



ILCA
Innovation Laboratories
for Climate Actions



CASE STUDY

CLIMATE INNOVATION LABORATORY

Ștefan cel Mare University of Suceava, Romania

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INTRODUCTION

Importance of innovation and collaboration in addressing climate change

Climate change presents a monumental challenge, demanding solutions as diverse and interconnected as the problem itself. In this fight, two crucial weapons stand out: innovation and collaboration.

From renewable energy sources and carbon capture to climate-resilient infrastructure and sustainable materials, innovation is vital for transitioning to a low-carbon future. Addressing climate change requires tackling complex challenges like deforestation, food security, and extreme weather events. Innovation allows us to explore unconventional approaches and adapt existing technologies to meet these needs.

Innovative solutions can improve resource use, reduce waste, and optimize existing systems, leading to significant emissions reductions across various sectors.

On the other hand, no single entity has all the answers. **Collaboration** between scientists, engineers, policymakers, businesses, and communities' fosters knowledge exchange and accelerates progress.

Different stakeholders bring unique viewpoints and expertise to the table. Collaboration ensures a holistic approach that considers diverse needs and impacts. Sharing successful solutions and best practices across borders and regions facilitates wider adoption and increases the effectiveness of climate action.

Collaboration fosters trust and understanding between different groups, encouraging collective action and promoting long-term commitment to climate solutions.

Innovation alone cannot solve a global challenge like climate change. Without collaboration, new technologies and solutions may not be adopted widely or equitably. Similarly, collaboration without innovation risks stagnation and the inability to address the evolving complexities of the crisis.

The power of combined forces: When combined, innovation and collaboration create a powerful synergy. Innovative solutions can be shared and scaled more effectively through collaboration, while collaboration can inspire and guide the development of new, more effective solutions.

Innovation and collaboration are not simply tools; they are the foundation for a successful fight against climate change. By harnessing the power of both, we can develop and implement the solutions needed to create a more sustainable future for all.

RATIONALE AND OBJECTIVES OF THE LABORATORY

A green entrepreneurial mind-set starts with the right set of beliefs, values, and practices that guide entrepreneurs in creating and managing businesses that are environmentally and socially responsible. It's about recognizing the interconnectedness of business, society, and the environment and striving to create positive impacts for all three.

Ștefan cel Mare University from Suceava, Romania has embarked on a journey towards a greener mindset and practices, aiming to reduce its environmental impact and promote sustainability throughout its operations. This commitment is reflected in the university's strategic plan, which outlines a series of initiatives to foster a more environmentally conscious campus and community.

Objectives of the Laboratory:

*To trigger entrepreneurial behaviour to build **STUDENT STAND-UPS AND UNIVERSITY SPIN-OFFS**.*

To advance ecosystem integration by bringing together actors from different disciplines and industries.

DESIGN AND STRUCTURE

Physical and virtual space:

Physical space: A dedicated co-working space with collaborative areas and access to technology resources.

Virtual space: online communication tools, project management features, and virtual collaboration tools (whiteboards and modelling software).

Hybrid model: A combination of physical and virtual spaces to cater to different needs and geographical limitations.

Organizational setup: University-affiliated, leveraging academic expertise and research facilities.

Key roles: Diverse team members with expertise in various fields like science, engineering, business, design, and policy.

USV in the context of the ILCA project



USV wants to develop a culture of innovation that will, hopefully, and eventually lead to systemic and structural change in the way we operate at the institutional level.



The ILCA project can become a strong partnership model to strengthen the already existing cooperation between higher education institutions, businesses and research organizations and create new ones.



Take concrete actions in order to increase the impact of USV innovation and entrepreneurship activities with spill overs in the local and regional ecosystems in Suceava region and not only.



Create and disseminate invaluable knowledge and innovation capacity to build the necessary infrastructure to ensure the future green transition.



Increase our role to accommodate, build and foster deep cooperation and close links with the local businesses and communities so we can ultimately shape society.



Enhance the quality of our educational programs by offering mentorship and trainings in the field of digital transformation and responsible tourism.

Unique Features and Methodologies:

- ❖ Design thinking workshops, Facilitate brainstorming, prototyping, and iterative problem-solving.
- ❖ Challenge-driven approach: Focusing on specific climate challenges and set clear objectives for teams.
- ❖ Gamification: Using game elements to motivate participation, collaboration, and learning.
- ❖ Open innovation platforms: Allow external contributions and collaboration beyond the core team.
- ❖ Mentorship and coaching: Providing personalized support and guidance to teams throughout the process.
- ❖ Rapid prototyping facilities: Enabling quick testing and iteration of ideas.
- ❖ Networking and knowledge exchange: Fostering connections with experts and stakeholders in the climate action community.

INNOVATION PROCESSES AND TOOLS

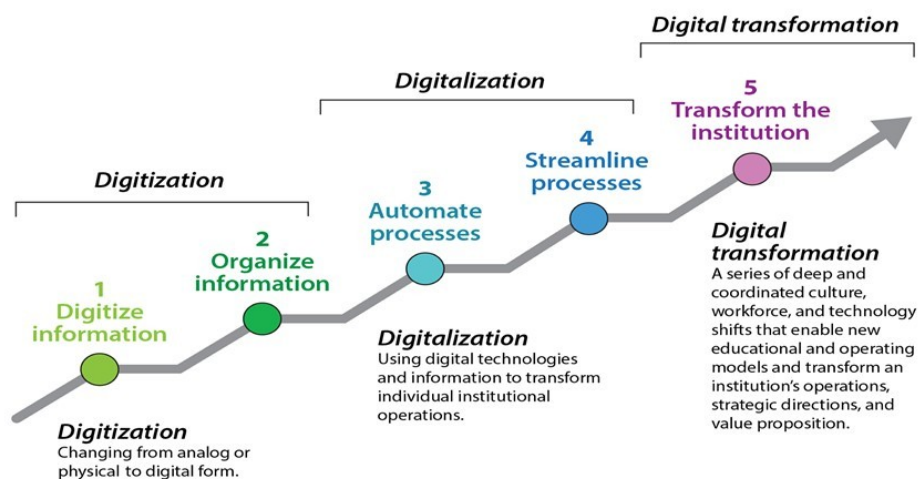
University of Suceava is in charge with the implementation of the actions related to:

- ❖ *Training and mentoring related to responsible tourism and digital transformation (1)*
- ❖ *Circular economy and sustainable use of natural resources (2)*
- ❖ *Climate transition and security (3)*
- ❖ *Materials and solutions enabling low carbon footprint lifestyles (4).*

(1). Training and Mentoring related to Responsible Tourism and Digital Transformation:

- **Description of the activity:** Equipping students and tourism professionals with knowledge and skills to adopt responsible practices (environmental, social, cultural) while leveraging digital technologies (e.g., online booking, data analytics) for sustainable, efficient, and visitor-centric operations. Activities include workshops, peer-to-peer mentoring, and technology adoption guidance.
- **Activities:**
 - Workshops on sustainable tourism practices, including waste management, energy efficiency, and community engagement.
 - Training on digital tools for marketing, booking, and visitor management that optimize resources and reduce carbon footprint.
 - Mentoring programs connecting experienced tourism professionals with emerging businesses to share responsible practices.
- **Goals:** Increase responsible tourism practices, improve destination sustainability, empower tourism businesses through digital tools, and enhance visitor experiences.

Lessons learned: The approach for "Digital transformation" started with the fact that digital transformation is not only about technology itself but also about changing organizational culture and how people work and interact with each other and (also with customers).

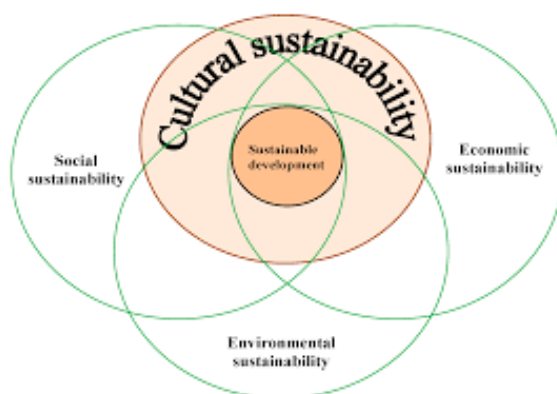


It is an ongoing process that can be tailored to the specific needs and goals of each company or organization. Digital transformation involves major changes in process and work systems and it is interlinked with the green transition towards a zero carbon economy.

The digital transformation of companies has the purpose to automate processes and thus increase the efficiency of a company's economic activities, using data to make better decisions, adopting new business models geared towards sustainability, creating communications and collaboration, and creating more tailored and green products.



The approach to sustainable tourism starts from the fact that the preservation of cultural heritage is very important and it can generate various economic benefits for the local community: from job creation - sources of income, to transfer and maintenance of craftsmanship skills, revival of heritage tourism, increased property values, enhancement of small business from rural areas and so on.



Why sustainable tourism?

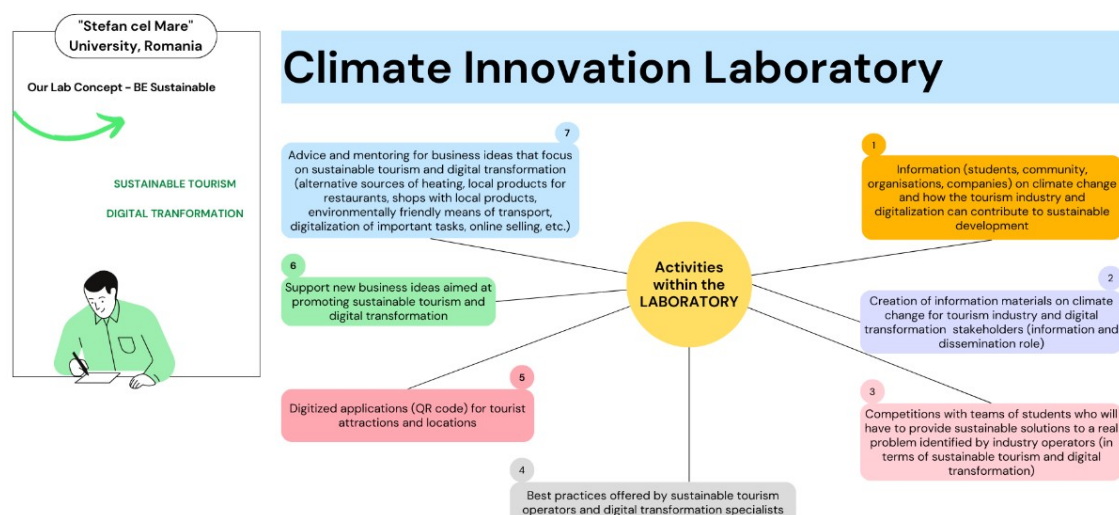
Can be considered an innovative idea as it has transformed cultural heritage in practices geared towards sustainability.



Therefore, the “Stefan cel Mare” University of Suceava has crafted a course that combines local traditions from Bucovina with the SDGs objective assumed by the UN. The reuse of abandoned buildings or old traditional houses is fundamental not only for reviving communities and improving quality of life but also for educating people on the importance of responsible consumption and using eco-friendly materials to build houses that can foster energy efficiency.

Activities within the Laboratory

- Information (students, community, organisations, companies) on climate change and how the tourism industry and digitalisation can contribute to sustainable development.
- Creation of information materials on climate change for tourism industry and digital transformation stakeholders (information and dissemination role).
- Competitions with teams of students who will have to provide sustainable solutions to a real problem identified by industry operators (in terms of sustainable tourism and digital transformation).
- Best practices offered by sustainable tourism operators and digital transformation specialists.
- Digitised applications (QR code) for tourist attractions and locations.
- Support new business ideas aimed at promoting sustainable tourism and digital transformation.
- Advice and mentoring for business ideas that focus on sustainable tourism and digital transformation (alternative sources of heating, local products for restaurants, shops with local products, environmentally friendly means of transport, digitalization of important tasks, on-line selling, etc.).
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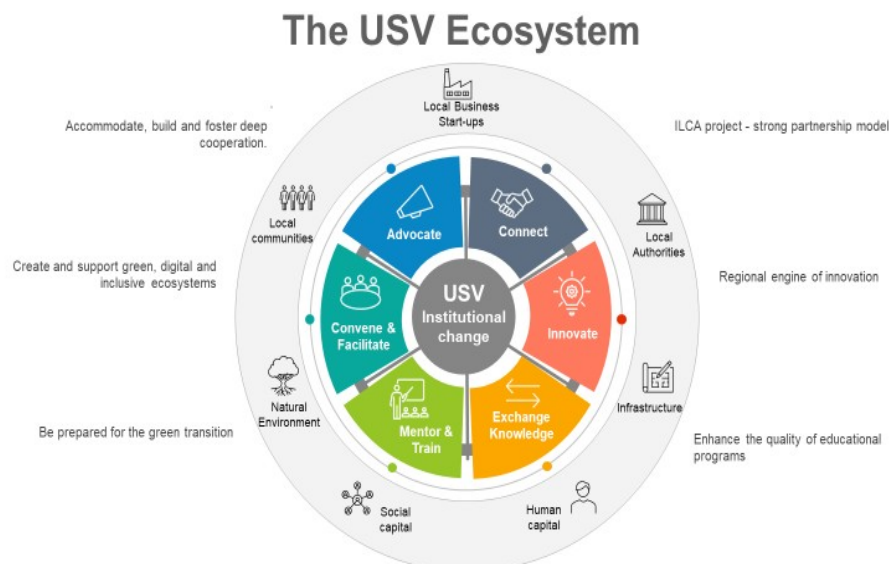
USV is incorporating environmental education into its curriculum, offering courses and workshops on sustainability, climate change, and environmental protection. The university is also organizing events and campaigns to raise awareness among its community about environmental issues and the importance of individual and collective action.

(2). Circular Economy and Sustainable Use of Natural Resources:

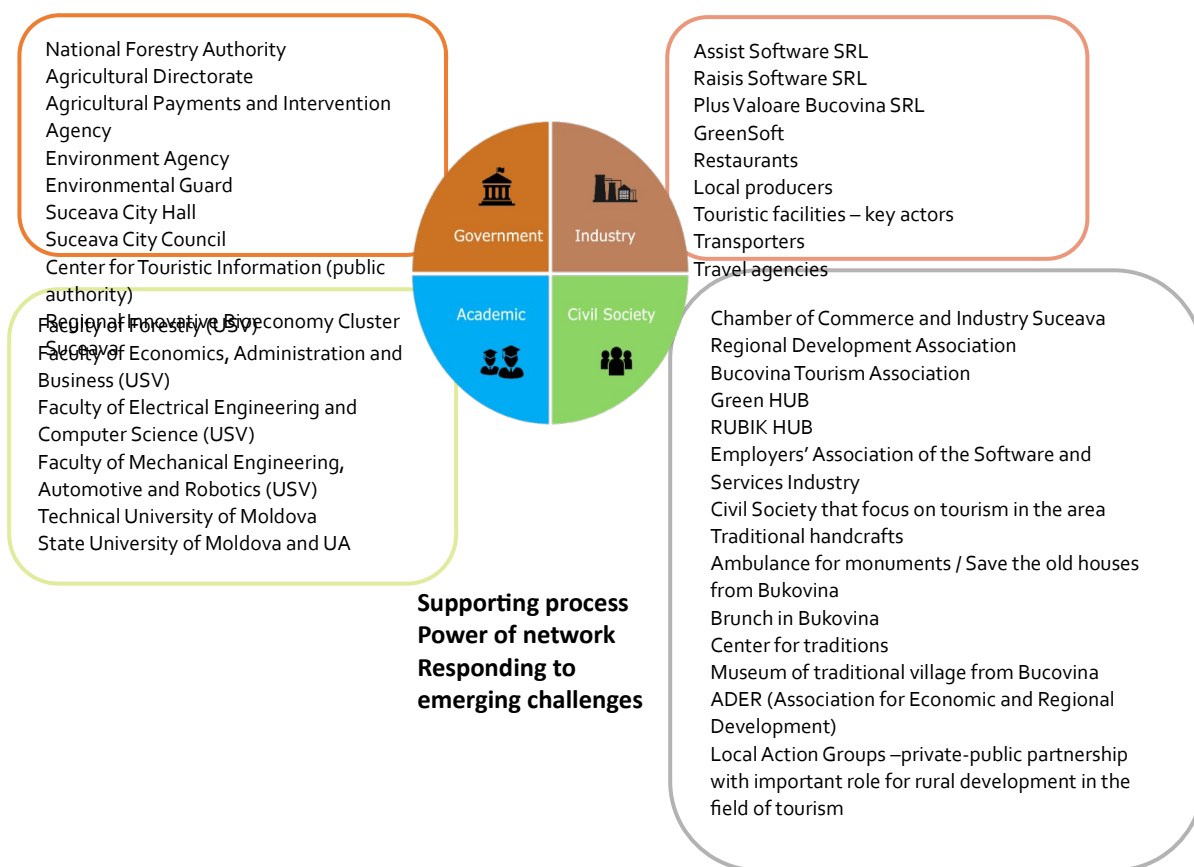
- **Description:** Promoting awareness and adoption of circular economy principles (reduce, reuse, recycle) to minimize waste and resource consumption in various sectors (e.g., agriculture, manufacturing, tourism). Activities include training on resource-efficient practices, promoting upcycling and reuse initiatives, showcasing sustainable product design, and facilitating collaboration between stakeholders.
- **Proposed activities:**
 - **Workshops on circular design principles and practices for products and services.**
 - **Training on sustainable resource management techniques for businesses and communities.**
 - **Educational programs promoting responsible consumption and waste reduction.**
- **Goals:** *Conserve natural resources, reduce waste generation and pollution, promote resource recovery and reuse, and foster a circular economy model.*

Key initiatives for green transformation at USV

- **Efficient energy management:** USV is implementing energy-saving measures across its campuses, including LED lighting, modern heating and cooling systems, and smart metering devices. These efforts aim to reduce the university's energy consumption and associated greenhouse gas emissions.
- **Sustainable waste management:** USV is transitioning towards a circular economy model for waste management, prioritizing waste reduction, reuse, and recycling. The university has installed waste sorting stations, composting facilities, and recycling bins to encourage responsible waste disposal practices among its staff and students.
- **Collaboration and partnerships:** USV is collaborating with local environmental organizations, research institutions, and businesses to share knowledge, expertise, and resources for sustainable practices. These partnerships foster innovation and accelerate the transition to a greener campus and community. (4. Collaboration and engagement)



Stakeholders play a crucial role in supporting the process of climate action, harnessing the power of networks, and responding to emerging challenges. By working collaboratively and inclusively, stakeholders can contribute significantly to building a more sustainable and resilient future for all.



(3). Climate Transition and Security:

- **Description:** Building resilience and capacity to adapt to climate change impacts while mitigating greenhouse gas emissions. Activities include climate risk assessments, developing adaptation plans, educating communities on climate action, supporting renewable energy adoption, and promoting energy efficiency.
- **Proposed activities:**
 - Workshops on circular design principles and practices for products and services.
 - Training on sustainable resource management techniques for businesses and communities.
 - Educational programs promoting responsible consumption and waste reduction.
- **Goals:** *Reduce vulnerability to climate change impacts, increase climate resilience, transition to low-carbon economies, and ensure access to clean energy.*
- **Green procurement:** USV is incorporating environmental criteria into its procurement policies, favoring products and services with minimal environmental impact and high sustainability standards. This approach extends to the procurement of building materials, furniture, and operational supplies.

(4). Materials and Solutions Enabling Low Carbon Footprint Lifestyles:

- **Description:** Promoting and developing materials and solutions that enable individuals and communities to reduce their carbon footprint in daily life (e.g., sustainable housing, renewable energy products, low-carbon transportation options). Activities include showcasing innovative solutions, advocating for policy changes, providing consumer education, and supporting the development of sustainable infrastructure.
- **Proposed activities:**
 - Research and development of sustainable materials and technologies for construction, transportation, and energy production.
 - Training on using low-carbon technologies and products in everyday life.
 - Educational programs promoting sustainable consumption and lifestyle choices.
- **Goals:** *Lower carbon emissions from individual lifestyles, accelerate the adoption of sustainable technologies, promote responsible consumption choices, and contribute to achieving climate goals.*

Key initiatives for green transformation at USV

- **Campus greening:** USV is enhancing its landscaping with native plant species and implementing green infrastructure projects, such as rainwater harvesting systems and green roofs. These initiatives promote biodiversity, improve air quality, and reduce the urban heat island effect.
- **Sustainable transportation:** USV is encouraging sustainable transportation options among its staff and students, promoting cycling and walking through dedicated bike paths, secure bike parking, and carpooling initiatives. The university is also exploring the possibility of electric vehicle charging stations.

FUTURE DIRECTIONS AND SUSTAINABILITY

Strategies considered in scaling up the impact and ensuring long-term Viability:

- **Dissemination and knowledge sharing:**
 - Publishing case studies and best practices sharing
 - Host webinars and workshops to share learnings with wider audiences.
 - Participating in conferences and events to raise awareness.
- **Partnerships and collaborations:**
 - Partner with research institutions, NGOs, and other stakeholders.
 - Co-develop and scale promising solutions jointly.
 - Leverage complementary expertise and resources.
- **Funding diversification:**
 - Attracting funds from public and private entities.
 - Offering consultancy services or develop fee-for-service programs.
 - Engage in impact investing partnerships.
- **Metrics and impact evaluation:**
 - Developing clear metrics to track progress and impact.

- Conducting regular evaluations to adapt and improve processes.
- Showcase success stories to attract funding and collaborators.

Replication and Adaptation:

- **The model can be adapted to different contexts, tailoring** challenges and solutions to specific regional needs, considering cultural and economic differences.
- **Replicate core elements:**
 - Using the design thinking process and collaborative approach can be created online communities and virtual collaboration platforms.
 - Offering training and resources for facilitators and team members.
- **Focus on specific sectors or challenges:**
 - Launching targeted labs focused on agriculture, energy, or adaptation.
 - Partnerships with industry leaders to co-create solutions.
 - Addressing niche problems with specific expertise and resources.
- **Open-source resources and toolkits:**
 - Sharing methodologies, templates, and best practices online.
 - Encouraging local adaptation and implementation.
 - Fostering a global network of Innovation Labs for collective impact.

Scaling up and replication require careful planning, adaptation to local contexts, and ongoing collaboration with relevant stakeholders. The specific strategies and opportunities will depend on the unique characteristics and goals of your Innovation Lab.

CONCLUSIONS

The transition to a green economy is not just an environmental imperative; it also presents a tremendous opportunity for businesses to thrive while doing good for the planet and society. Embracing a green entrepreneurial mindset is a proactive approach to sustainability, innovation, and long-term success.

The green transformation efforts at USV are not just about reducing the university's environmental footprint but also about promoting environmental awareness, education, and responsible practices among its students, staff, and the wider community. By adopting a green mindset, USV is setting an example for a more sustainable future for higher education institutions.

Partners of USV ILCA Innovation Laboratory:

European School of Sustainability Science and Research - <https://esssr.eu/>

Green Digital Innovation HUB - <https://dih.green/>

ADR Nord Est - <https://www.adrnordest.ro/>

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