

# GENB

YOUNG BIOVOICES  
FOR A SUSTAINABLE  
FUTURE

*factsheet*

## BIOECONOMY ESCAPE GAME! INSIGHTS FROM THE ITALIAN LIVING LAB WITH THE HIGH SCHOOL ITT MONTANI OF FERMO

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LIVING LABS ORGANIZER



FVA NEW MEDIA RESEARCH



### OUR CONSORTIUM



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# WHAT ARE *Living Labs?*

Living Labs, a relatively novel concept that emerged in the early 1990s (e.g., Bajgier et al., 1991) has transformed the landscape of research and development. While there is no universally accepted definition for Living Labs, Professor William Mitchell, who is most prominently associated with Living Labs, defines them as 'a research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real-life contexts'.

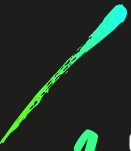
Distinguishing themselves from traditional labs, they emphasize user-centricity, experiential learning, real-life context, and co-production of knowledge through co-creation methodologies. Although the users are at the forefront of Living Labs, they usually involve heterogenous actors. Leminen (2012) describe the membership of Living Labs as the 4P partnership 'public-private-people partnerships'.

The GenB Living Labs had a clear objective: Co-creating innovative approaches, formats, materials and tools, through the cooperation between children, young adults, parents, teachers and other formal and non-formal education professionals, to provide educational and informational toolkits on bioeconomy in general and bio-based sectors.

Living Labs function in a structured process involving four main stages. While the names of these stages may vary across authors and sectors (see e.g., Ståhlbröst and Holst 2012), these stages which may be iterative depending on the context, form an essential framework for the activities of Living Labs. The GenB Living Labs adapted the stages outlined by Westerlund and Leminen (2011) and featured in the Inmédiats Handbook (Millet et al. 2014): co-creation/co-design, exploration, experimentation and evaluation.



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- 1 Co-creation/co-design:** This is the ideation stage. With the help of different co-creation tools and methodologies, the participants develop a portfolio of ideas aligned with their desired goals.
  - 2 Exploration:** With the portfolio of ideas, at this stage the participants explore the ideas in more detail and together reach a consensus on which ideas they would like to pursue. Here, they develop prototypes of the ideas or bring them to life, ready to deploy them to the target population in the next stage.
  - 3 Experimentation:** At this stage, the participants test the developed prototypes or products with the target population, gathering feedback and insights to evaluate their effectiveness.
  - 4 Evaluation:** In the final stage, the participants reflect on how their products were received by the target population, assessing whether they reached their intended goals. Any necessary adjustments or adaptations are identified to optimise the project's alignment with the desired outcomes.

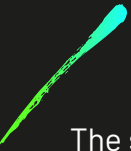
The GenB Living Labs were implemented in the second semester of the school year 2022/2023 and specifically from March to June 2023 in Austria, Italy and Slovakia for three age groups each 4 to 8, 9 to 13 and 14 to 19. Each Living Lab was designed to have a minimum of three workshops while the pupils and young adults, together with their teachers and other actors that they decide to involve would also work on their ideas between the three workshops.

Recognising the participants' limited prior knowledge regarding the topic of bioeconomy, the first workshop of the GenB Living Labs served as an introductory session. Its main aim was to familiarise the participants with the subject matter and its relevance to their everyday lives, all presented in a manner suitable for their age group. With a concise yet impactful approach, the session, only touched on the first stage of Living Labs, co-creation/co-design, ideation.

Nevertheless, during the period between the first and the second workshop, the participants emerged into the co-creation/co-design stage building on the knowledge acquired in the first stage. With the support of their teachers and/or with the staff involved, the children and young adults discussed the key takeaways from the first workshop and embarked brainstorming to generate project ideas for further development within the process.

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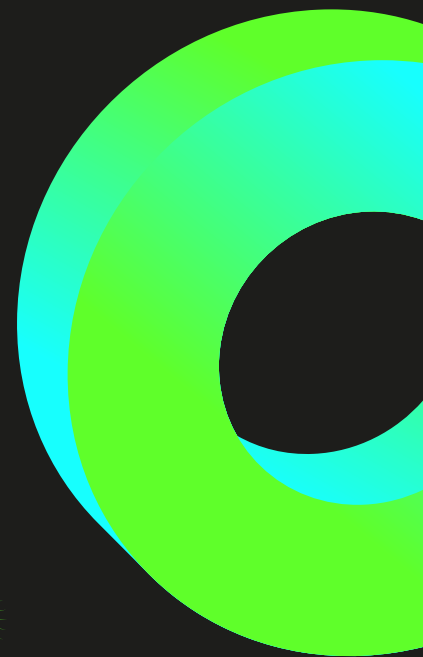


The second workshop, scheduled approximately two weeks after the first, allowed participants ample time to brainstorm, while ensuring the newly acquired knowledge about bioeconomy remained fresh. Representing the second stage of the Living Labs process, exploration, the second workshop aimed to finalise the collection of ideas and narrow down the portfolio to feasible projects that could be implemented by the group or in smaller teams within the given timeframe. The selected ideas were presented to the group, providing an opportunity for the rest of the participants to suggest changes. Finally, tasks were assigned, and a timeline was established.

During the period leading up to the final workshop, the participants worked in developing their ideas as intended.

The third workshop scheduled at least four weeks after the second, to provide the participants with ample time to finalise their ideas, marked two significant stages in the Living Labs process: exploration and evaluation. Firstly, the exploration stage, involved the presentation of the participants' completed projects to a larger group of their peers and/or to the target audience of their projects, if different. Secondly, after the showcase, the participants then discussed the reception of their projects and considered any necessary adjustments and also shared their experiences of the whole process, representing the evaluation stage of the Living Labs. In cases where time was limited, the evaluation phase could also extend beyond this workshop.

Although this third workshop marked the conclusion of the GenB Living Labs, within the schools or leisure centres, they are highly encouraged to consider potential for further implementation of the developed ideas as well as the integration of the bioeconomy in the future.





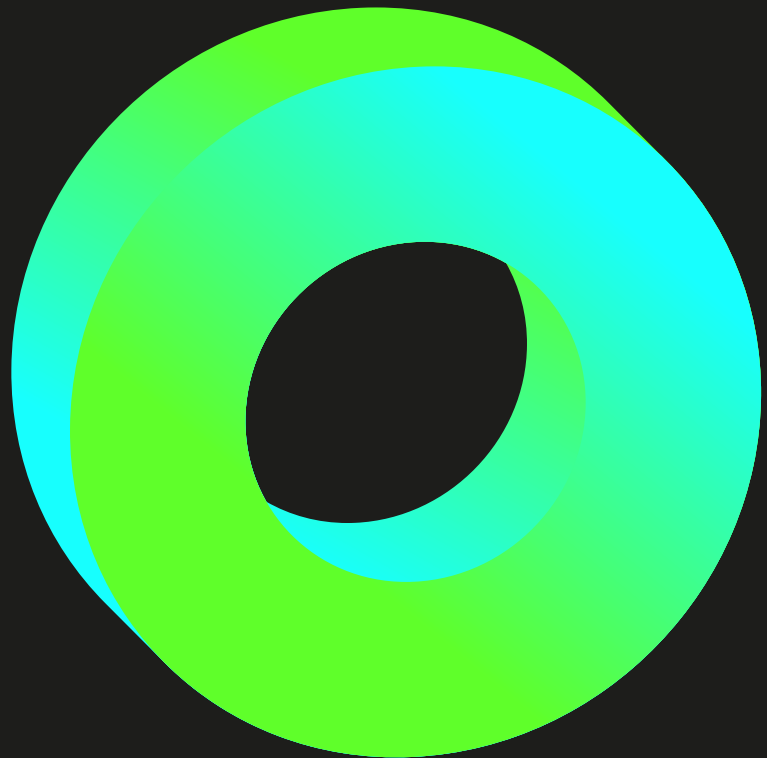
# GENERAL CONCEPT OF *the living lab*

In the context of the GenB living labs, Italian partners FVA – New Media Research engaged a high school class of the chemistry course of the ITT Montani in Fermo, Marche region, to co-create an innovative educational format, based on the spectacularisation of science through live experiments, shows and gamified experiences. The aim is to raise awareness on bioeconomy through an experiential live activity such an escape game.

Do you know what is an escape game? It is an immersive adventure in which groups of

participants attempt to find clues and solve a series of puzzles to escape before time runs out!

The concept developed by the ITT Montani was therefore based on the following narrative: Our planet is trapped in a dangerous linear model of production, consumption and lifestyle... let's find a solution through the Bioeconomy escape game!



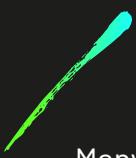


## ACTIVITIES *implemented*

The first workshop took place on 23 March in Fermo and students and teachers participated in a capacity building activity, whose aim was to consolidate knowledge on the circular bioeconomy, its challenges, terminology and controversial issues, also with support of quizzes and games to make the session more interactive.

The first workshop took place on 23 March in Fermo and students and teachers participated in a capacity building activity, whose aim was to consolidate knowledge on the circular bioeconomy, its challenges, terminology and controversial issues, also with support of quizzes and games to make the session more interactive. FVA also brought to the class a few samples of biomaterials and bio-based products, which are part of the Bioeconomy Village. This helped students and teachers to explore this little exhibition, ask questions to deepen some contents and be inspired for the following brainstorming on the ideas to be implemented during the living lab. For the majority of the students, it was the first time in which they had the chance to familiarise with bio-based products, feel and touch the bioeconomy through practical examples. Indeed, they showed a great enthusiasm about this opportunity, as they were able to understand what are the concrete alternatives to substitute fossil-based products and applications in everyday life.





Many ideas emerged during the brainstorming and the Bioeconomy escape game was finally identified as the most innovative, attractive and engaging format to be developed. Students and teachers were really committed to start drafting the first concepts and contents, that were detailed during the second workshop, which took place online on 3 May. This second meeting focused on the definition of the specific messages to convey, topics to be addressed and quizzes and enigmas to develop. This paved the way towards the co-creation of the game's structure, that was discussed in the third online workshop before the summer break. With the definition of key experiments to be done during the game, as well as the main narrative, the teachers, students and parents will keep on working on fine-tuning the format towards the final showcase.

In fact, ITT Montani, with the support of GenB partner FVA, will present the escape game in the context of two large scale events foreseen in Italy next October: Maker Faire in Rome (on 20 October) and Fermhamente in Fermo (on 22 October).

This will give the chance to reach additional audience, that will be informed about the whole living lab experience, introduced to scientific experiments conducted by the students and will finally learn more about the bioeconomy through a gamified, immersive and exciting experience!

The format will be ready to be replicated in both live and online settings.





## THE LIVING LAB *in numbers*

**Number of Living Labs organised (total):** 1 living lab with high school students and teachers

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**Number of activities and experiments implemented (total):** 3 workshops were conducted in the co-creation phase and 1 final event will be organised to showcase the living lab's outcomes in the context of 2 large scale events. The escape game will consist in around 15 educational tools about the bioeconomy, among experiments, quizzes and enigmas to engage participants in a playful way.

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**Number of students reached (total):** 24 students, 4 teachers during the co-creation phase. 10 parents and additional participants will be engaged in the final showcase of the escape game (expected audience from 60 to 100 people).

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