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Integrating Nature-Based Solutions into Higher Education towards exploiting the transformative potential of Social Economy for a green and inclusive future

WP4 - Development of the Green SE curriculum

Methodologies for organizing NBS bootcamps to hack local problems at campuses and public spaces

Responsible partner: Rzeszow Regional Development Agency

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1. Practical information

What is a bootcamp?

In general a **bootcamp** is an intensive, short-term training program designed to teach specific skills or knowledge in a practical and hands-on manner. Bootcamps are popular choice for people looking for an accelerated way to learn and achieve specific goals.

Nature Based Solutions Bootcamp is an innovative educational offering strictly dedicated for involving students of Social Economy faculties in new collaborations with experts, teachers and students from Life Science university departments as well as with Social Economy Entrepreneurships, Social Economy Entities (such as NGO`s), and local community actors.

The aim of these new collaborations is to hack local problems through NBS either within their campus or within their communities in order to finally work out solutions aimed at greening Higher Education Institutions (HEIs) campuses or urban public spaces communities by leveraging the educational potential of NBS.

Such an approach to the NBS Bootcamp will allow the formation of attitudes and development of the eco-citizenship competences, interdisciplinary and cross-disciplinarity partnerships and experience first-hand the contribution of NBS to provide environmental and social benefits and help build community resilience in urban environments.

In addition, Social Economy faculties will collect essential empirical evidence regarding the contribution of this innovative educational approach to develop students' green competences for exploiting the huge potential of SE to drive the green transition.

SEgoesGreen project information

NBS Bootcamp is **14-day training** designed to equip participants with practical skills, knowledge, and tools to address local environmental challenges using Nature-Based Solutions (NBS).

The program combines theory, hands-on practice, community engagement, and NBS prototype development.

The project "SEgoesGreen" educational manual **GREEN SE curriculum** will be used during the bootcamp.

Bootcamps will be organized by project HEI`s: in Poland (UKEN) – 1 event, Greece (UoM) – 1 event, Croatia (UNIZG) – 1 event.

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Project target groups. The project assumes that each bootcamp will involve:

- At least **20 students** from each partner country (Poland, Greece and Croatia) and
- More than **16 stakeholders** per country (Poland, Greece and Croatia) connected with NBS issues such as NBS experts, urban planners, policy makers, SE professionals, local community actors, teachers from Life Science university departments as others connected with NBS, representatives of Social Economy Entrepreneurships and Social Economy Entities (such as NGO`s),
- **In total >36 participants**

Suggested and preferred formula of the project event - on-site, especially for co-creation activities, inspiration activities and consulting part of bootcamp.

This also does not exclude conducting meetings with stakeholders in an online format.

SEgoesGreen project indicators that will be used for measuring the level of achievement and quality of results:

- Number of students participating in the bootcamps: **> 60**
- Number of SE professionals and community members (urban planners, policy makers etc.) participating in the bootcamps: **50**
- Engagement level of SE professionals and community members to contribute with their ideas and skills in the bootcamps: **50%** of those reached confirm their engagement to participate
- **80%** of students reporting that the curriculum increased their interest and skills in NBS and eco-citizenship
- **80%** of SE faculty educators involved in the real-life implementation of the curriculum state that the resources contributed to increasing their capacities for supporting their students
- **50%** of SE faculty educators involved in the real-life implementation of the curriculum, report their intention to integrate GREEN-SE learning activities in their courses.

2. What are the benefits of NBS bootcamp?

Connecting the work of local NGOs, local experts, and students to solve local NBS problems is crucial for a variety of reasons. This collaborative approach maximizes the strengths of each group, leading to more effective, sustainable, and impactful solutions. Here are some key reasons why such involvement is important:

1. Harnessing Local Knowledge and Expertise

- **Local Context Understanding**: Local experts and NGOs have in-depth knowledge of the specific environmental, social, and cultural contexts of the community. This ensures that NBS interventions are tailored to local needs and conditions.

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- **Expert Guidance**: Involving experts in the field provides students with accurate, evidence-based information and mentorship, enhancing the quality and success of the projects.
- **Bridging Knowledge Gaps**: Local experts can share practical knowledge and insights that may not be found in textbooks, helping students connect theory to real-world applications.

2. Building Capacity and Skill Development

- **Practical Experience for Students**: Engaging with experts and NGOs allows students to apply theoretical knowledge to real-life challenges, developing practical skills in problem-solving, research, and collaboration.
- **Interdisciplinary Learning**: Students benefit from exposure to multiple disciplines such as environmental science, policy, community development, and social work, broadening their skill sets and knowledge base.
- **Mentorship**: Students gain valuable mentorship from local experts, improving their understanding of career pathways in sustainability and environmental solutions.

3. Increasing the Impact and Sustainability of NBS Projects

- **Effective Local Solutions**: By collaborating with local NGOs and experts, students can help develop NBS projects that are deeply relevant and impactful in addressing local environmental problems such as flooding, heat islands, and biodiversity loss.
- **Community Buy-in**: Local involvement ensures that NBS interventions are culturally sensitive and accepted by the community, increasing the chances of long-term sustainability.
- **Resource Efficiency**: Local NGOs and experts are already familiar with the resources available in the community, allowing for cost-effective and resource-efficient solutions.

4. Strengthening Community Engagement and Collaboration

- **Co-Creation of Solutions**: Students, experts, and NGOs bring together different perspectives, leading to more innovative, diverse, and effective solutions. This collaborative approach fosters stronger community bonds.
- **Community Empowerment**: Involving local NGOs and experts helps empower the community to take ownership of NBS solutions, ensuring that solutions are relevant and grounded in the community's needs.
- **Building Networks**: By working alongside experts and NGOs, students become part of a broader network of environmental professionals, further strengthening the collective efforts to address NBS challenges.

5. Enhancing Youth Leadership and Environmental Stewardship

- **Inspiring Future Leaders**: Student involvement fosters a sense of responsibility, activism, and leadership in addressing environmental challenges. It encourages a new generation of environmental stewards who will continue working on sustainability issues in the future.

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- **Advocacy and Awareness**: Students can advocate for NBS approaches in their universities, communities, and even policy spaces, spreading awareness of the importance of nature-based solutions and environmental conservation.
- **Empowering Youth**: Engaging students in solving local NBS problems helps them feel empowered and motivated to contribute to positive environmental change, both locally and globally.

6. Bridging the Gap between Theory and Practice

- **Real-World Application of Academic Knowledge**: Connecting students with local experts and NGOs allows them to apply academic knowledge to real-world problems, enhancing their learning experience and making it more meaningful.
- **Research Opportunities**: Collaboration with local experts and NGOs offers students opportunities to conduct field-based research, gather data, and contribute to projects that have tangible outcomes.

7. Building Resilience in Local Communities

- **Addressing Climate Change**: Many NBS projects address the effects of climate change (e.g., flood management, urban heat island reduction), helping communities become more resilient to environmental stressors.
- **Capacity Building for the Future**: The involvement of students ensures that future generations are equipped with the skills and knowledge necessary to continue building resilient, sustainable communities.

This approach to learning will provide many benefits for all parties involved. By connecting students with local NGOs and experts, communities can tap into a diverse range of skills, knowledge, and resources, while providing students with valuable real-world experience and inspiring them to become future leaders in sustainability and environmental conservation. This collaboration ultimately strengthens local resilience and contributes to a more sustainable future for everyone.

The **NBS Bootcamp** provides practical training but also aims to strengthen the link between academic knowledge, local expertise, and community action, making them a powerful tool for addressing sustainability challenges through NBS.

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3. Let`s bootcamp!

Organizing **NBS Bootcamps** to address local problems at campuses and public spaces requires a structured, inclusive, and creative methodology.

Remember that this is an event that requires the involvement of many stakeholders and students, hence an important step is to plan the event in advance.

Good planning and good work organization will ensure the success of your venture.

Below you can find a step-by-step framework for organizing bootcamp.

Phase 1. PRE-BOOTCAMP PREPARATION.

Preparing for pre-bootcamp activities is crucial to ensure participants are well-equipped and ready to engage fully during the NBS Bootcamp.

Duration: 3-4 weeks prior to the bootcamp.

Activities:

- **Form Partnerships:** engage local stakeholders, such as environmental organizations, NGO`s, experts in the field of architecture, urban planning etc., and the private sector to mentor, or co-host the event. You have to engage the stakeholders to bootcamp and ensure an interdisciplinary mix.
- Try to identify campus or local problems: conduct pre-bootcamp interviews, or focus groups to better understand pressing local issues such as flooding, heat islands, biodiversity loss, or inefficient public spaces.
- **Collaborate with stakeholders** to pinpoint challenges that can be addressed through NBS bootcamp.
- **Set Goals of bootcamp**: define clear objectives and deadlines for the bootcamp, such as developing actionable prototypes, fostering community engagement, or building capacity for future NBS initiatives.
- Recruit the students and check if you engage adequate number of participants of bootcamp (stakeholders and students).

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- Familiarize yourself with the contents of the **GREEN SE curriculum** and others needed materials about NBS and successful NBS implementations.
- Develop needed additional educational materials, such as short, engaging videos explaining the importance of NBS, quizzes to test baseline knowledge about sustainability and NBS, infographics and fact sheets summarizing key information, prepare some icebreakers activities. You can use these materials during bootcamp.
- Try to plan and prepare a list of needed materials for prototyping solutions activities. Where possible try to use **DIY (Do-It-Yourself) concepts**. More specifically some potential investments might include common green roof and green wall plants, which are adapted to the local climate conditions, just as substrate and insulation and protection material for the green roofs. Other possibilities might include seed mixes, material for DIY bee hotels, nest boxes and a webcam, insect nets and determination material. The final selection of the targeted NBS will be made after discussions with all relevant stakeholders, and taking into account the solutions which might fit for various climatic conditions.
- Create an accessible online platform or learning management system (e.g., Google Classroom, Moodle) and grant access to all bootcamp`s participants.
- Plan your bootcamp – an agenda, a list of attendance, objectives, and determine the final result of bootcamp. Share the agenda and other needed materials with all participants by using a platform.
- Share GREEN SE curriculum with stakeholders so that they have time to familiarize themselves with its contents.
- Think about appointing mentors for students, plan to divide them into groups, introduce each group with mentors or facilitators to monitor progress and answer questions.
- Disseminate information about your bootcamp using your social media. Remember to document the bootcamp - take photos and short videos.

Checklist for Organizers

☐ Form Partnership with stakeholders.

☐ Recruits students.

☐ Check the final number of bootcamp participants.

☐ Develop and distribute learning materials (GREEN SE curriculum to stakeholders).

☐ Set up an online platform and ensure access for all participants.

☐ Schedule and promote bootcamp.

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☐ Provide clear deadlines for each bootcamp tasks. ☐ Assign mentors or facilitators to monitor progress and answer questions. ☐ Think about materials for prototyping solutions activities

Phase 2. BOOTCAMP DESIGN & IMPLEMENTATION.

Below you can find a suggested bootcamp structure.

This is an event involving several days of training on NBS and the opportunities it presents, a combination of learning and practice, gaining knowledge from experts. The goal is to familiarize participants with the manual **GREEN SE curriculum** and to propose a solution to a specific environmental problem that exists either on campus or in the local community.

The bootcamp structure is mandatory while the planned lengths of activities - steps are suggested, and can be adjusted as you choose.

Suggested and preferred formula of the event - on-site, especially for co-creation activities, inspiration activities and consulting part of bootcamp.

Bootcamp structure:

Step 1 - INTRODUCTION AND INSPIRATION.
Duration: max 2 days (1 day – an introduction part, 2 day – an inspiration part)
Introduction. ● Keynote talks from experts on successful NBS case studies and their impact (experts can participate in this event online) ● Local success stories to highlight community - specific solutions - presented by stakeholders. **Inspiration as Hands-On Activities.** ● Site Visits - include visits to local problem areas (e.g., a campus with poor drainage or a park with limited biodiversity) for participants to observe issues firsthand. ● NBS Demos - organize demonstrations of existing NBS projects, such as rain gardens, green roofs, or urban wetlands, to inspire practical approaches. ● Community Engagement **-** involve local residents in co-creating solutions, ensuring ideas are practical and accepted.
Step 2 - PROBLEM FRAMING.
Duration: max 2 days. **Flexible group activities, it can be combined with step 3 – Ideation Workshop.**

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- Facilitate breakout sessions to discuss campus/local challenges in detail, understanding local challenges.
- Combined with module 2 of curriculum **Challenge-based learning resources** for identifying specific urban challenges and developing multi-angle understanding of the problems.
- Try to enrich the classes with the groups of different activities/ methods you know, such as ice breakers activities.
- You can also use World Cafe Method.

Step 3 - IDEATION WORKSHOPS.

Duration: 1 day

- Use design-thinking methodologies like brainstorming, mind mapping, and rapid prototyping to generate ideas. Students need to work in groups, with collaboration with local stakeholders, NBS experts, community partners., people familiar with the NBS topics, academics, researchers, professors of technical issues.
- Combined activities with module 3 of curriculum **Solution oriented learning activities** for developing vision and a plan to address urban challenges through feasible projects powered by NBS, selected problems, also with module 1 of curriculum **Introductory materials** to i) the **theory**, **methodology & application** of NBS, ii) to international **best practices** of applying urban NBS in campuses and public spaces.
- Identify which type of NBS according to module 1 of curriculum participants will proceed .

Step 4. PROTOTYPING SOLUTIONS.

Duration: 3,5 days

- Create student teams and connect them with mentors and experts.
- Encourage participants to create low-fidelity prototypes using materials like clay, digital tools, or sketches to visualize NBS ideas. (each HEI has an amount to cover the expenses, only for co-creation design, not for implementation).
- Use technologies & tools: provide needed materials like plant seeds, compostable materials, or 3D printing resources to aid in creating tangible prototypes. The choice depends on the arrangements of the group.
- Use collaboration platforms like Miro, or Whiteboard for virtual collaboration and documentation.
- Start designing a prototype of NBS solution - use co-creation activities.
- Combined activities with module 4 of curriculum **Joining forces of SE and NBS stakeholders**: common characteristics, assets and transformative potential towards green transition and module 5 **Co-creation activities for bringing together SE, NBS stakeholders and local communities to co-design NBS solutions.**
- Develop the issue - How to collaborate with the stakeholder in the future – topic for students discussion.
- Feedback rounds – allow all teams to present developed prototypes to mentors, local authorities, and other participants for feedback.
- During each presentation they have to explain local challenges, solutions, ideas and present the prototype, 40 min for each group.

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Step 5. IMPLEMENTATION PLANNING.
Duration: 5,5 days, it could be flexible.
• Choose together the best prototype and plan how it can be implemented on your campus or in a public space. • Connect teams with mentors, grant programs, or local authorities for real-world application. • Guide participants to outline steps for implementing their solutions, including funding and stakeholder engagement. • Provide feedback sessions with participants.

Phase 3. POST-BOOTCAMP FOLLOW-UP.

Documentation:

Once your bootcamp is completed, don't forget to gather the necessary documentation to document its conduct - attendance lists, agenda, educational materials used, photos, videos, surveys.

4. Real-life examples

Here you can find examples of NBS-related bootcamps as indicative ideas pointing to sample issues discussed during the course, case studies and real-life examples. These real-life examples of NBS bootcamps can serve as inspiration for you, and can also motivate you to face similar challenges. As you know, stories and real-life examples are always more engaging and easier to remember than theoretical knowledge.

Get inspired:

- NBS EduWORLD International Course, an example of a summer school organised in 2024 in Greece for the school heads and teachers of both primary and secondary schools. This is a part of Horizon Europe project - NBS EduWORLD https://esia.ea.gr/nbs-eduworld-summer-school/#1674556150279-dcf6eddd-3c8e https://esia.ea.gr/nbs-eduworld-summer-school/#
- Biodiversity bootcamp organised in 2022 in USA for American cities. https://icleiusa.org/cohorts/biodiversity-bootcamp/

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- Skills Bootcamp: Climate Literacy for Sustainable Futures organised in UK and designed to provide participants with new skills, knowledge, and a holistic understanding of climate literacy, as highly valued assets in the Net-Zero era. https://www.bcu.ac.uk/courses/climate-literacy-for-sustainable-futures#fees_how_to_apply

- Green Advantage - Skills Bootcamp in Sustainability, an example of a British course designed for business leaders, managers and professionals who want to learn about climate and environmental challenges. https://www.aston.ac.uk/research/bss/abs/centres-hubs/aston-centre-for-growth/green-advantage

- Online Sustainability Bootcamp developed by Western Sydney University as an introductory understanding of the key concepts in sustainable development and a critical overview of the United Nations Sustainable Development Goals (SDGs) 2030 Agenda. https://westernx.edu.au/courses/sustainability-cert/?aad=BAhJImF7InR5cGUiOiJjb3Vyc2UiLCJ1cmwiOiJodHRwczovL3dlc3Rlcm54LmVkdS5hdS9jb3Vyc2VzL3N1c3RhaW5hYmlsaXR5LWNlcnQvIiwiaWQiOjc1ODIwNzM0fQY6BkVU--407e78844d99131fb968cbd8a9a5ede88a548db4&cl=1

- NBS EduWORLD Hackathon, an additional example that can inspire you to replicate nature engineering. An example of an online workshop on water challenges and implementing NBS. https://www.natural-solutions.world/blog/innovative-nature-based-solutions-education-nbs-eduworld-2024-hackathon

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