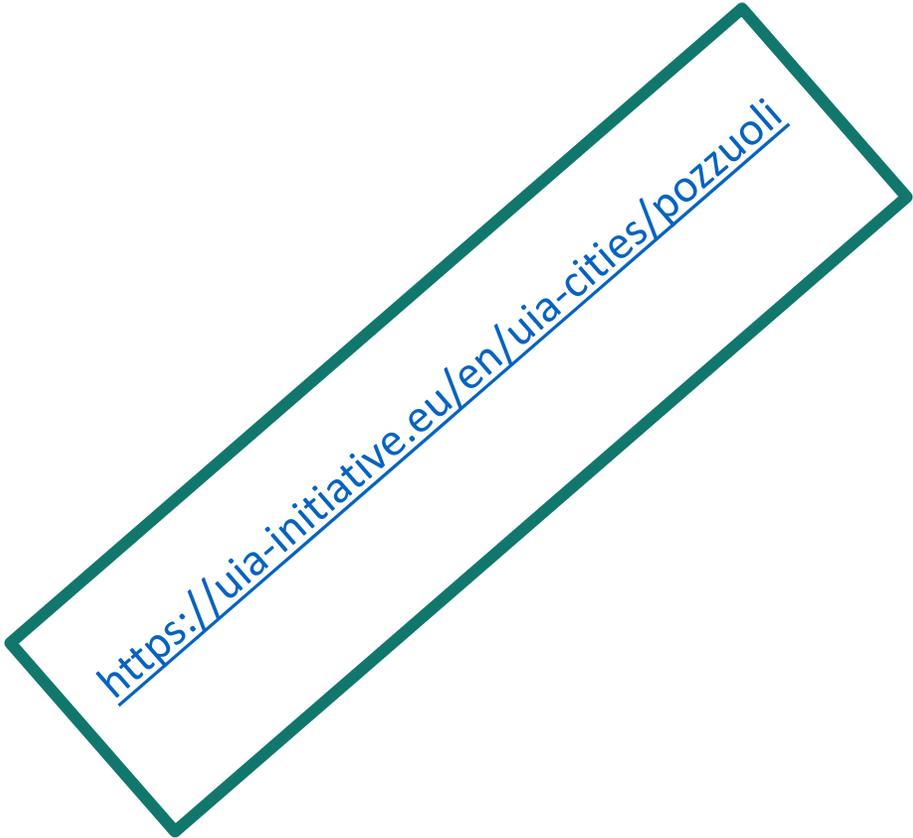
[Journal no.2](#), (April 2018), Open challenges and first achievements

[Journal no.1](#), (December 2017), State of Play, Policy Context and Proposed Solutions

[ZOOM IN no.3](#) (Video, September 2020), Inside the knowledge of the MAC

[ZOOM IN no.2](#), (June 2019), Urban agriculture and urban poverty: A strange couple, but they get along.

[ZOOM IN no.1](#), (video, 2017), Context and ambitions



<https://uia-initiative.eu/en/uia-cities/pozzuoli>

## **Case study #2: SPIRE, Baia Mare**



On the night of January 30, 2000, a dam containing contaminated water erupted in a mine in Bozinta Mare (Baia Mare), Romania, and one hundred thousand cubic meters of cyanide-contaminated water (containing approximately 100 tons of cyanide) was poured over some agricultural land and then into the Someș River. The gold mining company, Aurul, was a joint venture between the Australian company Esmeralda Exploration and the Romanian government. The polluted waters eventually reached the Tisza and then the Danube, killing large numbers of fish in Hungary and Serbia.

**The spill was called the worst environmental disaster in Europe since Chernobyl**





## Sustainable land use management and nature based solutions

- Softer, realistic, affordable remediation.
- Long-term vision with a land hold strategy.
- Re-connecting the blue-greenriver corridor with the urban tissue and the community.
- Ecosystem services, carbon sinks & pollution reduction
- New business models and entrepreneurship opportunities.
- Social cohesion and innvovation.

**UIA Baia Mare • SPIRE**

<http://spire.city/>

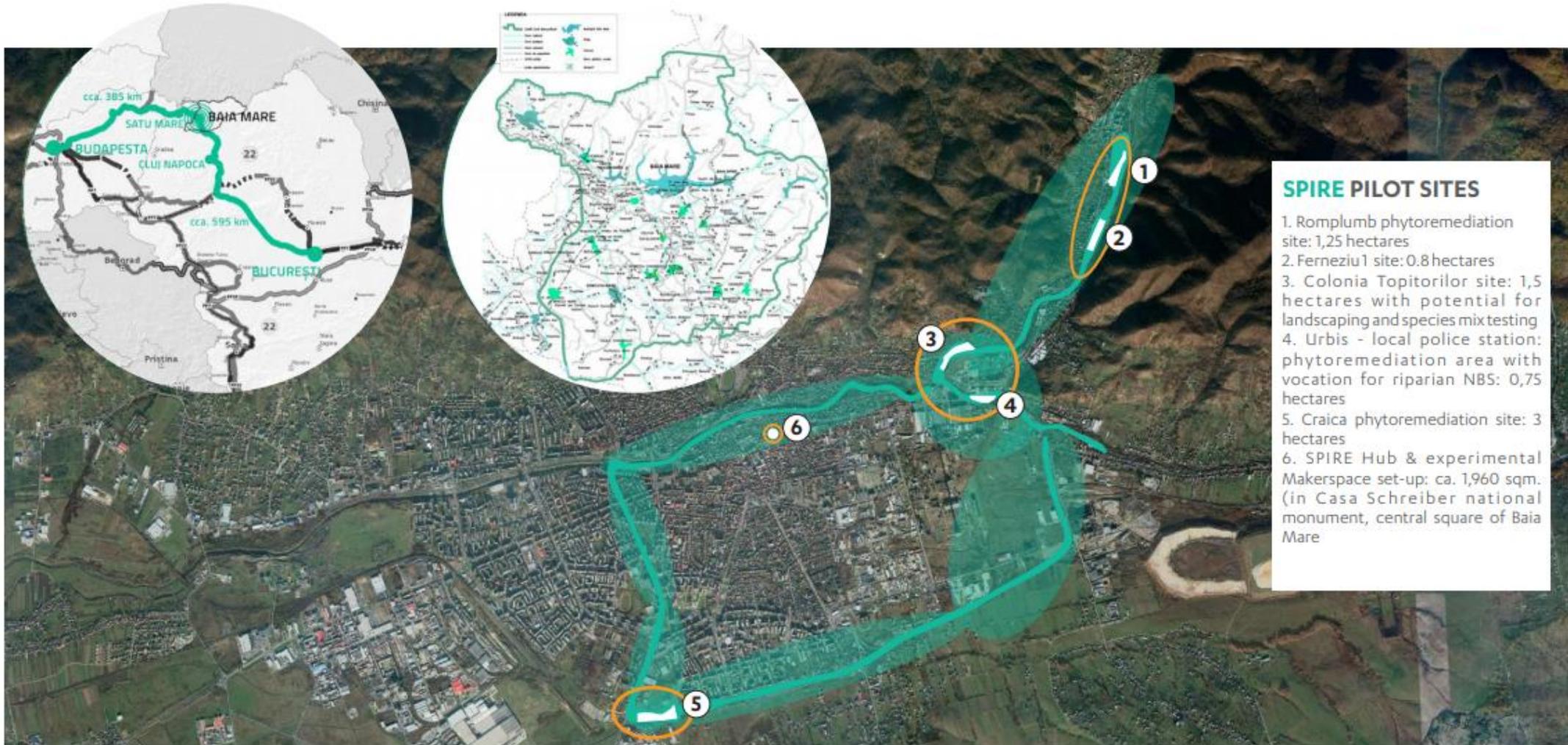
**Smart Post-Industrial  
Regenerative Ecosystem**

## Regenerare Urbana

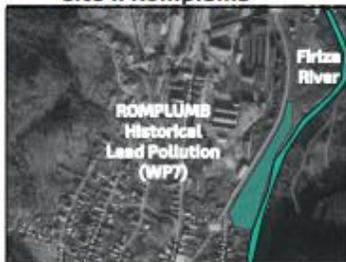


## Orașul verde





Site 1: Romplumb



Site 2: Ferneziu 1



Site 3: Colonia Topitorilor



Site 4: Urbis



Site 5: Craica



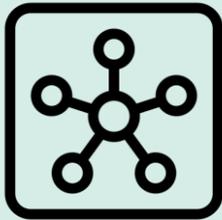
iLEU: immaterial Local Environmental Utility





# 3 pillars

**INFRASTRUCTURE**



**NATURE**



**DIGITAL**

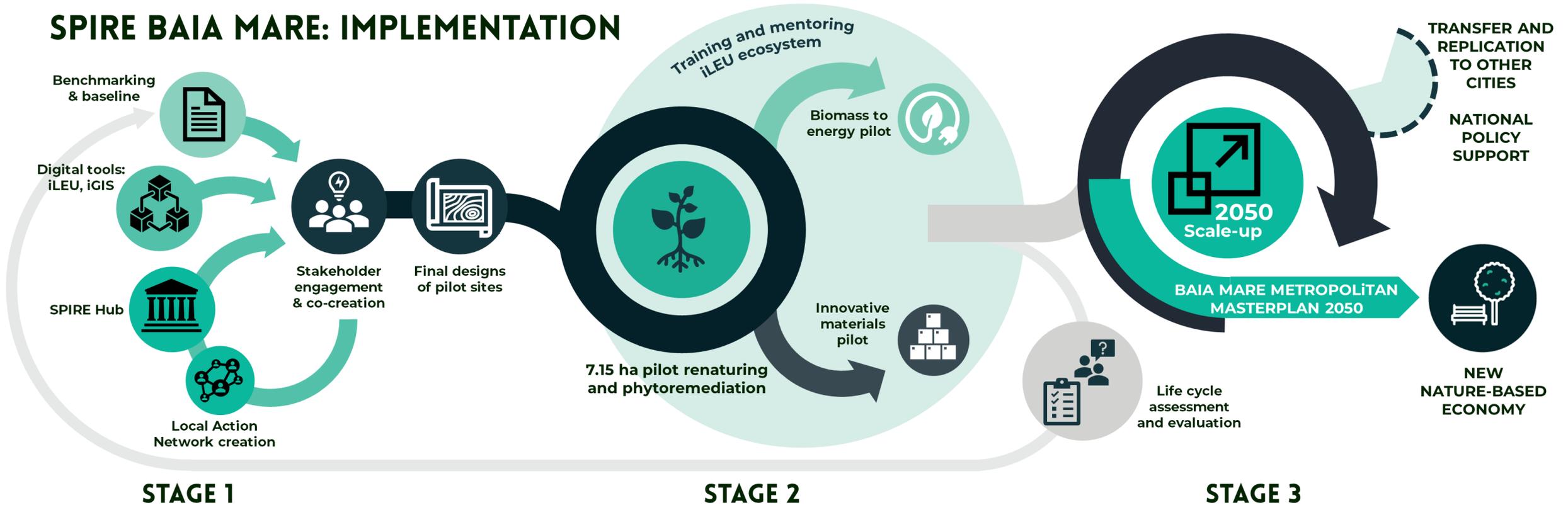


**TRANSVERSAL COMPONENT – COMMUNITY**



# Componente si proces

## SPIRE BAIA MARE: IMPLEMENTATION







# Community -> SPIRE process of co-creation





## Spire Co-creation objectives

- **Co-designed landscape designs**
- **Pilot sites capitalized by locals**
- **On-site co-implemented interventions**
- **Local events – Plantathlons/Harvest Fest**

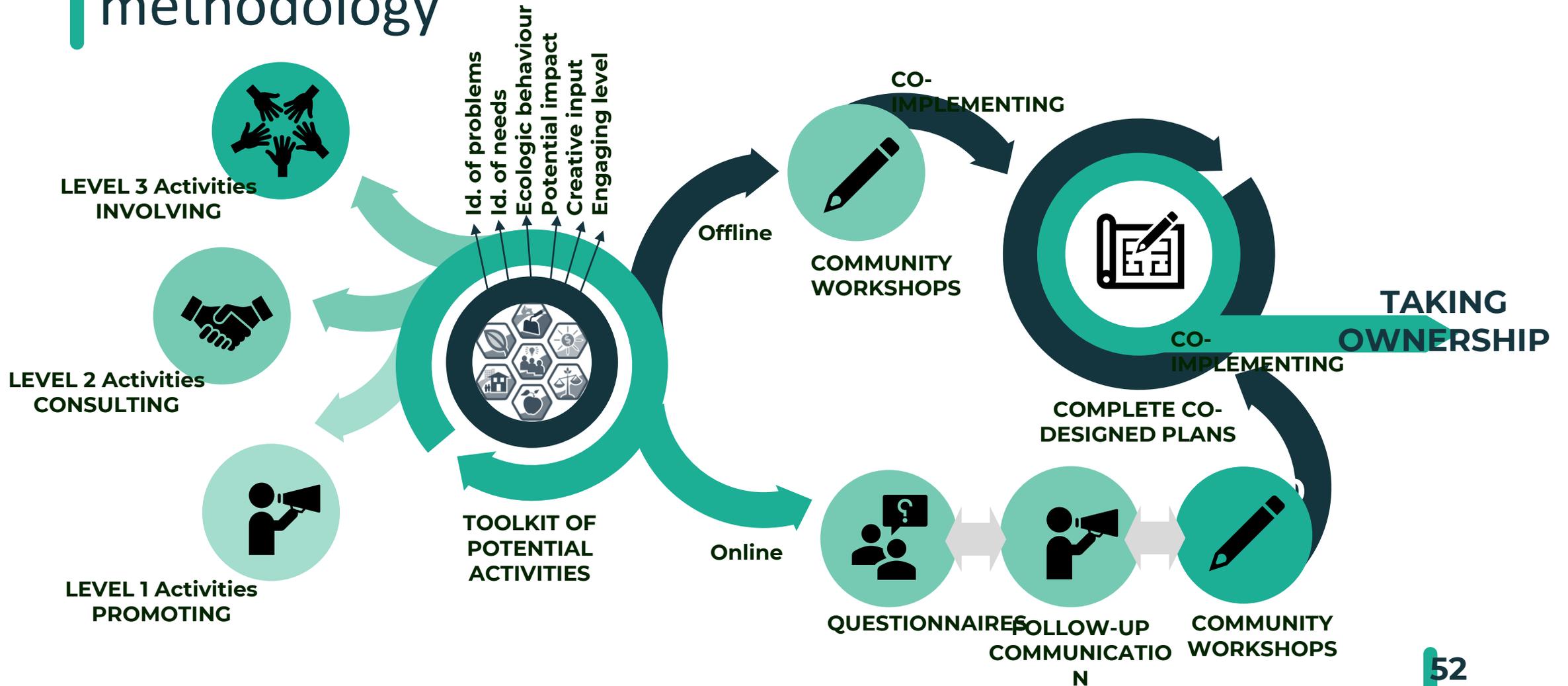


# SPIRE Co-creation principles

- **Gradual involvement**
- **Co-empathize**
- **Creative activities for creative solutions.**



# methodology





# WS1

- **Get on the same level**
- **Establish trust**



# WS1

## COMMUNITY EXERCISE

group  
all-decisions anything  
socializing anything  
friendship  
home city any-problem people  
people life soullife  
socializing  
help-each-others  
soul friendship  
true-lider any-decision  
public-space

SPIRE UIA URBAN INNOVATIVE ACTIONS



# Questionnaire Stage 2



1 vote



0 votes



1 vote



2 votes



1 vote



1 vote



0 votes



1 vote



1 vote



1 vote



## WS2

- Main vector – youth
- **Including youth in urban decision making process!**





# WS2

ROMPLUMB SI FERNEZIU

PROBLEMA

SOLUTIA

poluare

spatiu degradat cu grad de poluare ridicat

zone neatractive

trafic + lipsa unor spatii pietonale sigure

accesibile

plantate

noua problema

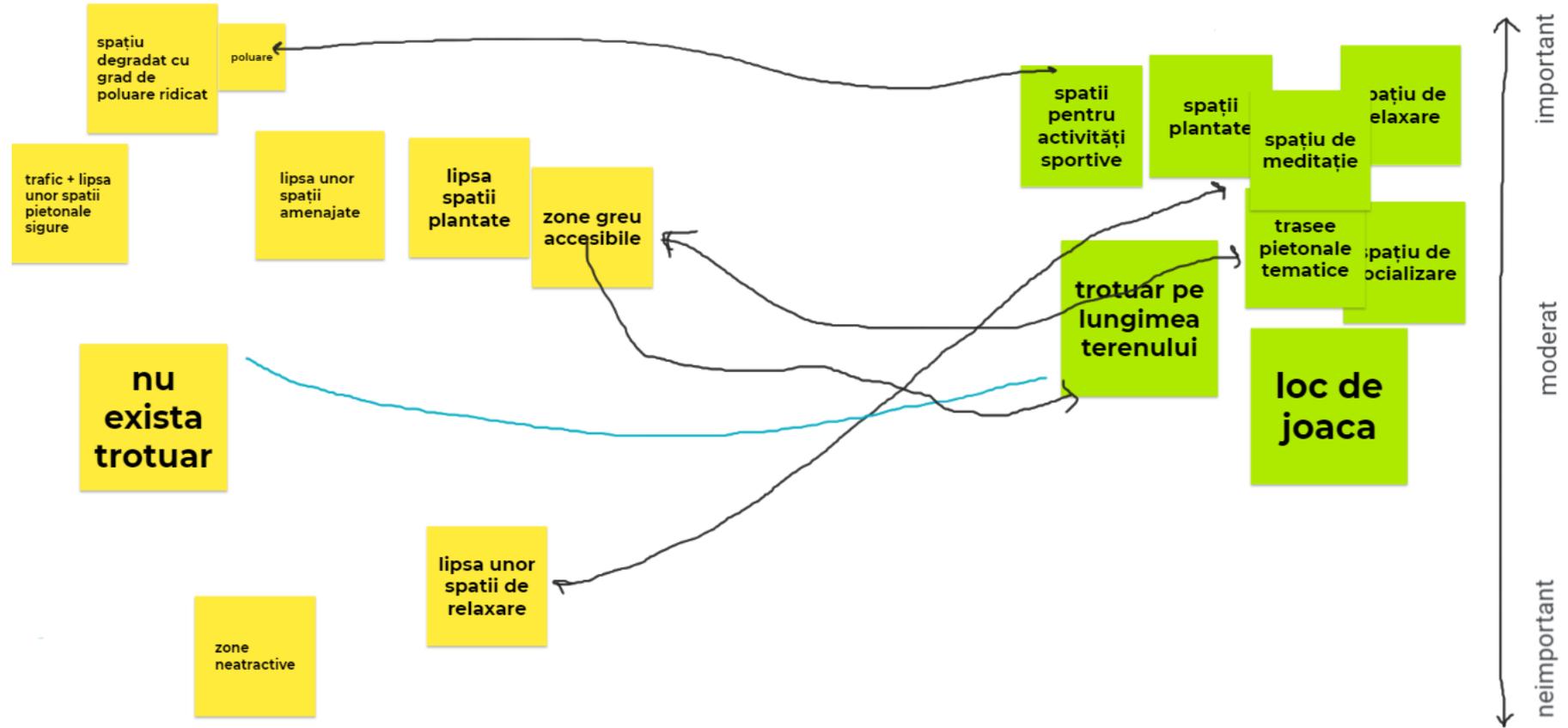
Sticky note

Cancel Save



# WS2 PROBLEMA

# SOLUȚIA





# WS2

**atractiv**

**Stradute relaxante cu banci si copaci**

**spatiu pentru exercitii fizice**

**Mini teren football**

**Perete pentru facut graffiti in public**

**piste de alergare**

**zona amenajata de picnic**

**traseu biciclete**

**Locuri cu hamace**

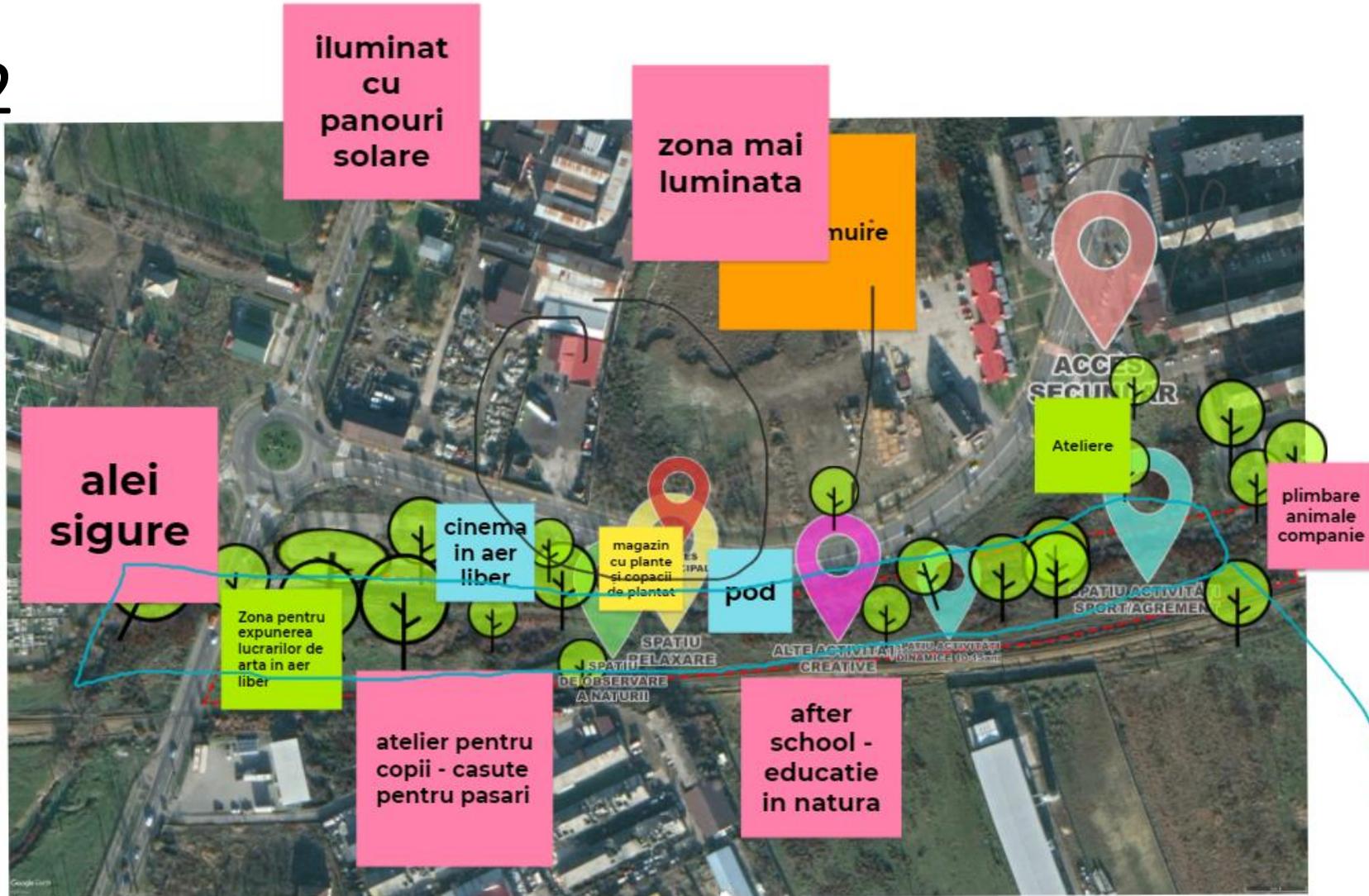
**spatiu mai aproape de natura**

**necesar**

*Other labels in the collage include: ALEE PIETONALĂ NECONVENȚIONALĂ, LOC DE JOACĂ NECONVENȚIONAL, SPAȚIU DE ODIHNĂ NECONVENȚIONAL, TUNEL DE VEGETAȚIE, PISTĂ DE BICICLETE, MESE PING-PONG, and HAMACE/LOC DE JOACĂ NECONVENȚIONAL.*

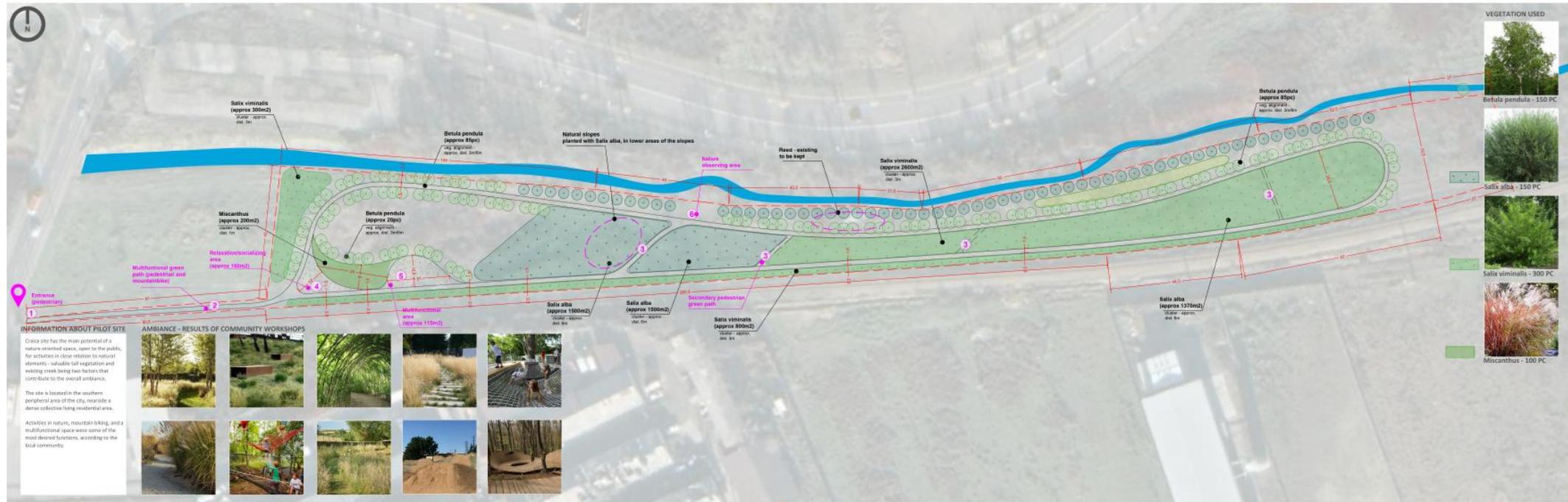


# WS2





# results





# results

## COLONIA TOPITORILOR



Accesează pagina de forum comunitar pentru situl Colonia Topitorilor

Terenul Craica prezintă vegetația va proasă, ca este integrată în noua amenajare.

Terenul Craica are principala va oare de spațiu liber, orientat către natură. Prin intermediul proiectului SPIRE, deschidem acest teren către comunitate, cu activități în strălucit egărdind peisajul natural. Vegetația multă valoroasă, cursul de apă și deschiderile vizuale ale terenului sunt câteva din factorii care contribuie la ambianța generală. Terenul este considerat a fi contaminat cu metale grele (regăsite în sol). Speciile de plante alese vor decontamina solul pe termen mediu-lung.

Soluția generală de amenajare este rezultatul unui proces de consultanță publică (prin chestionare online) și a unui proces de lucru colaborativ, simțat de toate, cu tineri din Bala Mare. Activități în natură, schimbarea cu bicicleta și un spațiu multifuncțional au fost unele dintre cele mai dorite ființuri, conform comunității locale.

Terenul se va transforma treptat, deducând un proces de ecologizare, transformându-se conform nevoilor comunității locale.

Procesul de lucru cu comunitatea a fost unul provocator dar distractiv:

Exercițiu colaborativ: ambianță și dotări



Exercițiu colaborativ: amenajarea terenului



Accesează pagina de forum comunitar pentru situl Craica

Terenul Colonia Topitorilor prezintă o locație favorabilă, situat în apropierea zonei de locuire individuală, cu o deschidere importantă către râul Iriș și cu un peisaj atractive.

Terenul Colonia Topitorilor prezintă o zonă de spațiu liber în direcția legăturii cu utilitățile zonei. Are principalul rol de spațiu public comunitar, parte din viața comunității locale în activități zilnice. Zona aferentă râului prezintă un peisaj aparte, valorificat prin zone de observare a naturii. Amenajarea prezintă o zonă de socializare și zone multifuncționale, cât și zone de recreație precum locuri de joacă. Imaginile picturale corelează aceste zone și reprezintă o avertare în natură pentru comunitatea locală.

Terenul este considerat a fi contaminat cu metale grele (regăsite în sol). Speciile de plante alese vor decontamina solul pe termen mediu-lung. Soluția generală de amenajare este rezultatul unui proces de consultanță publică (prin chestionare online) și al unui proces de lucru colaborativ, prin atelier de creație, cu tineri din Bala Mare. Locurile de joacă, încălțările, spațiile pentru mese și picnic și spațiile funcționale au fost deosebit de dorite și dezvoltate în acest proces.

Procesul de lucru cu comunitatea a fost unul provocator dar distractiv:

Exercițiu colaborativ: ambianță și dotări



Exercițiu colaborativ: amenajarea terenului





# results

**STRADA COLONIA TOPTORILOR**

**SPATIU SOCIALIZARE MULTIFUNCTIONAL**

**INTRARE PRINCIPALA**

**ACTIVITATI DINAMICE LOC DE JOACA**

Vin aici pentru o plimbare scurta

Vin aici să mă joc cu colegii după școală

Vin aici să mă plimb cu bicicleta

Ne-am dorit o zonă în care putem face picnic și să putem observa natura

Ne-am dorit un spațiu multifuncțional pentru comunitatea noastră în care putem susține diverse activități

Pinus Nigra/ pin

Thuja/ cedru

Juniperus horizontalis/ ienupăr

Salix viminalis/ salcie energetică

Prunus laurocerasus/ salcie energetică

Berberis thunbergii/ drăcilă

Hibiscus/ gutuiță

Lavandula angustifolia/ lavandă

Iris/ stânjel



# Co-implementing – the plantathlons







# Co-implementare





# WS3 – DESIGN MICRO-INTERVENTIONS

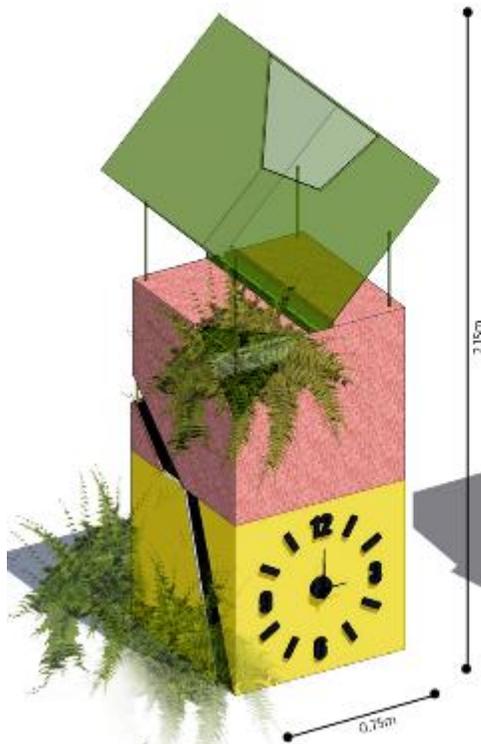




# WS3 – DESIGN MICRO-INTERVENTIONS

## MICRO-INTERVENTIONS DESIGN 1

SPIRE TOTEM OPTION 1



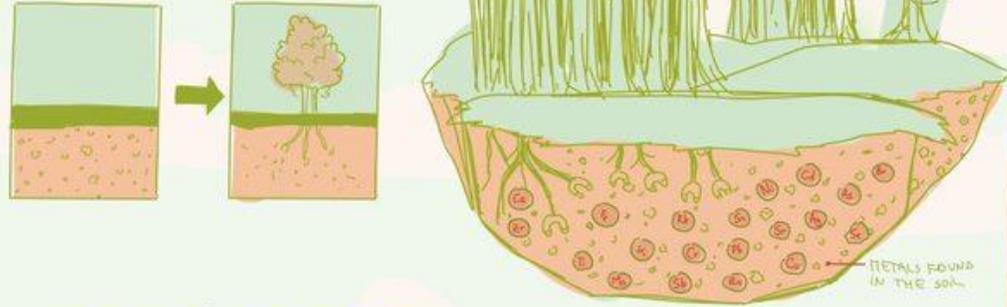
SPIRE TOTEM OPTION 2



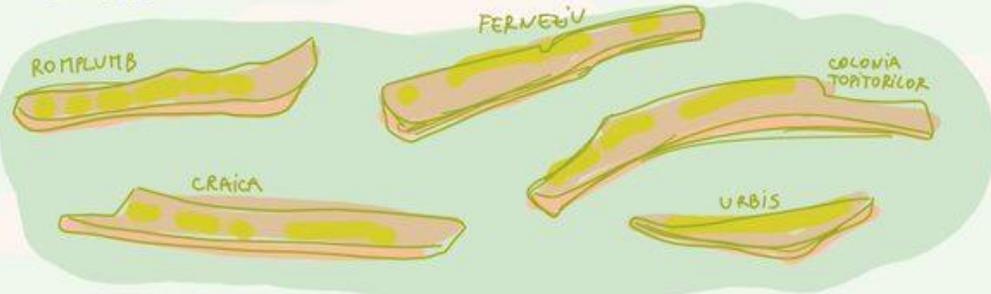


# PHYTOREMEDIATION

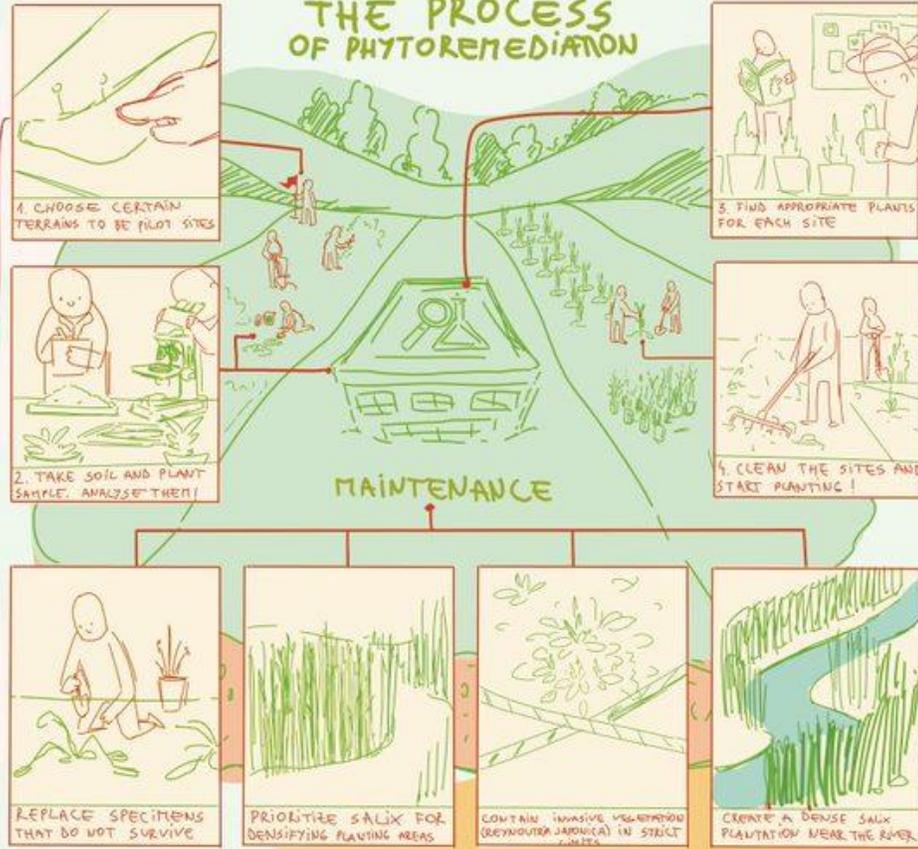
THE USE OF PLANTS TO REDUCE TOXIC EFFECTS OR CONCENTRATIONS OF CONTAMINANTS IN THE ENVIRONMENT.



## SPIRE PILOT SITES



## THE PROCESS OF PHYTOREMEDIATION



## PLANT INDEX



SALIX ALBA



SALIX VIMINALIS



SALIX BABILONICA



ACER PLATANOIDES



ROBIDIA PSEUDONACIA



CATALPA GLOBULAR



PRUNUS LAUROCERASUS



JUNIPERUS



BERBERIS THUNBERGII



THUJA



SORBUS ACUPARIA



PINUS NIGRA



PARTHENDOCISSUS QUINQUEFOLIA



MISCANTHUS



BETULA PENDULA



FRAXINUS EXCELSIOR



LAVANDULA



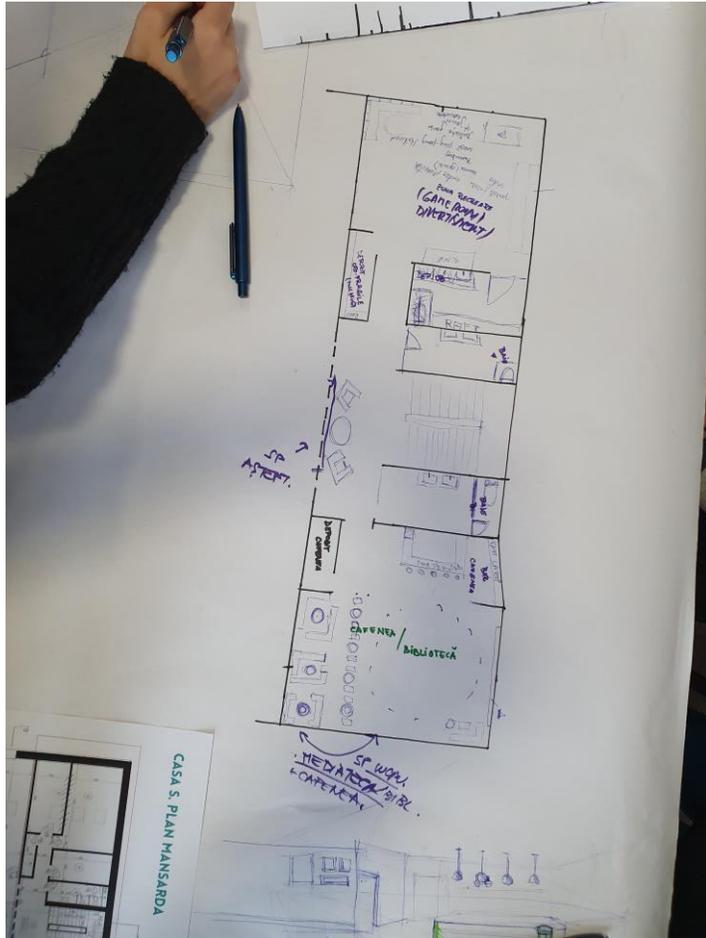
IRIS



HIBISCUS

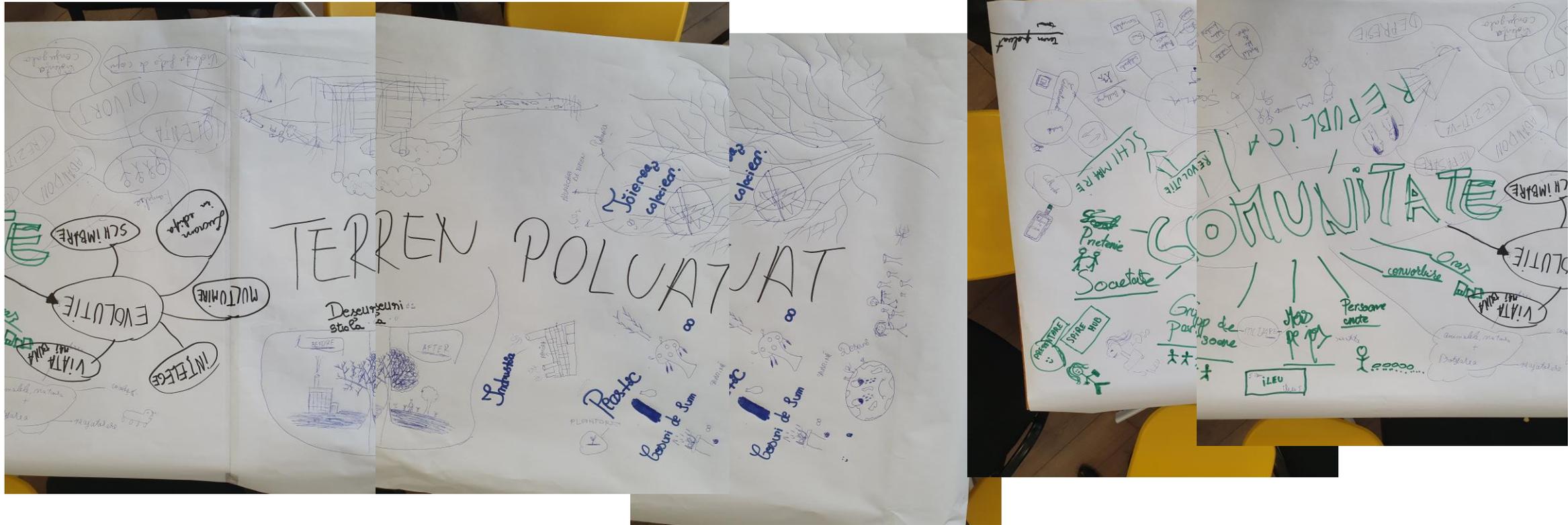


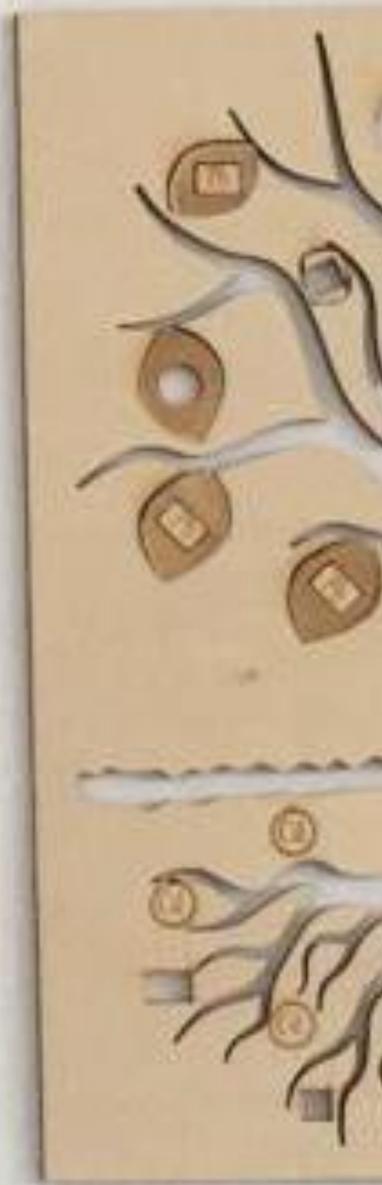
# SPIRE HUB BM and EXTENSION





# SPIRE wall art and message

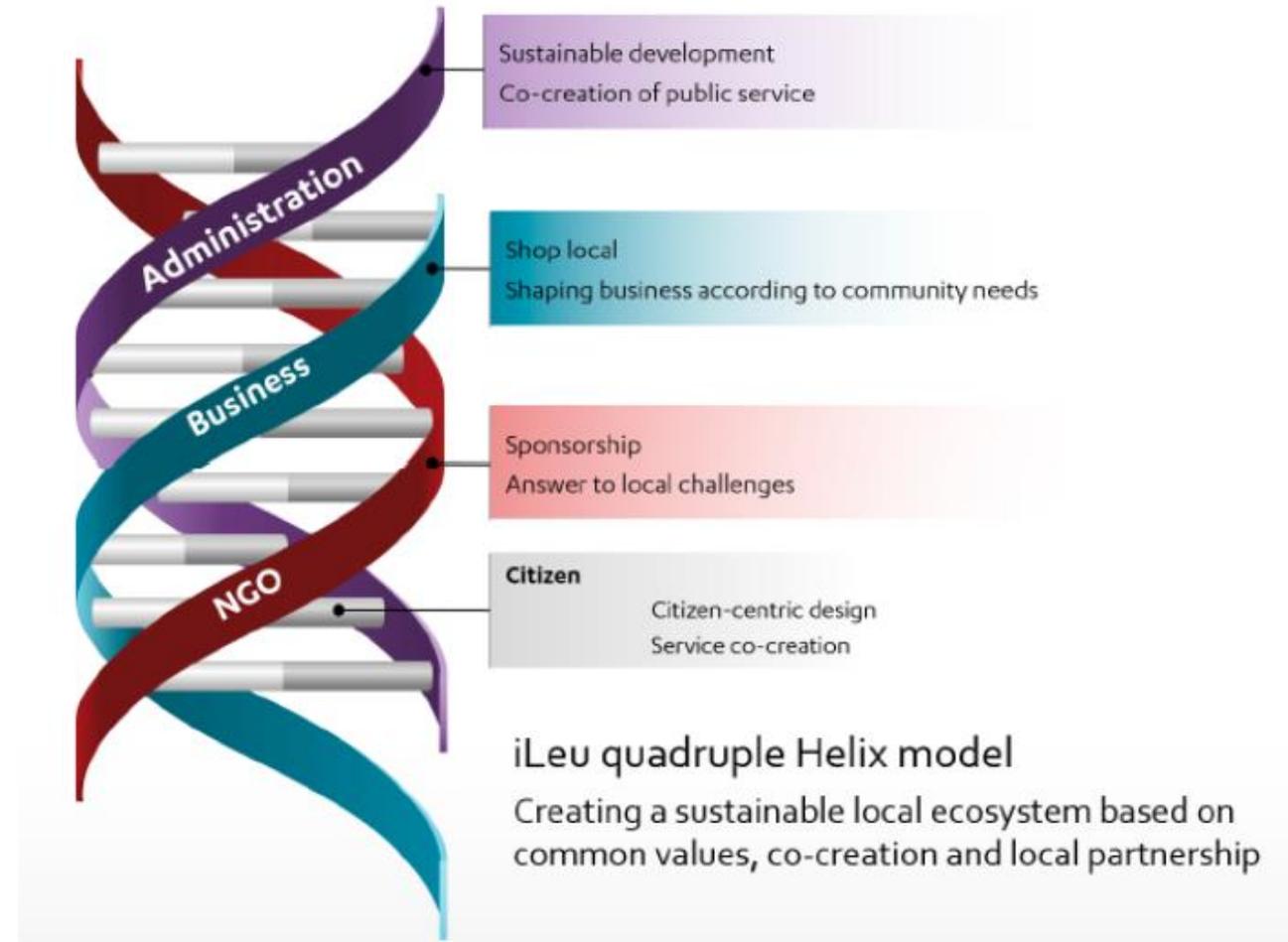






# Immaterial Local Environmental Utility -(iLEU

- Stimulating a change in behavior: raising awareness of local issues, stimulating involvement at both the individual and organizational levels.
- Reward system for ecological actions based on blockchain technologies
- Entrepreneurship support
- Use for tax payments: a matter of national law



INSPIRED BY LOCAL CURRENCIES EXPERIENCES



**ILEU**  
**(immaterial Local Environmental Utility)**

IT IS A LOCAL CURRENCY



IT IS A **LOCAL REWARD SYSTEM**



IT IS A CRIPTOCURRENCY



IT CAN BE MINED



IT IS BASED ON A LOCAL PPPP  
(PUBLIC PRIVATE PEOPLE PARTNERSHIP)



IT IS A LOCAL SERVICES, PRODUCT EXCHANGE ECOSYSTEM



IT CAN BE MINED THROUGH ENVIRONMENTAL-FRIENDLY ACTIONS



EACH QUANTITY OF ILEU IS MATCHED BY A PROPORTIONATE AMOUNT OF WORK: SERVICES, PRODUCTS, ENVIRONMENTAL-FRIENDLY BEHAVIOR,...

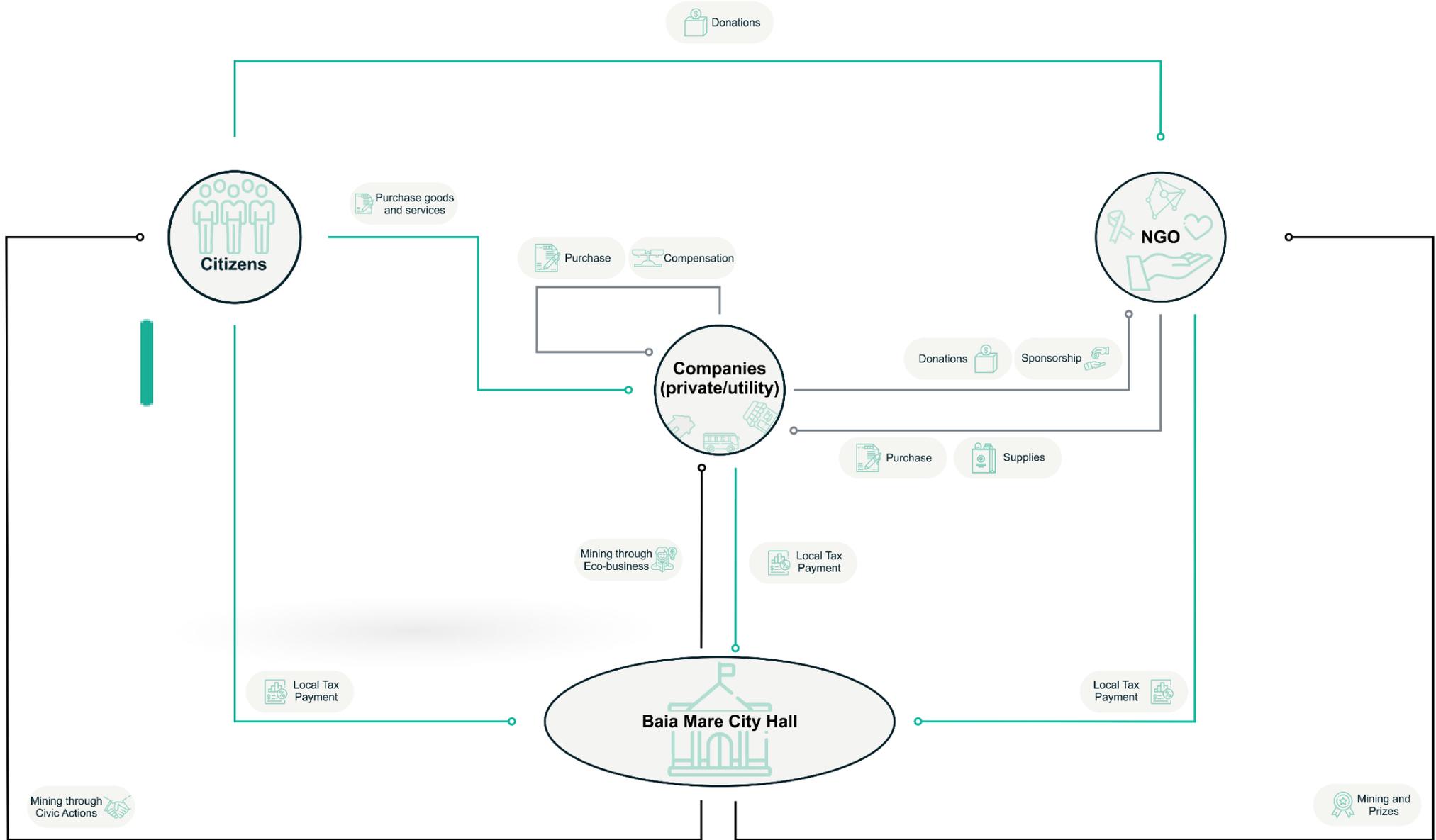


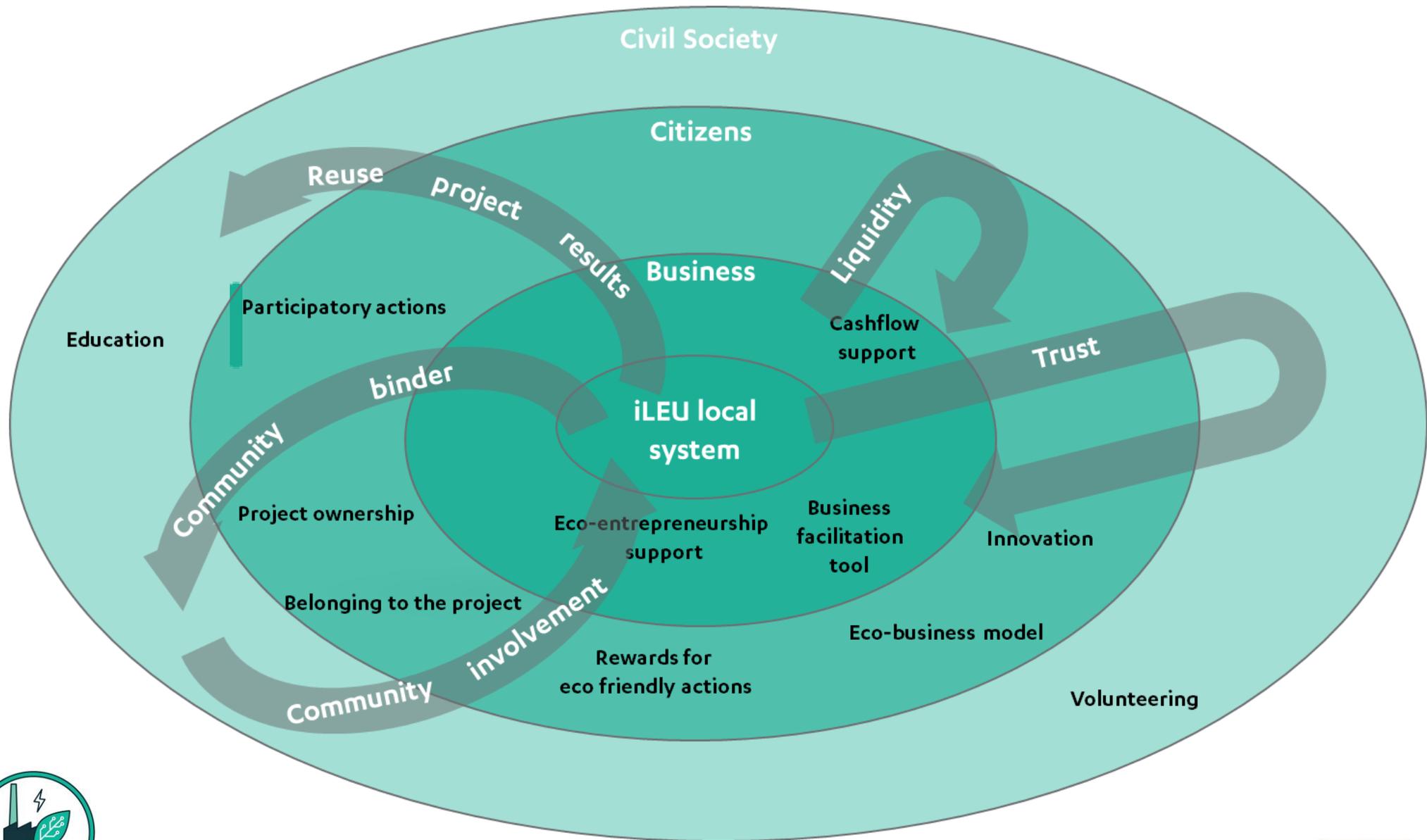
IT IS IMMATERIAL AS IT IS COMPLETELY BASED ON A COMPUTER SYSTEM AND CAN BE USED BY APP



THE CREATION OF ILEU HAS NO LIMITS







# iLEU

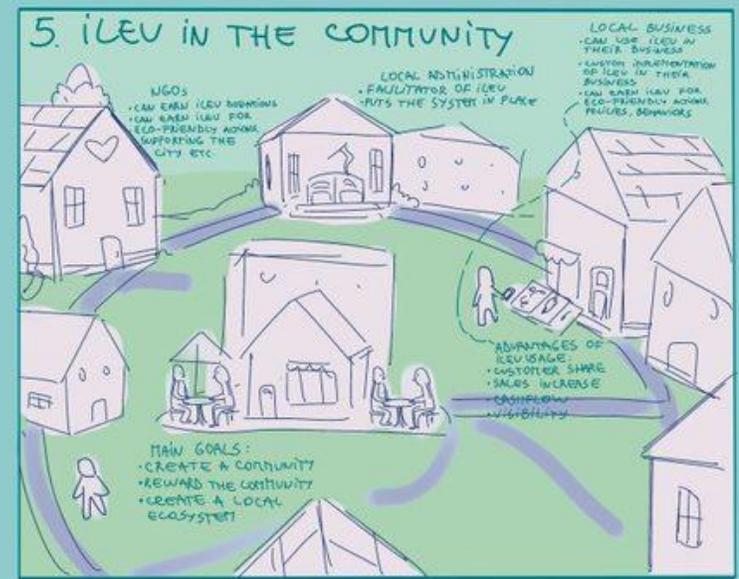
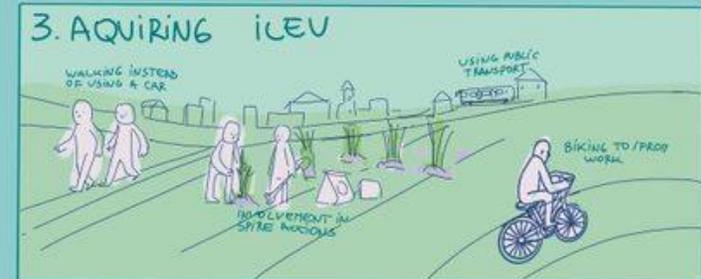
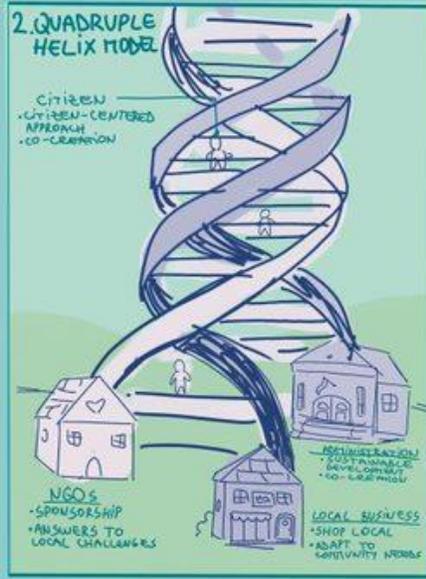
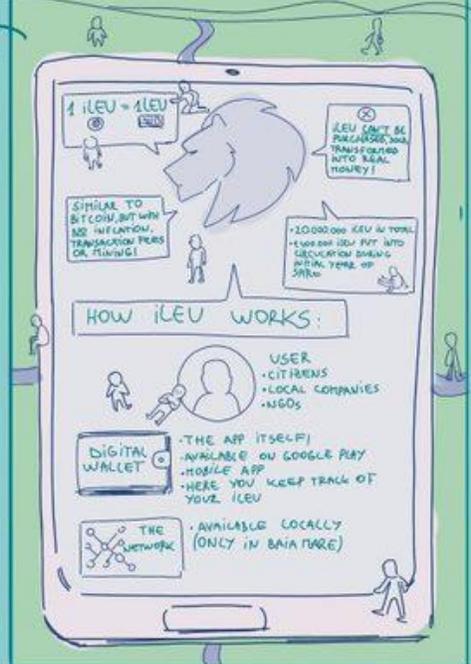
A DIGITAL LOCAL TOKEN THAT REWARDS ENVIRONMENTAL BEHAVIOR, INVOLVEMENT, ECO-ENTREPRENEURSHIP AND STIMULATES AWARENESS, KNOWLEDGE, ENVIRONMENTAL SUSTAINABILITY.



## 1. PURPOSE AND MISSION



## iLEU TECHNOLOGY AND RULES





**SPIRE**

**SPIRE BAI A MARE**

164 followers

[View full page](#)

**SPIRE** 164 followers  
6d • 🌐

🔔 Avem vești extraordinare!

➡️ Comunitatea iLEU începe să se formeze. Avem primul acceptator business în ecosistem și asta ne bucură tare. 🥳🥳

➡️ O companie locală care furnizează servicii cloud a devenit acceptator iLEU, asta înseamnă că acceptă plăți 100% pentru serviciile sale.

Așadar, dacă ai nevoie de găzduire, website, baze de date, aplicații web și adrese de email, acum ai posibilitatea să le achiziționezi plătind în totalitate cu iLEU.

Află mai multe aici 🖱️ <https://lnkd.in/dgNfPgZ2>

[See translation](#)



**SPIRE** **UIA** URBAN INNOVATIVE ACTIONS

# Avem primul acceptator iLEU business



1.7M+ small businesses trust LinkedIn with hiring.

[Post a free job](#)

- ### Similar pages
-  **Rotaract T.E.A.M. Baia Mare**  
Non-profit Organization  
Management  
11-50 employees  
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  -  **Tech Clinic Baia Mare**  
Computer Hardware  
2-10 employees  
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  -  **Toyota Baia Mare (Land Motors SRL)**  
Automotive  
11-50 employees

 **Messaging** 1

**Place Based Approach: The role of  
horizontal governance in shaping  
sustainable development**

# The Integrated Territorial Approach

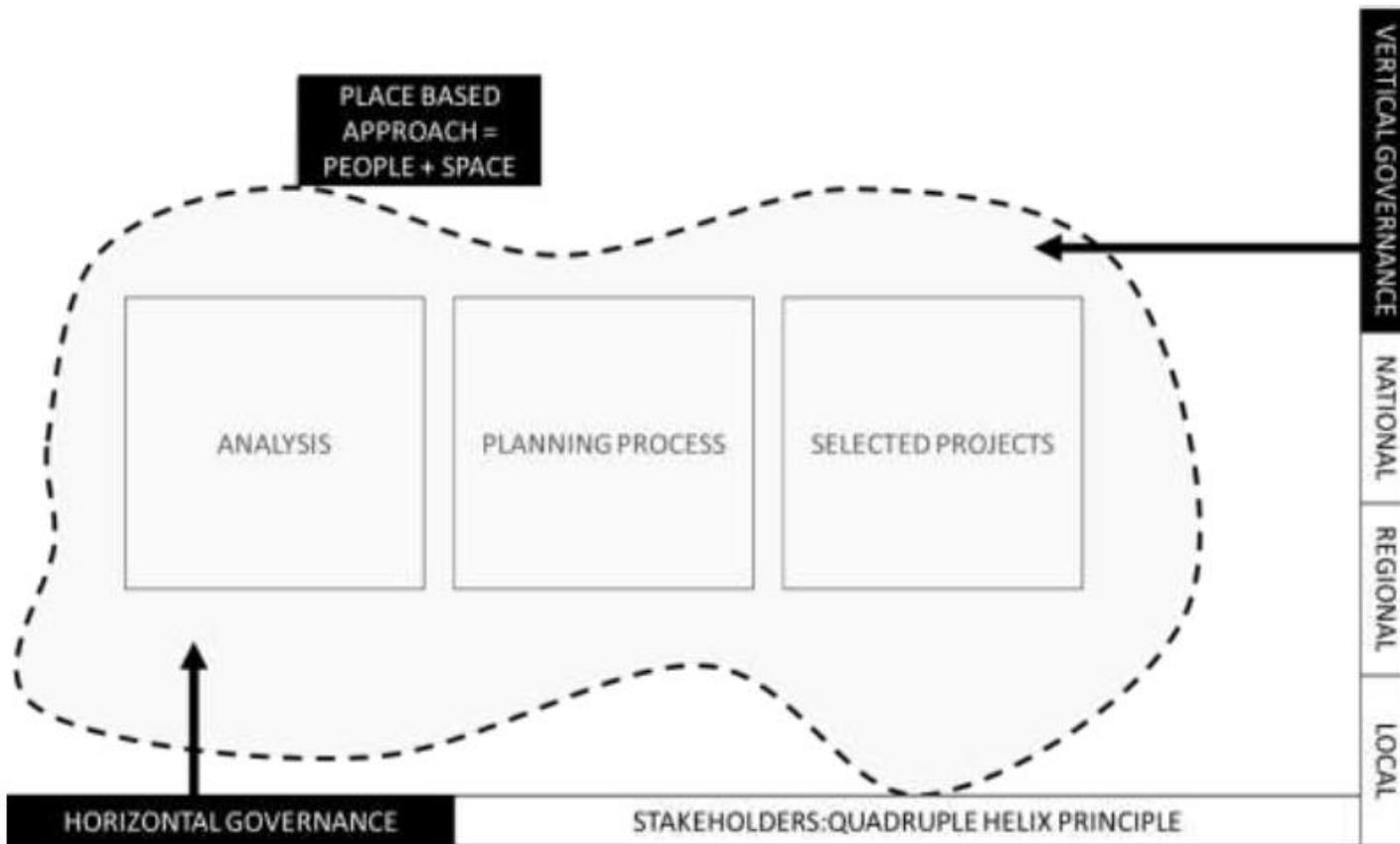


Figure 1, A simple governance scheme to keep in mind to start an action plan, designed by the author

The integrated approach can act at different urban scales, from the neighborhood to the metropolitan area.

The conceptual context is that of a place-based approach, that means harmonizing those assets characterizing the vertical and horizontal governance in clearly defined spatial setting.

For an action plan, in every case it is important that each single phase is involving:

1. **The proper stakeholders,**
2. **the competent governance layers (representing the diverse sectoral policies)**
3. **the diverse professional competencies (multidisciplinary applied knowledge)**



**VALUES**

**THEMATIC AXES**

**INTERCONNECTED  
TRANSFORMATIONS**

**Sustainability**, from climate goals, to circularity, zero pollution, and biodiversity

**Aesthetics**, quality of experience and style, beyond functionality

**Inclusion**, from valorising diversity, to securing accessibility and affordability

**Reconnecting with nature**

**Regaining a sense of belonging**

**Prioritising the places and people that need it most**

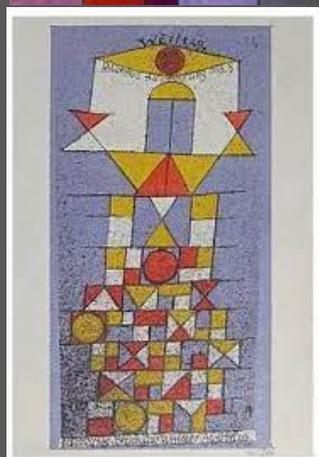
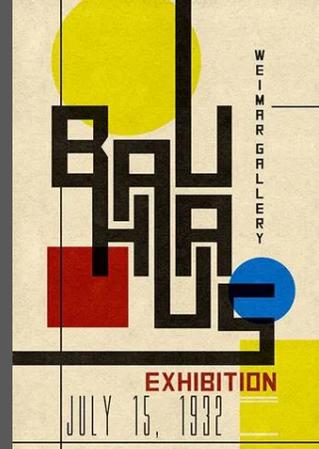
**Fostering long term, life cycle and integrated thinking in the industrial ecosystem**

...of places on the ground

...of the environment that enables innovation

...of our perspectives and way of thinking

**THE NEW BAUHAUS AS PROPOSED BY THE EU**



# **Final Remarks**

# SUSTAINABILITY IS NOT JUST A BUZZ WORD

	ECONOMIC DIMENSION	SOCIAL/EQUITY DIMENSION	ENVIRONMENTAL DIMENSION	GOVERNANCE DIMENSION	LOGISTICS DIMENSION	CULTURAL DIMENSION
<b>SUSTAINABLE PLANNING CHOICES</b>	COSTS	STAKEHOLDERS INVOLVED	NEGATIVE IMPACTS ON ENVIRONMENT ARE AVOIDED OR MITIGATED	LOCAL CLARIFICATION: ALL COMPETENT ADMINISTRATIVE AUTHORITIES SUPPORT THE SOLUTION AND DEFINE THEIR ROLE IN FACILITATING THE IMPLEMENTATION	BUDGETARY SUPPORT TO THE PROJECTS	CULTURAL LANDSCAPES
	BENEFITS	GUARANTEED EQUITABLE ACCESS TO BENEFITS	PROJECTS FAVORS THE USE OF RENEWABLE SOURCES/RESOURCES		INSTITUTIONAL SUPPORT TO THE PROJECTS	CREATIVE INDUSTRIES
	ECONOMIC RETURN OF PROJECTS	LOCAL DIVERSITY UNDERSTOOD AND CONSIDERED	PROJECTS ARE CONFORM TO EU DIRECTIVE ON:		RIGHT SCALE OF PROPOSED SOLUTIONS (PROJECTS CAN BE MANAGED AT THE SCALE OF THE TOWN AND OF AVAILABLE RESOURCES AND CAPABILITIES)	<b>CULTURAL HERITAGE AS CATALYST FOR DEVELOPMENT</b>
	STABLE JOBS CREATED	INDIVIDUAL/COMMUNITIES EMPOWERMENT IS PURSUED	<ul style="list-style-type: none"> <li>• WASTE MANAGEMENT</li> <li>• WATER MANAGEMENT</li> <li>• SOIL CONSUMPTION</li> <li>• AIR POLLUTION</li> <li>• NOISE POLLUTION</li> </ul>	POLICY TOOLS ARE AVAILABLE TO MANAGE THE DEVELOPMENT OF PROPOSED SOLUTIONS		IDENTITY IN CHANGE/PROGRESS
	TEMPORARY JOBS CREATED	INCLUSIVE ACTIONS ARE PROMOTED	ADAPTATION/MITIGATION CLIMATE CHANGE	PROJECTS ARE CONFORM TO TECHNICAL NORMS AND NORMATIVE PLANNING TOOLS		
		QUALITY OF LIFE				

# OPTIMAL CONDITIONS FOR INTEGRATED DEVELOPMENT STRUCTURES

- The **economic viability of the actions** or investment proposed and functions and uses of the territory must be considered in order to be sustainable.
- **Stakeholder involvement** is needed for designing effective territorial approaches.  
Local stakeholders and population have to be heard since they have good knowledge about the territory.
- **Efficient governance arrangements** are needed to facilitate the implementation of territorial development approaches and anchor the subsequent solutions well within land use planning framework: *Appropriate governance structure and institutional background are both needed on appropriate territorial level.*

# WHEN INTERVENING ON THE CITY

IN TERMS OF STRATEGIC PLANNING	IN TERMS OF TACTICAL PLANNING
To Switch from a project's logic to a logic of process	Multi-level governance activation on/in the <b>intervention areas</b> (activating multi-scalar competence and facilitating cross-sectorial policies coordination).
To move from the mere technical management of interventions to one <b>putting at the centre the process of urban / metropolitan / territorial governance.</b>	<b>Area based approach</b> (commitment to community empowerment, and community capacity, limiting and precisely identifying the intervention area).
To promote planning instruments that are facilitating the <b>private investments</b> (providing clear strategic business plans), but under precise conditions in respect of <b>general and public interest.</b>	<b>Time based approach</b> (setting clear and realistic timeframes for the regeneration/development planning processes).
To support <b>pluralistic decision-making</b> planning processes (multi-stakeholders / horizontal governance).	<b>Clearly define the intervention areas responding to priorities</b> put in evidence in the strategic plan process (housing, productive areas, public spaces...)
To sustain <b>multidisciplinary planning process</b> (professionals with different backgrounds to be involved, not just architects and engineers).	<b>A clear design of/for critical infrastructure</b> (green, blue, mobility, services networks)
Replacing the logic of business plans with <b>the logic of business strategy</b> (a long-term plan of action designed to achieve a particular goal or set of goals or objectives).	Define a clear frame of action for the <b>normative plans</b> (Land Use and strictly technical plans) and <b>link them to new IGIS and 3D applications.</b>

DR.-ING. PIETRO ELISEI

COVENANT OF MAYORS EXPERT

UIA EXPERT

URBACT EXPERT

ISOCARP PRESIDENT [www.isocarp.org](http://www.isocarp.org)

Skype: [pietroelisei](https://www.skype.com/people/pietroelisei)

[pietro.elisei@urbasofia.eu](mailto:pietro.elisei@urbasofia.eu)

*Grazie*

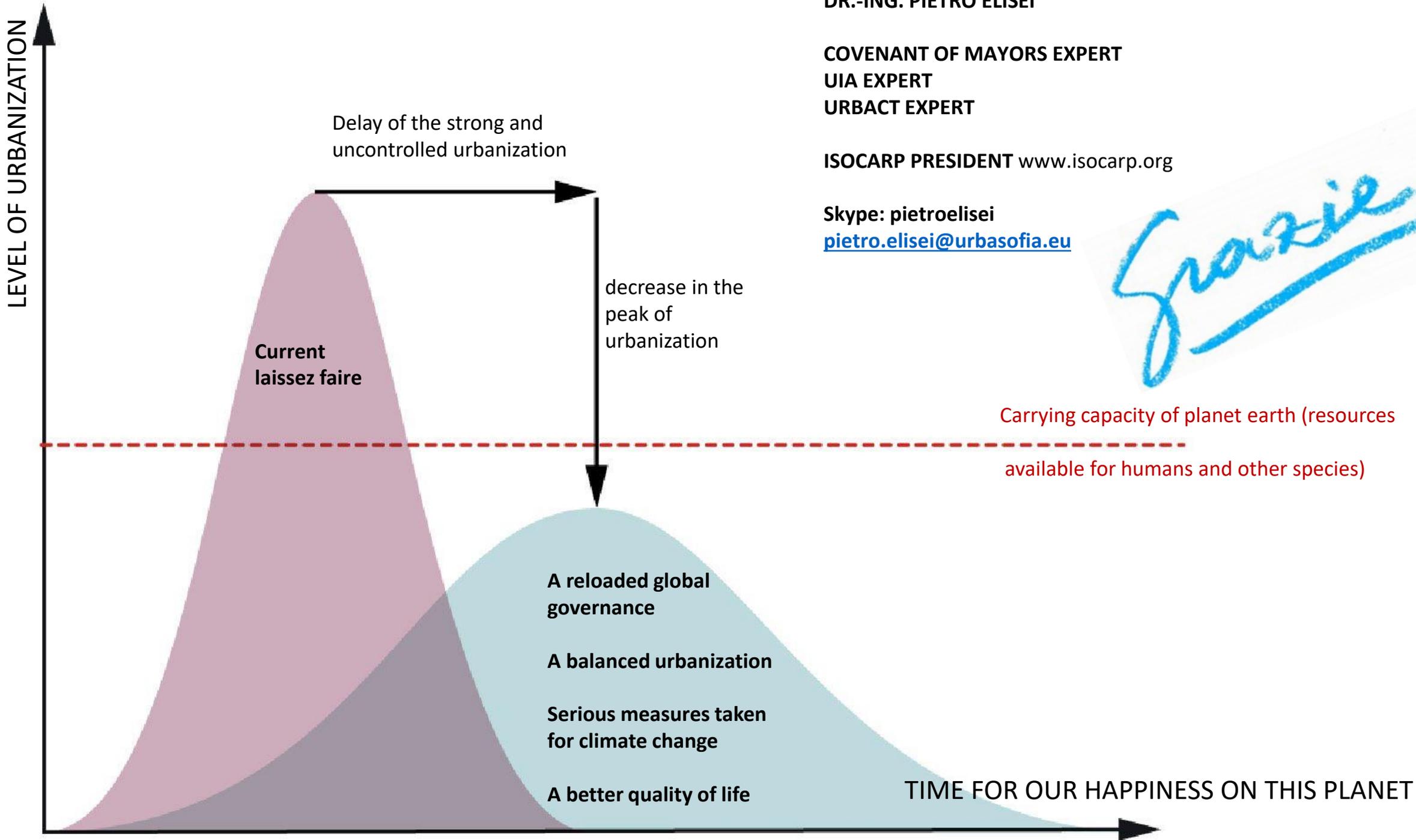




illustration by Avril Orloff

# I'm a Table Host; what do I do?



*illustration by Nancy Margulies*

- Remain at the table when others leave and welcome travelers from other tables for the next round of conversation.
- Briefly share key insights from the prior conversation so others can link and build using ideas from their respective tables.
- Gently & as appropriate, encourage people at your table to jot down key connections, ideas, discoveries, and deeper questions as they emerge.





#### **MENU OF THE DAY:**

- **Kanjon Kokre, Mestna občina Kranj,**
- **Park ob gradu Brestanica, Mestna občina Krško,**
- **Park Pekrski potok, Mestna občina Maribor,**
- **Urbana prenova Stanetove ulice, Mestna občina Velenje,**
- **Palača Cukrarna, Mestna občina Ljubljana.**