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Table of contents

Invitation letter Horizon Europe NBS EduWORLD Project Hackathon event	3
What can you expect	3
The methodology and mode of interaction	4
Our challenges	5
Agenda	8



Invitation letter Horizon Europe NBS EduWORLD Project Hackathon event

We are pleased to invite high-level education professors, students, researchers, experts and those interested in the field of nature-based solutions (NBS) education, to participate in the NBS EduWORLD Hackathon, a pioneering **2-day online event** taking place on the **21st and 22nd of March of 2024**. This event coincides with the <u>International Forest Day</u> and the <u>World Water Day</u>, highlighting the critical importance of biodiversity and water in sustainable development.

<u>NBS EduWORLD</u> is a European Union (EU) funded Horizon Europe project dedicated to creating engaging and locally relevant educational resources focusing on the benefits of NBS to mitigate socio-economic and environmental problems, exacerbated by Climate Change. By participating, you and your students have the unique opportunity to contribute to the development of an interactive game experience that aligns with our central education goal.

What can you expect

Interactive learning: Immerse yourself and your students in a 2D virtual environment representing 3 different settings: two river sites confluence (to study the problematics raised by the City of Belgrade), a river and a sea confluence (simulating one of the streams crossing the City of Genova), and a lake connecting to a river (as a representation of Moldova's natural wetland reserve). The game users will navigate and interact in the game, accessing educational resources in the different rooms and gaining insights into crucial environmental challenges and the role of NBS in addressing them.

Educational resources: Attend our lecturers' presentations and access to each of our 3 virtual "data rooms" where we will provide you with information from the above-mentioned case studies (Belgrade, Genova and Moldova), and then inspire you with general concepts about NBS and what possible restoration practices could be applied. The idea is that students are moving out from a human-centred mindset in order to solve the environmental challenge. By this, students will receive tailored knowledge from NBS EduWORLD educators, practitioners and partners that are actively engaged in the event. This hackathon is designed to facilitate a deep understanding of the environmental and societal benefits of ecosystem-based approaches and NBS.

Collaboration: This event is organised by NBS EduWORLD partners, including two partner institutions per each of the following three landscape settings:

- urbanised coastal areas, illustrated by representatives from Almada (Portugal) and Genova (Italy);
- densely urbanised river sites, showcased with examples of the city of Belgrade, brought by the professionals from the Centre for Experiments in Urban Studies (CEUS), and the research conducted at the Muséum national d'Histoire naturelle in Paris (France) on biodiversity related topics;



• rural landscapes in wetlands environments, illustrated by the Association Verde e Moldova in a specific selected site of the Biosphere Reserve, the Lake Beleu.

With expert software guidance from Natural Solutions and support from ICLEI Europe, participants will collaborate on drafting ideas to incorporate NBS and ecosystem-based approaches that contribute to mitigate the problems raised at the 3 different contexts.

Key objectives:

- **Showcase challenges:** Explore and showcase the main environmental and socio-economic challenges faced by urbanised coastal areas, densely urbanised river sites, and rural landscapes in wetlands environments in Europe.
- **Understanding NBS impact:** Gain insights into the ecosystemic and societal benefits of NBS in mitigating these challenges.

Rewards: At the end of the 2-day event, participants will present their solutions to a jury. A reward ceremony will be held, where jury members will select a total number of 3 projects, one for each case study. The award-winning groups will have the opportunity to further engage, network, gain visibility and boost their curricula thanks to the possibility to upload their projects to the <u>NBS EduWORLD</u> and <u>UrbanByNature resources</u> websites. Additionally, 4 people from the winning projects will be granted a budget of 700 euros to arrange their ticket and accommodation expenses to attend the **Network Nature + annual event** to be held in Brussels in September 2024.

Official Certification: An official attendance certificate will be issued by the Hackathon organisers and delivered to the selected participants. This document can prove your effective participation in the event and can be presented to your university administration.

REGISTER HERE BY THE 27TH FEBRUARY

The methodology and mode of interaction

NBS EduWORLD explores a user design approach for NBS education to raise awareness around biodiversity and environmental challenges. Further, this event guarantees the involvement of NBS experts with participants to bring feedback on the co-design of the virtual experience.

The Hackathon targets a desired audience to join this event and the interaction interface, joining the game and exploring one of the three virtual environments. This learning exchange is based on a non-human centred approach to the understanding of a given ecosystem and the important role of NBS to find solutions to the targeted ecosystem problem.

Who can participate?

From bachelor to PHD, all students enrolled in a University program are welcome to take part in the 2-days Hackathon event. As the problems faced by the different ecosystems are plural,



this Hackathon encourages the participation of students from different backgrounds, to embrace a holistic approach and to strengthen cooperation between different disciplines.

Here is a non-exhaustive list of some disciplines that could fit the best in this online event: biology, environmental science, political science, urbanism, architecture, landscaping, IT and digital, agronomy, ecology, civil engineering, earth sciences and physics.

Please note that due to the capacity limitations, only 50 to 60 participants can attend the Hackathon. Priority will be given to 3rd year, Master and PHD students. Being a **higher-education student**, **available to attend the two days** will be a must and a **fluent level in English** as an additional prerequisite for applying.

Our challenges

Genova

General context

Genova (located in the west-north of Italy), is a mediterranean city with an accidented topography. The city is crossed by a number of streams, which flow down from an immediate range of hills into the tight coastline front. This coastal densely urbanised region, which emerges immediately behind the urban fabric, is characterised by the development of one of the biggest mediterranean industrial, commercial and tourist port areas. For the most part, there is a dense hydrological network, although the urban fabric and channelling and covering actions reduced infiltration and retention rates. Additionally, few streams which remain uncovered are not adequately valued in terms of public use, biodiversity protection, etc. With the urbanisation and more recurrent extreme rainfall events due to Climate Change, the city experiences increased flooding. Besides, the biological interconnectivity flows have been altered. These most concerning environmental challenges, identified by our NBS EduWORLD partners representatives from the Municipality of Genoa, justified our decision to mainly focus on the river systems rather than the coastline.

Example of a NbS applicable to this case

Riverside riparian buffers: support biodiversity, ecological corridors (rivers-sea system), flooding mitigation and water and soil quality.

Rain-gardens: designed as a decentralised natural treatment system, help to infiltrate, retain and treat urban runoff and combined sewage overflows in cities.

Simplified map environment

A creek flowing into the sea (from the hills/mountains, going through the urban fabric and then to the coastal line, including the mouth of the stream). Below an image of Genoa and an example of how the 2d game may represent this reality in an abstract mode:







Belgrade

General context

Due to intensive urbanisation, riverfronts of both Sava and Danube are re-shaped by large real-estate development projects. In order to preserve valuable urban biodiversity in Danube riverfront and the role of flood protection of riverfront area, Belgrade is facing two-fold problems: (1) how to maintain existing flora and fauna, and even use NbS for urban flood protection, in areas that are to be redeveloped, such as Marina Dorćol or Belgrade Port around the future Linear Park, and (2) how to preserve naturally valuable areas from land-use conversion and/or illegal usurpation, such as Bara Reva, which was turned into informal construction and demolition waste landfill, and was re-planned as a new industrial zone. As a positive change, in 2022 Belgrade replanned Ada Huja as a new urban forest, instead of a new residential and commercial area.

Example of a NbS applicable to this case

Riverside riparian buffers and urban forests perform as ecological corridors that enable the flow of different species, including pollinators, birds and small mammals that are key to sustaining our ecosystems and producing natural resources that maintain us.

Simplified map environment

Two river sites confluence, to study the problematics raised by the City of Belgrade.





Danube Delta in South of Moldova

The Lower Prut Biosphere Reserve (BR) (located in the south of Moldova) is the former Lower Prut Scientific Reserve, and changed its name by 2018. This highly ecological area represents a fortunate instance. The Ramsar site (Lower Prut Manta Beleu lakes) overlaps with the perimeter of the aforementioned reserve, and for these reasons it does benefit from the presence of a permanent BR administration, funding and management plan.

The recent 2019-2020 monitoring results in Lower Prut Biosphere Reserve indicates an alarming decrease of the water level in Lake Beleu causing reduction of aquatic plants and increased fish mortality. Long dry seasons and the decrease of the water level led to the relocation or disappearance of sensitive species, such as the great crested newt *Triturus cristatus* no longer observed in recent years. Newts are valuable indicator species of healthy ponds and biodiversity rich small wetlands. Increased lake siltation leads to water retreat and spread of wetland wooded vegetation on areas formerly occupied by lakes. Furthermore, according to the expert community, species' migration patterns and timing may have started to change.

In addition to the decrease of water level and lake siltation, the unsustainable grazing in Lower Prut Biosphere Reserve, led to degradation of the riparian strips of grassland and forest. Additionally, soil erosion increased the siltation of lakes Beleu and Manta. Currently, Prut riverbanks appear as a fragmented network of highly eroded ravines. Run-off water carries stones, debris and agricultural organic matter into the lakes system, increasing siltation and clogging of channels that connect these lakes with the Prut River.

Example of a NbS applicable to this case

Wetlands restoration is a complex topic that entails multidisciplinarity work based on solid contextual understanding. Science has demonstrated the high ecological value of these ecosystems and the need to preserve them. Floodplain forests are an important natural environment to support their preservation, as well as the re-establishment of hydrological interconnectivity and removal of hydraulic engineering infrastructures, all linked in the chain to providing well-being to local communities.

Simplified map environment

A lake (representing Lake Beleu) connecting to a river (river Prutul) that connects to the Danube.





Agenda

Day 1, Thursday, 21 March				
Duration	Торіс	Description	Responsible	
9:00-9:30	Welcome quest: introduction to NBS and how to play	As they arrive in the game, students first learn about NBS and the gameplay	ICLEI Europe, Natural Solutions	
9:30-10:15	Introduction to NBS EduWORLD, Tier-2 cases and the aim of this interaction	Students discover the 3 use-cases they will be working on: Belgrade, Genova and Moldova (ecosystem context, objectives and expectations)	ICLEI Europe, Tier-2 partners and Natural Solutions	
10:15-11:00	ICE Breaker, Teaming-up	Teams of students are formed ; prizes and awards are presented ; jury is introduced	Natural Solutions and ICLEI Europe, with the participation of all	
11:00-11:30	Break			
11:30-12:10	Presentations	Lecturers will bring an overview about key environmental challenges and the potential of NBS to mitigate them	Simon Benateau, Patrícia Pinto da Silva, Mário Stevens, Elena Maranghi, Dario Cavallaro, Carme Machí Castaner	
12:10-13:00	Free game interaction time	Students gather in the area of the use-case they will be working on (Belgrade, Genova or Moldova). They discover team rooms and data rooms. They are introduced to the case referent and to their team coach	All	
13:00-14:00	Lunch			
14:00-16:30	Game interaction with NBS experts support	30' tops of specific presentations on the cases (e.g. Danube delta, wetlands and Ukrainian actions for the Moldova case). Free interaction	All, supported by NBS EduWORLD partners	



	between students to ideate and select the idea they will be developing as an NBS	

Day 2, Friday, 22 March					
Duration	Торіс	Description	Responsible		
9:00-09:30	Wrap-up from the first day		ICLEI Europe		
09:30-10:00	Questions & answers timeslot		ICLEI Europe, Tier-2 partners and Natural Solutions to answer questions from participants		
10:00-11:00	Game interaction with NBS support		All, supported by NBS EduWORLD partners		
11:00-11:20	Break				
11:20-13:00	Free game interaction time	presentations should be sent by 13:00	All		
13:00-13:40	Lunch				
13:40-15:00	Presentation of the ideas from each group	Each team will have a 5 minutes slot to pitch their idea, and 3 minutes to answer jury questions	Participants		
15:00-16:30	Review of the ideas and awards process	Jury will deliberate in the jury room and define award winners. The day will end with the award ceremony, and a closing ceremony to thank all participants.	All, with active involvement of the jury		

Presenters

Simon Benateau, Patrícia Pinto da Silva, Mário Stevens, Elena Maranghi, Dario Cavallaro, Carme Machí Castaner.



Organisers and partners

This event is organised by <u>Natural Solutions</u> and <u>ICLEI Europe</u> with the support from Centre for Experiments in Urban Studies (CEUS), Almada Municipality, Association Verde e Moldova (VEM), Municipality of Genoa and Muséum national d'Histoire naturelle, and the involvement from the rest of the HE NBS EduWORLD partners below listed.



Don't forget to register here.

For any further assistance or questions, please contact <u>carme.machi-castaner@iclei.org</u>. Looking forward to seeing you in this exciting and promising virtual encounter!

ICLEI - Local Governments for Sustainability European Secretariat, Leopoldring 3, 79098 Freiburg, Germany T: +49-761-3689236 www.iclei-europe.org I @ICLEI_Europe

ICLEI - Local Governments for Sustainability is a global network of more than 1,750 local and regional governments committed to sustainable urban development. Active in 100+ countries, we influence sustainability policy and drive local action for low emission, nature-based, equitable, resilient and circular development.

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