



# WP2

## Inspire, Inform & Educate

### Implementation Plan for WP2

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<b>Abstract</b>	This document provides a detailed overview of planned WP2 “Inspire, Inform & Educate” formats and activities, engaging with youngsters of different age groups as well as their parents, teachers, and other multipliers. This implementation plan will be updated every six months and will serve as a guidebook for the partners in the implementation of WP2 activities.
<b>Keywords</b>	Engagement, education, inspiration, bioeconomy, young people, youth, sustainability

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The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies nor any person acting on their behalf.

## Table of Abbreviations and Acronyms

Abbreviation	Meaning
AIJU	ASOCIACIÓN DE INVESTIGACIÓN DE LA INDUSTRIA DEL JUGUETE CONEXAS Y AFINES
APRE	Agency for the Promotion of the European Research
AT	Austria
BE	Belgium
BTG	BTG BIOMASS TECHNOLOGY GROUP BV
DE	Germany
EL	Greece
ES	Spain
EU	Pan-European
EUN	EUN Partnership AISBL
FCL	Future Classroom Lab (a facility at European Schoolnet)
FVA	FVA SAS DI LOUIS FERRINI & C
HSPN	HELLENIC SOCIETY FOR THE PROTECTION OF NATURE
IBL	Inquiry based learning
IP	Implementation Plan for WP2
IR	Report on Inspire, Inform and Educate activities
IT	Italy
KPI	Key Performance Indicator
LOBA	GLOBAZ, S.A.
NL	The Netherlands
PEDAL	PEDAL CONSULTING SRO
PT	Portugal
Q-PLAN	Q-PLAN INTERNATIONAL ADVISORS PC
QR	Quick R
SK	Slovakia
SPW	Science Projects Workshop (a Scientix format)
STEM	Science, Technology, Engineering, and Mathematics
T	Task
UNIBO	ALMA MATER STUDIORUM - Università di Bologna
WP	Work Package
y.o.	Years old
ZSI	ZENTRUM FÜR SOZIALE INNOVATION GMBH

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## 1 Executive Summary

WP2 maximises the exploitation of contents and innovative approaches collected and co-created in WP1 through an integrated package of “Inspire, Inform and Educate” activities tailored to all the GenB target ages, teachers, and other multipliers, in local languages in partners’ countries, in the context of large-scale events, ad hoc settings and piloting schools. WP2 objectives include:

- To grow the citizens, workforce, and decision makers of the sustainable future by increasing awareness of the environmental, social, and economic benefits of sustainable and circular bioeconomy and bio-based sectors (T2.1)
- To experiment new ways of attracting talent in the life science, technology, and the bioeconomy opportunities (T2.2)
- To promote the transition towards a more sustainable production, consumption, and lifestyle of the new generations (T2.3)
- To maximise the impact of GenB by channelling the bioeconomy education strengthening the knowledge of teachers (T2.4)
- To increase GenB impact and to reach wider audiences by engaging and supporting multipliers (T2.5)

This document provides the first implementation plan for WP2 “Inspire, Inform & Educate” activities, and will be refined and revised every six months. The WP leader (BTG) coordinated the preparation of this document, defining the methodological approach with the support of all format leaders (AIJU, APRE, BTG, EUN, FVA, and PEDAL), and in coordination with WP3 leader (FVA), to ensure the adoption of a similar approach for the implementation plan of WP3 (D3.1).

The objective of this deliverable is to provide a practical guidebook for the partners in the implementation of WP2 activities, providing for each task:

- **overview of each activity**, with target audiences, objectives, KPI and target countries
- **objective and expected outcomes**
- **description of the activity**, to provide an overview of how the activity will take place, what are the most suitable contexts
- **inspirational previous experiences**: since GenB is deeply rooted in previous projects like [Transition2BIO](#), [Biobridges](#), [BIOVOICES](#), [BLOOM](#), [Allthings.bioPRO](#), as well as experiences from similar initiatives inspiring and informing young people and other persons, this document aggregates the most relevant previous experiences, among the ones mapped and analysed. The aim is to identify and extract lessons learnt to be implemented for the design of WP2 activities including tips, with a particular focus on what worked and what didn’t work
- **guidelines for the implementation**, with the aim of providing a step-by-step implementation plan for the partners to organise the activities. It should be noted that some guidelines for the implementation will be further elaborated in the next steps of



GenB project, in collaboration with task leaders and all partners responsible for the implementation.

## 2 Introduction

### 2.1 Background on the GenB project

GenB contributes to the implementation of the updated 2018 EU Bioeconomy Strategy and the European Green Deal priorities, and the achievement of a climate-neutral Europe by 2050 and the Sustainable Development Goals, involving the most relevant awareness and education EU funded projects and initiatives, wide European and International school networks, and experts in socio-economic science and humanities.

GenB overall objective is to raise the Generation Bioeconomy (GenB), aware, sensitive, and interested in environmental issues, sustainability, and circularity.

### 2.2 Target groups

Within GenB, the following target groups are distinguished (see Table 1): Pre and early-school 4-8 years old, Elementary school 9-13 years old, High school 14-19 years old, Teachers, Multipliers, Parents, Policy makers. As shown in the table below target groups can be grouped into four clusters (Young people, Multipliers, Parents and Policy makers).








Young people	Multipliers
 Pre- and early-school (4-8 y.o.)	 Teachers (formal education professionals targeting all ages students)
 Elementary school (9-13 y.o.)	 Other multipliers (non-formal education professionals: youth organisations, community groups, museums, science communicators, amusement parks, journalists and media, NGOs). Experts groups and communities of practices in education.
 High school (14-19 y.o.)	
Parents	Policy makers
 Young people' parents and in general the families.	 Public authorities and policy makers related to education at local, national and European level (Ministries of Education, European Commission DG R&I and DG Education and Culture).

Table 1: GenB target groups

### 2.3 WP2 Objectives

WP2 maximises the exploitation of contents and innovative approaches collected and co-created in the first Work Package<sup>1</sup> through an integrated **package of “Inspire, Inform and Educate” activities** tailored to all the GenB target ages, teachers, and other multipliers, in local

<sup>1</sup> WP1 “Co-creation of innovative approaches” co-creates innovative approaches for awareness, information and education on bioeconomy, environmental issues, sustainability and circularity and cooperation between teachers, parents and youth to drive collaboratively the bioeconomy transition towards a more sustainable production, consumption and lifestyles designing tailored toolkits.

languages in partners' countries, in the context of large-scale events, *ad hoc* settings and piloting schools (reached mainly through EUN and HSPN).

WP2 objectives include:

- To grow the citizens, workforce, and decision makers of the sustainable future by increasing awareness of the environmental, social, and economic benefits of sustainable and circular bioeconomy and bio-based sectors (Task 2.1)
- To experiment new ways of attracting talent in the life science, technology, and the bioeconomy opportunities (Task 2.2)
- To promote the transition towards a more sustainable production, consumption, and lifestyle of the new generations (Task 2.3)
- To maximise the impact of GenB by channelling the bioeconomy education strengthening the knowledge of teachers (Task 2.4)
- To increase GenB impact and to reach wider audiences by engaging and supporting multipliers (Task 2.5)

#### 2.4 WP2 Organization

For the implementation of WP2, a distinction is made between formats, tasks, and activities.

**Format** refers to a general plan of organization, arrangement, or choice of material. As specified in the Grant Agreement, in GenB up to 17 different formats will be implemented. The intention of GenB is to explore formats in two ways.

- Firstly, to assess what worked and works best when implementing a specific format.
- Secondly, to assess how best to combine and integrate different formats, not only those that are part of WP2 but also formats included in WP1 (Co-creation of innovative approaches) and WP3 (Engage, Empower & Take a role).

For each format in WP2 a **format leader** is in charge. An overview of the format leaders is presented in Annex 1. (In principle) the format leader has prior experience developing and applying the format in (earlier or ongoing) EU-funded bioeconomy project. In GenB, the format leader will transfer knowledge on the format. Knowledge transfer shall first and foremost be targeted at internal parties (project consortium members), but external parties (third parties) could also benefit.

For use within GenB, it may be necessary to adapt the format (e.g., modify the visualisation, refine the scope, rephrase the content, translate the content, etc.). The next Chapter includes an overview of the GenB formats, indicating for each format if and what adaptations are considered necessary.

The 17 GenB formats are clustered into five different **tasks**, reflecting the five WP2 objectives, as follows:

- **T2.1 Inspire and inform young people on sustainable and circular bioeconomy and bio-based sectors:** This task showcases inspirational real-life examples of bioeconomy and bio-based products. Lead: HSPN.
- **T2.2 Inspire and inform students in bioeconomy careers.** This task experiments activities to attract new generations on bioeconomy related careers. Lead: BTG.
- **T2.3 Educate young people to promote the biotransition:** This task promotes sustainable and circular behaviours and lifestyles through the delivery of dedicated educational activities, ... *using the toolkits developed in T1.4*. Lead: BTG.
- **T2.4 Educate teachers in teaching the bioeconomy:** This task equips teachers with a package of knowledge and capacities to train their students in bioeconomy through online courses. *Based on the toolkits developed in T1.4*. Lead: EUN.
- **T2.5 Inform and educate other multipliers to promote the bioeconomy.** This task engages and supports non-formal educators (such as museums, theatres, festivals, etc.) ... to act as multipliers *by adopting the toolkits developed in T1.4*. Lead: PEDAL.

Each task is led by a **task leader**. The role of task leaders will be less intense at the planning stage, and it will be more important at the reporting stage, as they will be charged mainly with co-authoring both editions of the Implementation Report (initial release: M18/April 2024; final release: M28/Feb 2025).

An **activity** is something you do, or something that happens. In the context of GenB, activity refers to the implementation of a format in a specific country by the **activity leaders**. Depending on the context in which the GenB activity is implemented, it may be necessary to make (further) refinements to the GenB format. As each GenB format will be implemented in between 1 and 9 countries, there are ca. 75 activities in total<sup>2</sup>. Many but not all activity leaders have prior experience implementing the activity, or something similar, in their respective countries.

The organization levels and the different roles in WP2 are summarised in **Errore. L'origine riferimento non è stata trovata.**:

Role	Responsibility in WP2	Tasks in relation to current report ( <i>Implementation Plan for WP2</i> )
WP leader	Provide support and keep eye on general progress in WP2	Monitor general progress of WP2. Document editing.
Task leader	Monitoring tasks implementation progress;	-

<sup>2</sup> Where relevant and practical, multiple formats can be combined when implementing an activity.

	Provide content for the Report on Inspire, Inform and Educate activities (IR)	
Format leader	Transfer knowledge on the format	Provide basic/background information about the format in the Implementation Plan (in Chapter 3)
Activity leader	Planning and implementing the format in a specific country (or pan-European)	Provide country-wise (or pan-European) planning reports in the Implementation Plan (in Ch. 4-11)

Table 2: Management levels and roles in WP2

## 2.5 Scope of the Implementation Plan for WP2

The current document is called “Implementation Plan for WP2” (abbreviate to: IP). It aims to serve as a comprehensive **Guidebook to project partners** that are charged with the implementation of WP2 formats<sup>3</sup>. It serves as a training tool by:

- Detailing previous experience with the format.
- Indicating where existing materials can be sourced.

Secondly, it outlines country-by-country **partners’ implementation plans**. The current plans are largely indicative. Some include a more detailed planning and/or activities that were implemented/completed early. The country-by-country plans will be refined over time and documented in future releases of the current deliverable due in M13/Nov 2023, M19/May 2024 & M25/Nov 2024.

The remainder of this document is built up as follows:

- Chapter 3 include task-wise descriptions of the WP2 formats.
- Chapter 4 describes WP2 activities tentatively planned in Austria.
- Chapter 5 describes WP2 activities tentatively planned in Greece.
- Chapter 6 describes WP2 activities tentatively planned in Italy.
- Chapter 7 describes WP2 activities tentatively planned in Netherlands.
- Chapter 8 describes WP2 activities tentatively planned in Portugal.
- Chapter 9 describes WP2 activities tentatively planned in Slovakia.
- Chapter 10 describes WP2 activities tentatively planned in Spain.
- Chapter 11 describes WP2 activities that are tentatively planned pan-European.

Finally, the Appendices cover:

<sup>3</sup> This report will not detail implemented GenB activities. These shall be reported continuously in WP6 (activity implementation spreadsheet) and WP4 (monitoring of key performance indicators) and periodically in WP2 (Implementation Report, due in M18 – April 2024 & M28 – February 2025).



- Appendix 1 lists Activities (formats), Key Performance Indicators and target groups.
- Appendix 2 lists the geographical distribution of activities (formats)

## 2.6 WP2 Implementation timetable

Based on the detailed information provided by the partners in the country-by-country implementation plans, an overall planning for the implementation of WP2 has been compiled by the WP leader. The plan is presented in the form of a Gantt chart. In the next chapter, the Gantt chart is shown in five parts, with individual parts dedicated to each of the five WP2 tasks.

Formally, as documented in GenB's Description of Action, all WP2 activities are to be implemented within the period M6 – M28. This is reflected in the header for each sub-task.

In practice, certain activities in WP2 are most likely to take place later during the project, as they also depend on the planning and/or outcomes of other WPs, in particular WP1 (Co-creation of innovative approaches) and WP3 (Engage, Empower & Take a role). Therefore, the majority of activities in Tasks 2.3, 2.4 and 2.5 are foreseen for the second half of the project.

There are also a number of activities in WP2 that were implemented already, as a relevant opportunity presented itself. This has been the case in particular in Task 2.1 and in the GenB countries that also participated in the Transition2BIO project (Austria, Greece, Italy, Portugal, Slovakia). Because the materials needed for implementation were already available, sometimes implementation took place even before the formal start of WP2 in April 2023.

Several partners plan to combine, or have already combined, the implementation of multiple sub-tasks. Such combinations and synergies are encouraged, in particular when these lead to widened outreach and higher impact.

In the Gantt-chart, green check marks indicate that an activity has already been implemented, whereas exclamation marks indicated activities planned to be implemented in the context of a specific event. If neither is the case a time window (some narrow, some wider) for the activity is shown.

The Gantt-chart shall be considered indicative mainly, and will be refined in the course of GenB implementation. Updates are scheduled for M13/Nov 2023, M19/May 2024 and M25/Nov 2024.

### 3 Descriptions of the WP2 formats

#### 3.1 Inspire and inform young people on bioeconomy

Task 3.1 “Inspire and inform young people on sustainable and circular bioeconomy and bio-based sectors” will showcase inspirational real-life examples of bioeconomy and bio-based products through the following formats and activities:

- Task 2.1a: “Hands-on labs” and playful activities in each country
- Task 2.1b: “Bioeconomy village” at large scale events
- Task 2.1c: “Inside the bioeconomy” experimental exhibitions
- Task 2.1d: “BioArt Gallery” at large scale events





Activity	Target	What for	KPI	Target Countries
Hands-on labs and playful activities		Playful activities and hands-on labs with bioeconomy experiments (including activities like creating biomaterials)	#400 young people	AT, IT, SK, ES, EL, BE, PT, NL
Bioeconomy village at large scale events		Format promoting bioeconomy in the context of large-scale events to attract interest, raise awareness and stimulate curiosity and discussion	#40.000 people	SK, EL, IT, PT
Inside the bioeconomy experiential exhibit		Bio-based experiential exhibit in existing public spaces	#4.000 people	BE, ES, PT, NL
BioArt Gallery (in 9 languages)		Formats (large pictures; roll-ups) promoting bioeconomy in the context of large-scale events	#40.000 people	EU

Table 3: WP2 formats to inspire and inform young people on bioeconomy

Each of these formats is briefly described below.

##### 3.1.1 Task 2.1a: “Hands-on labs” and playful activities in each country

– **Objective and expected outcomes**

Kids play an important role in driving the change toward a more sustainable consumption and lifestyle, not only because they are the adults of tomorrow's adults, but also because they act as multipliers inside the families (especially with older generations, like grandparents).

The aim of these experiential events was to raise awareness and facilitate the understanding of bioeconomy through hands-on activities, informing and educating kids about all bioeconomy areas (natural ecosystems, primary production, processing), for the production of food, materials and energy, by touching, feeling, smelling, and exploring the bioeconomy.

To help guide young people in making sustainable choices in their formative years, the labs for kids seek to communicate knowledge of the bioeconomy and bio-based solutions in an easy and comprehensive way. This is achieved by focusing on familiar and everyday environments that kids find themselves in.

The goal is to deploy these activities in contexts where the kids and families are already participating (museums, festivals, fairs, school activities, etc.), thus maximising the impact.

The labs for kids build on experiences like the “Bioeconomy Village” (see section 3.1.2) and the “Gallery” implemented in BIOWAYS and BIOVOICES at large-scale international exhibitions and in different nations in the context of Transition2BIO project. They also draw from the BIOVOICES book for kids “What’s Bioeconomy?” and the associated extensive knowledge and testing that went into creating the book for children. All the information in the book was validated by 32 experts from academia and industry in a scientific committee.

Expected outputs include methodologies for the organisation of awareness-raising activities targeting kids and specific guidelines on how to create experiments for kids at home.

The labs for kids are targeted at children aged 5 to 8 years old. However, the lab experience also helped to educate kids’ parents, grandparents, teachers, and other adults that participated together with the children in their experiments.

– **Description of the activity**

Given the broad range of environments and cultures in which these labs were implemented, it was essential that a certain degree of flexibility remained in choosing the topics for the lab experiments. However, a general set of core topics has been identified based on familiar environments for children: home, school, countryside, seaside, and the city (supermarket and park). Based on these contexts, kids made small experiments that touched on several important aspects of the bioeconomy, including the circular economy, sustainable production, consumption and lifestyle, climate change, ecosystems, biodiversity and planet’s protection, end-of-life, biodegradability/composability, biorefinery, biomass, etc.

The Hands-on labs for kids were deployed in the context of Transition2BIO in different environments and countries. In order to organise the logistics and promotion of the hands-on labs, conceptual support, briefing documents and experiment leaflets (see Figure 1) were produced in different languages and are available here.

Ten (10) experiments were developed using simple materials from the home (the first five experiments can be run with minimal equipment e.g. without a stove/microwave). Thanks to the experiments, the young generations can discover many uses for bio-waste (e.g. coffee-

grounds, orange peels and eggshells), and see how they can be transformed into products such as cleaning scrubs, natural colour, paper, and bioplastic. The following experiments were developed:

- coffee scrub
- natural colour fun
- seedballs
- wind catcher
- biogas factory in a bottle
- biodegradable pots
- blossom paper
- bioplastic from oranges
- bioplastic from milk
- biobased cleaner



Figure 1 – Hands-on lab; briefing document on coffee scrub

– **Inspirational previous experiences**

Several hands-on labs were conducted by Transition2BIO. Based on the methodology provided, the labs were organised in different contexts and formats, confirming the flexibility and adjustability of the concept and materials available.

Hands-on labs were implemented in different contexts such as:

- Large scale events (e.g. “Science in Game – super researchers for planet’s future” event, EU Researchers’ Night, “Circular economy and plastics: theory and practice with a 3-D printer” event, “Traditions of the Slovak Countryside” fair, “NaturFutur” exhibition at the Museum of Natural History in Berlin)
- Primary schools’ classrooms
- Training for teachers and students
- Online webinars

Leading hands-on lab activities in the context of large-scale events (see Figure 2) is quite effective in attracting many participants. While this format provides the most impact, it can require a significant amount of time, energy, and staff to ensure that the kids are well supervised, safe, and spread out, and able to absorb the information.



Figure 2 – Hands-on lab at large-scale event

The **classroom setting** (see Figure 3) proved even more successful as the children were in a familiar learning environment and accustomed to the authority of the teacher. The teacher could then further integrate the bioeconomy material into other parts of the curriculum. In addition, one drawback of having a publicly open workshop or large-scale event was that a large age range of the children must be spanned. The experiments and their connection to the bioeconomy had to be developed to be appropriate for a six-year-old as well as a ten years old. In a classroom format, the material could be better targeted to the age of the children.



Figure 3 – Hands-on lab in classroom setting

Additionally, the **online webinars** (see Figure 4) were proven to be effective to overcome COVID19 pandemic restrictions. In the context of “European Researchers’ Night” in Italy, partner FVA organized two events engaging primary school kids with their teachers in an online training activity during which the hands-on labs were for the first time implemented online.

A completely new format was prepared to actively engage participants. FVA set up two different home studios: one with a bio-based products booth and the second one equipped to deliver hands-on demonstrations used as a teaser, to address and explain bioeconomy related questions and bio-based products.



Figure 4 – Hands-on lab showing experiments online

The online webinar had the following agenda:



- What is bioeconomy – an introduction;
- First hands-on experiment to show (biogas in a bottle);
- Explanation about bio-based products;
- Second hands-on experiment to do live with the class (coffee scrubs);
- Bio-based products from food waste (coffee, eggs, etc.);
- Third hands-on experiment to show (natural colour fun with acidity (pH) experiment with cabbage);
- Natural pigments used in bio-based products and cosmetics;
- Fourth and final hands-on experiment to do live with the class (seed balls);
- Bio-based products made of agricultural waste and green building applications.

FVA shared with teachers a list with the necessary materials in advance to enable kids to be prepared and to be able to conduct the experiments during the webinar. The hands-on labs were alternated with explanations on bioeconomy, its feedstocks and with the exhibition of bio-based products. By mixing and alternating practical experiments with bio-based product exhibition and explanation, the engagement remained high during the whole webinar.



Figure 5 – Snapshots of Hands-on lab webinar

– **Guidelines for the implementation**

The experiments act as an occasion to discuss important topics like waste prevention, climate change, renewable energies, and many others. The hands-on activities are easy to perform and to replicate at home or at school. In addition, they can be tied into other tasks, specifically large-scale awareness raising, public engagement events and training for teachers.

The experiments can be carried out in various formats and environments - in large scale events, smaller events at museums, galleries, during classes at school or even at home. To enhance the learning process, it is recommended to provide information in various formats so that kids can receive them in various ways, e.g. through reading, drawing, listening to oral explanations, and viewing visual media. Therefore, it is recommended to combine the experiments with other materials.

It proved helpful to bring bio-based containers (e.g., paper cups, compostable dishes, etc.) to let the kids take their outputs away after the completion of the experiment. While engaging and monitoring the activities is time and energy consuming for the staff, the hands-on labs are crucial to attract a younger audience. Furthermore, coupling the “Bioeconomy Village” booth with hands-on activities help to create a dynamic environment and to attract more visitors: hands-on labs are the main attractors for kids, and this can be a driver to invite them to see the bio-based materials booth and to learn more about bioeconomy.

Regarding the possibility to deliver this activity online, the combination of bio-based materials exhibition and explanation together with the hands-on activities played a key role in delivering a more dynamic webinar with the active engagement of students.

Organization is crucial to keep a high level of attention in delivering this format. The class in a virtual context is more “dispersed”, therefore it is vital to manage the class like a teacher, asking kids to adjust their microphones, to engage them with questions, etc.

### 3.1.2 Task 2.1b: “Bioeconomy village” at large scale events

#### – **Objective and expected outcomes**

Organize a large-scale event (with Bioeconomy Village) in SK, EL, IT, PT with the aim to inform and inspire young people to grow the citizens, workforce, and decision makers of the sustainable future by increasing awareness of the environmental, social and economic benefits of sustainable and circular bioeconomy and bio-based sectors.

#### – **Description of the activity**

The Bioeconomy Village showcases more than 350 different bio-based products in every day’s life applications, enabling the visitors to touch and feel the bioeconomy.

#### – **Inspirational previous experiences**

The bio-based product collection has already been exhibited in >40 events directly involving >120,000 people in six countries (IT, BE, PT, SK, GR, DE) in the last 5 years (see Figure 6). For more information, see Transition2BIO Deliverable 2.2 - Report on Large awareness and public engagement event.





Figure 6 - The Bioeconomy Village at the Maker Faire – The European Edition in Rome

#### – Guidelines for the implementation

The Bioeconomy Village was successfully experimented with, among others, in the Transition2BIO project. From the experience gained it was learned that the nature of large-scale events makes it difficult to organise structured (educational) activities. At the same time, participants are exposed to a lot of stimuli and their attention and ability to absorb new information decreases with time spent at the large-scale event. The recommendations below summarize the key lessons learnt regarding the Bioeconomy Village format regarding the following aspects:

- How to use the Bioeconomy Village format
- Knowledge that the Bioeconomy Village team should have
- Tuning the bio-based product collection to the type/s of visitors
- Make it funny and surprising, and connect to everyday life
- Think about the give-aways

#### How to use the Bioeconomy Village

- The Bioeconomy Village format proved to be an effective element in large scale events – attracting visitors to the project booth and offering a good starting point for discussions (see Figure 7). The original Bioeconomy Village bio-based product collection consists of more than 350 items. However, it is recommended that partners create their own collection of items produced in their country or even region, as visitors are especially interested in materials and products originated and available in their own country.



Figure 7 - Bio-based products showcased at the Bioeconomy Village

- Learning is best facilitated by using a combination of different interactive formats and activities. It is recommended to use a combination of formats and activities, e.g., a combination of visual information (such as the BioArt Gallery, see section 3.1.4) and Bioeconomy Village. The use of a cardboard installation simulating rooms in a household with samples representing products of everyday use was very successful with various target groups (see Figure X).



Figure 8 - Cardboard installation resembling a household with samples of everyday bio-based products

**Knowledge that the Bioeconomy Village team should have**

- The team needs to be well-trained. Even if the large-scale event targets the general public, the team will be asked a variety of questions – from the origin, availability, and application of biomaterials and bio-based products presented, through general questions concerning bioeconomy and its connection to other concepts, e.g., to developing a more sustainable future.
- Company representatives usually ask more technical questions about materials and their applications, existing value chains in the country, business opportunities or support. Teachers, NGOs, journalists, and other multipliers are interested in materials about bioeconomy that they can use in their classes or activities.

**Tuning the bio-based product collection to the type/s of visitors**

- The type of visitors is central to adjusting the topic, materials, content, etc. Creating a collection of everyday products is a good approach. As large-scale events attract people of different ages, considering items interesting for different age groups is recommended.

**Make it funny and surprising, and connect to everyday life**

- The Bioeconomy Village proved to be a good starting point for discussions. Unusual materials, interesting or funny facts, innovations and novelties arouse interest and are a good basis for discussions or explanations of more complex topics. To start explaining

more complex concepts, use the information that the participants already have, starting from situations related to everyday life and presenting bio-based alternatives to the products they normally use. Another option would be to start with current challenges and impacts they can observe, and explain, how bioeconomy can address these problems.

#### **Think about the give-aways**

- In general, give-aways (such as poo paper, bio-based water bottles and pens, toothbrushes, and bags) help attract visitors. However, they can also send conflicting messages about conscious and respectful consumption. Considering the aim of GenB is to raise a generation sensitive to sustainability issues, able to make responsible decisions, limiting the number of free items and requiring that visitors spend more time learning (e.g., taking a quiz) and providing feedback should be considered as method to foster a more engaged public.

#### 3.1.3 Task 2.1c: "Inside the bioeconomy" experimental exhibitions

##### – **Objective and expected outcomes**

Organisation of an exhibition that will inspire and inform children and young people (all three age classes) on bioeconomy by attracting their interest, raising awareness, and stimulating curiosity and discussion.

This format will bring inspirational real-life examples of the bioeconomy and of bio-based products to the public space. The idea is to connect to existing public spaces (such as science /exhibitions, libraries, city halls, community centres, etc.):

- to showcase the bioeconomy
- to increase knowledge about bio-based materials, innovative applications, and processes.
- to create something that may persist in the public space

The target is to implement the format in 4 countries (NL, ES, PT, EU), and to involve 1,000 young people in each country (4,000 persons in total).

##### – **Description of the activity**

It is envisaged that "Inside the bioeconomy" will showcase circular and bio-based products for use in every day's life applications, enabling the visitors to touch and feel the bioeconomy.

If relevant, use can be made of materials developed in other T2.1 sub-tasks (T2.1a: bio-based experiments for kids, T2.1b: showcase of bio-based products. T2.1d: BioArt Gallery roll-ups).

– ***Inspirational previous experiences***

At a different scale (in terms of resources used) but inspirational nonetheless is the exhibition Design by Nature.

Design by Nature (see Figure 9) was an exhibition about inventive artists who embrace the possibilities and beauty of nature to shape a new, sustainable world. It was held from 10 July to 3 October 2021 in Zwolle, The Netherlands. The exhibition was commissioned by the Province of Overijssel and developed by the company Biobased Creations. An interview with Lucan de Man, one of the exhibition curators, is available on YouTube.

Some 35-40 objects were put on display, many on loan from the artist. There were also several “exploded view houses” on display where construction materials are shown. There was little explanatory text that accompanied the objects. Instead, public information made is available in an exhibition booklet and detailed background/technical info through quick response (QR) codes.

Part of the exhibition was shown at larger scale in the Exploded View Beyond Building, an installation of a full-size home that is made entirely of bio-based materials, circular construction methods and stories about the changing value chain of which it is part, that was put on display at the 2021 Dutch Design Week Eindhoven and the Floriade Expo 2022 Almere.



Figure 9 - A view of the Design by Nature exhibition



Figure 10 - The Exploded View, an installation demonstrating the beauty and power of bio-based circular building, is the common thread running through Design by Nature

– **Guidelines for the implementation**

As the format (injecting bioeconomy in a public space, other than a school or a large-scale event) is new to the GenB partnership, it is considered essential to connect and engage with stakeholders in charge of operating public spaces (such as science /exhibitions, libraries, city halls, community centres, etc.).

The conditions and requirements that (candidate) collaboration partners may impose will help determine the scope of the experimental exhibition.

In short, implementation of this format will require the following in each participating country:

- Make a short sketch/description of the planned experimental exhibition
- Search, identify, contact and engage public spaces that may become candidate collaboration partners to host an experimental exhibition
- Work with the (pre) selected candidate collaboration partner/s to refine the concept
- Make detailed arrangements on practicalities
- Developing/collecting/assembling needed presentations, information, and support materials.
- Implementing the activity
- Reporting the activity



#### 3.1.4 Task 2.1d: "BioArtGallery"

– **Objective and expected outcomes**

Organize BioArt Gallery exhibition in each partner country, that will inspire and inform children and young people on bioeconomy by attracting their interest, raising awareness, and stimulating curiosity and discussion.

– **Description of the activity**

The BioArt Gallery presents promising feedstock and its related bioeconomy applications in everyday life. It offers an innovative approach of showcasing to the public some examples of bio-based products and applications currently available in the market. The BioArt Gallery consists of several types of visual materials that can be selected according to the type of event and context (large size pictures, stand-alone cardboard panels or roll-up banner), which have high visual impact, showcasing and explaining several sustainable circular bioeconomy applications and products. Agriculture, cosmetics and nutraceuticals, construction and restoration, cleaning and hygiene; design and clothing; toys and sporting goods are just some of the sectors covered in the BioArt Gallery where the circular bioeconomy can have a positive impact on the environment, society and economy.

The original BioArt Gallery consisted of 16 thematic compositions of large-size pictures (64 panels in total) with high visual impact and covering all bioeconomy sectors (see Figure 11). It was later supplemented with 27 roll-up banners, presenting different types of biomass feedstock and its applications. An interactive online version is also available.



Figure 11 - Large-size pictures of the BioArt Gallery on display

### Inspirational previous experiences

The BioArt Gallery has been exhibited in >50 events, reaching 200,000 people. It was used on several occasions and in different formats in the Transition2BIO project, often in combination with other materials (e.g., the Bioeconomy Village, educational games and quizzes, etc.) and activities (e.g. hands-on labs).

#### – Guidelines for the implementation

Based on previous experience, the following recommendations can be made how to use the BioArt Gallery:

- **Make a selection:** To make the most of the materials, GenB partners are recommended to make a selection of the items to be used, depending on the size and type of event, e.g., appropriate number of roll-up banners/posters can be used depending on the space available, purpose of the event, as well as topic of the event.
- **Make use of what is already there:** The full set of BioArt Gallery materials developed/expanded in Transitio2Bio is available in electronic format in English in the GenB repository. This collection can be extended with additional materials, such as those resulting from the BLOOM project.
- **The BioArt Gallery format is very flexible:** the gallery was used at various types of events, both physical and online, ranging from large-scale events to very small, specialized events, such as hands-on labs for kids or trainings. As such, it can be used stand-alone, but is effective also if combined with various other activities and formats (e.g., quizzes, experiments, etc.).



Figure 12 - Roll-up banners of the BioArt Gallery and bio-based product samples on display



- **Language is key:** As bioeconomy itself is a new topic for many, it is recommended to communicate and use materials in the native language, especially if the visitors are from the general public and the event takes place at the national, regional or local level. GenB partners are therefore recommended to translate the materials into their own language. In the case of an international event, the use of English or another language is possible.
- **Print responsibly!** Printing of new roll-up banners/posters is recommended only if the Genb partner does not have (access to) the materials from previous activities. For existing printed materials, affixing a GenB sticker ensures alignment with the GenB Brandbook. In case new materials need to be printed, the layout prepared by LOBA should be used.
- **How to make translations:** In case translation is needed, GenB partners can use the English versions of the materials available in the repository. Translations should be sent to LOBA to prepare the material in the GenB layout. Each partner is responsible for printing their own materials.

Further recommendations regarding smart use of the BioArt Gallery materials can be found in the description of the Bioeconomy Village format (see section 3.1.2).



### 3.1.5 Indicative timing of all activities planned in T2.1

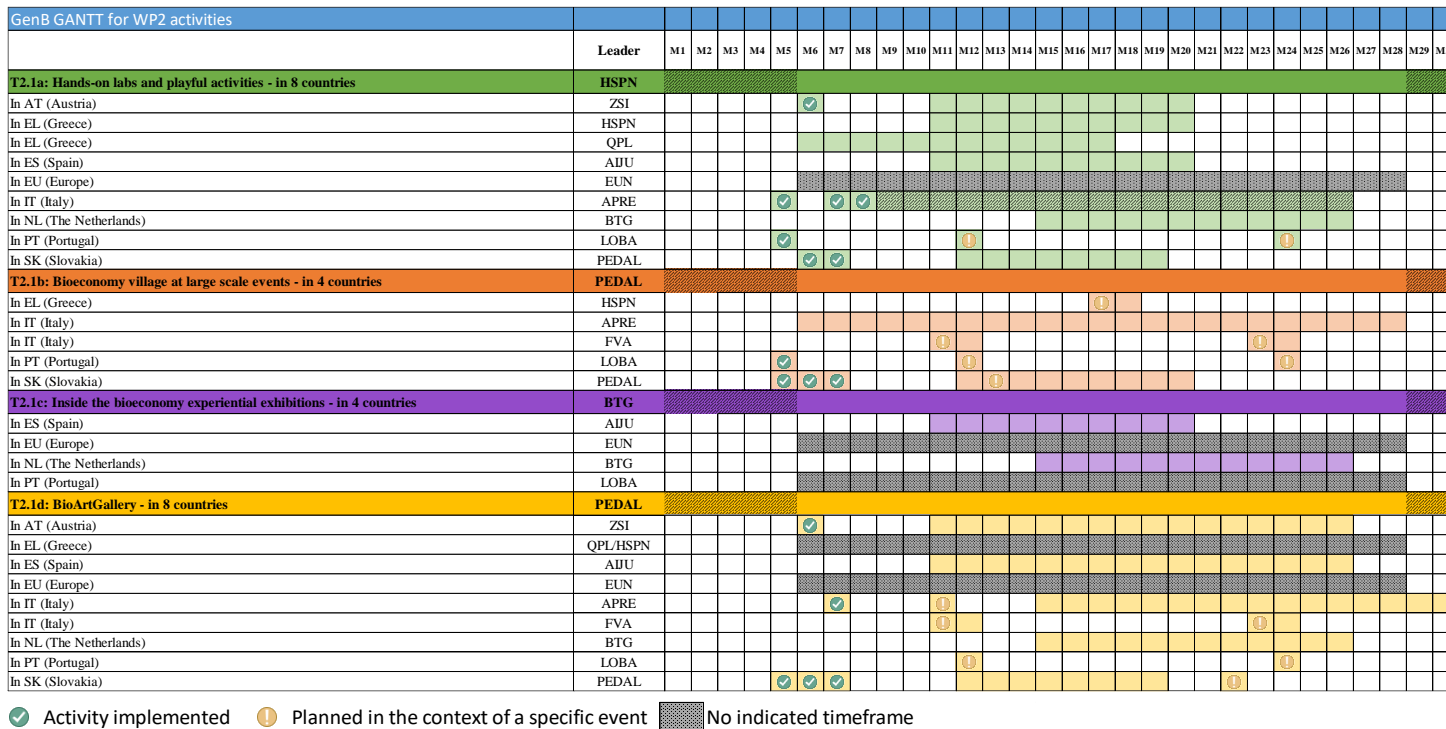


Figure 13: Indicative timing of each partner for all activities under task 2.1

### 3.2 Inspire and inform students in bioeconomy careers

Task 2.2 experiments activities to attract new generations on bioeconomy related career. The following formats will be developed/provided within this Task:

- Task 2.2a: “Role-playing game” on bioeconomy jobs in schools
- Task 2.2b: “TEDx pitches”
- Task 2.2c: “Bioeconomy careers infodays”
- Task 2.2d: “A Day in a biorefinery” study visit
- Task 2.2e: “Schools’ projects” to grow future entrepreneurs






Activity	Target	What for	KPI	Target Countries
#3 “Role-playing game” on bioeconomy jobs in schools		Game to become more familiar with different professions in the bioeconomy (circular farmers, biotech researchers, etc.)	#150 students	ES, BE, EL
#3 “TEDx pitches”		Storytelling on bioeconomy applications, risks and benefits, involving GenB ambassadors as testimonials	#240 students	IT, BE, SK
#4 “Bioeconomy careers infodays”		Involving researchers and professionals as testimonials	#300 students	IT, BE, EL, SK
#3 “A day in a biorefinery” study visit		Open door days in biorefineries and research labs	#100 students	NL, IT, BE
#1 “schools’ projects” to grow future entrepreneurs		To grow future bioeconomy entrepreneurs (e.g. Startupper School Academy) in Italy	#5000 students	IT

Table 4: WP2 formats to inspire and inform students in bioeconomy careers

Each of these formats is briefly described below.

#### 3.2.1 Task 2.2a: “Role-playing game” on bioeconomy jobs in schools

##### – Objective and expected outcomes

This task is aimed at developing and implementing in schools a role-playing game about professions related to the field of Bioeconomy such as: circular farmers, biotechnology researchers, etc.

The expected outcomes are:

- The development of the game (creation of educational material).
- The implementation of the game (development of training activities).
- The education in Bioeconomy concepts to a total of 150 students in 3 countries (Spain, Greece and Belgium).

– ***Description of the activity***

The game will be addressed to the target group of early childhood education (4-8 years old students) and will be implemented in 3 countries: Spain (AIJU), Greece (HSPN) and Belgium (EUN).

The game will be based on a role-playing proposal in which children will have to adopt different roles that will allow them to acquire knowledge about the Bioeconomy, through gamified learning experiences.

To do this, the children will be proposed different roles based on professions in the Bioeconomy sector, such as:

- Bio farmer.
- Bio forester.
- Bio-based product seller.
- Researcher in the biotechnology sector.
- Waste management company worker.
- Landscape architect.

These roles will be presented on illustrated cards with the name of the profession, a picture and a brief description of the tasks performed by this person, to help the children understand the profession.

Together with the cards, a game scenario will be provided that recreates a city in which the workplaces of these professions appear, such as: fields, shops, factories, streets, etc. The children will have to place the card of each profession in the corresponding place, where they will find a small challenge to solve, which will allow them to put themselves in the shoes of these professions and understand them better.

The task will be coordinated by AIJU, the Technological Institute for Children's Products and Leisure. As its name suggests, AIJU is a partner with extensive experience in the development of gamified activities and games, as well as in the study of children's behaviour.

– ***Inspirational previous experiences***

To develop the role-playing game, AIJU starts from its extensive experience of more than 40 years of research and innovation in the toy and game sector, and in the development of play and educational activities with children. Relevant examples of educational games and toys developed by AIJU include:

- The Childtizens Participation Toolkit, a set of 4 educational games
- The Toylab Experience, an innovation centre for children developing recreational-educational formats
- The Mindful Kids mindfulness game
- The SAFEorFAKE Toolkit, a series of materials with an educational and playful approach
- The Breast Milk Baby educational breastfeeding doll
- The Brailín deducational oll, used in educating children with special needs

These examples can inspire the development and implementation of GenB role-playing games and are highlighted below.

The **Childtizens Participation Toolkit** is a set of 4 educational games developed by AIJU in the framework of the Childtizens Project (see Figure 14). The aim of these games is to encourage child participation and the development of social and civic values such as: sustainability, accessibility, gender equality and multiculturalism, based on gamified experiences that allow children to learn while they play and have fun. The set is made up of a total of 4 games.



Figure 14 - The 4 educational games developed in the Childtizens project

*Planet* (see Figure 15) is a game aimed at promoting social awareness on sustainability and environmental care, and at developing pro-environmental knowledge and attitudes. To this end, children are proposed different challenges and game scenarios in which they must face the main

environmental emergencies currently facing planet Earth: climate change, pollution, deforestation, etc., working together to reverse them.



Figure 15 - The Childtizens educational game Planet

*Inclupark* (see Figure 16 ) a game aimed at raising social awareness about disabilities and promoting attitudes of inclusion and respect for diversity. The aim of the game is to design accessible playgrounds where all children can play, regardless of their abilities, skills or characteristics. To do this, players are provided with play scenarios from different playgrounds to which they must add elements that favour accessibility by adapting the spaces.

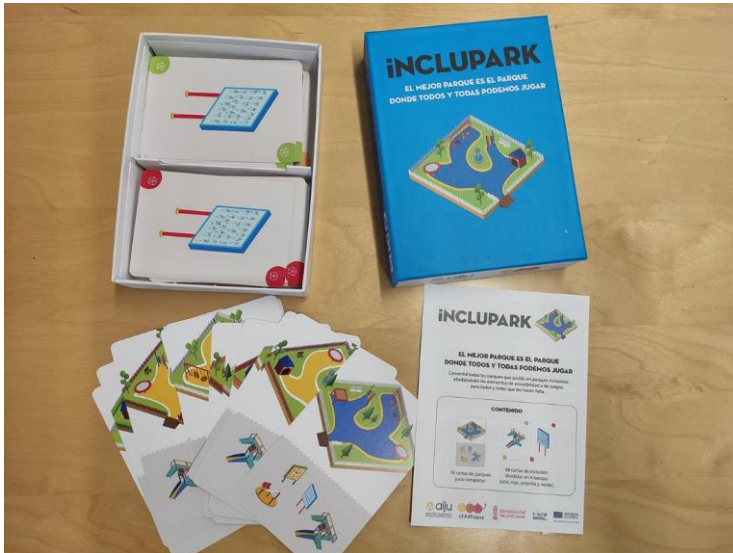


Figure 16 - The Childtizens educational game Inclupark

*Equal* (see Figure 17) is a game aimed at promoting attitudes of equality between the genders, encouraging gender equality. It is a memory game in which players must find the correct cards to complete various everyday scenes representing situations in which both genders work together. The game includes daily and domestic tasks, encouraging the equal sharing of tasks; scientific and STEM activities where men and women research and co-create knowledge; care activities, where men and women care equally, etc.



Figure 17 - The Childtizens educational game Equal

*Be Friends* (see Figure 18) is a game that aims to promote multiculturalism by developing attitudes of respect and equality between persons of different backgrounds, cultures and ethnicities, embracing diversity as a richness. To do this, players must explore different game scenes in which multicultural children are presented sharing activities from different cultures and traditions. In these scenes, negative attitudes of disrespect and discrimination are presented, which the children must try to resolve in order to respect multiculturalism through positive values such as: dialogue, understanding, empathy, esteem, etc., educating in values.





Figure 18 - The Childtizens educational game *Be Friends*

Another inspiring previous experience is **AIJU's ToyLab Experience**. It is an International Innovation Centre for Children. It is located in AIJU's facilities in Ibi (Alicante, Spain). It is a large, open-plan, multi-purpose space for the development and implementation of play and educational activities with children and youth.



Among these activities, in the ToyLab Experience various recreational-educational formats have been developed based on role-playing games, in which children adopt different roles that allow them to learn and share experiences for the co-creation of knowledge. As an example, we highlight the activity shown in Figure 19, in which the children play a role-playing game in which they put themselves in the shoes of people with different disabilities to learn about accessibility.



Figure 19 - Children playing a role-playing game on visual impairment

Another inspiring experience related to the creation of games is **Mindful Kids**, developed by AIJU and the toy company MINILAND (see Figure 20). It is a game in which children are encouraged to adopt different roles and postures, with the aim of carrying out relaxation and self-awareness exercises, working on multiple intelligences such as: emotional intelligence, musical intelligence, active and bodily intelligence, and social intelligence. In this way, children are introduced to the world of mindfulness, which has important benefits for their mental and physical health.



Figure 20 - The Mindful Kids mindfulness game

Inspirational experiences also include the creation of the **SAFEorFAKE Toolkit**. The SAFEorFAKE Project is aimed to develop a tool to educate children and raise their

awareness of the importance of intellectual property for protecting creativity and innovation, and the risks that counterfeit consumer products aimed at children pose to health, society and the environment.

To achieve this goal, the SAFEorFAKE Toolkit was developed by AIJU. The SAFEorFAKE toolkit includes a series of materials with an educational and playful approach, including Minigames, Educational videos, Infographics, Posters, Didactic guides and Worksheets to be used by children, primary school teachers and other trainers in classrooms, at home or in extracurricular activities. Figure 21 shows an example of a minigame.

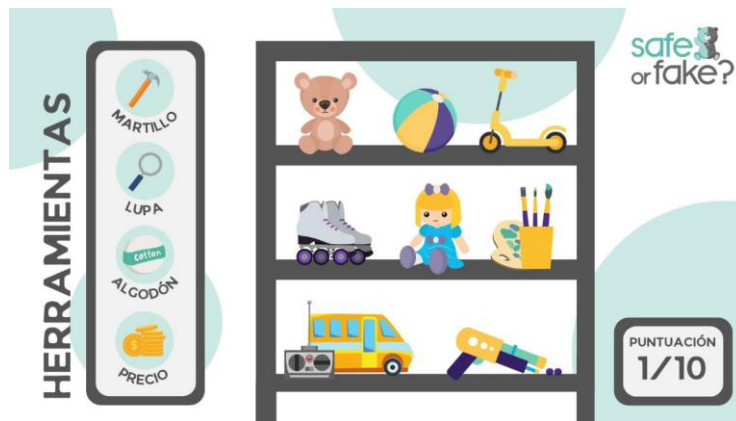


Figure 21 - A minigame included in the SAFEorFAKE toolkit

In one of the digital role-playing games children must put themselves in the shoes of a toy designer, who has to develop safe products from an environmental, social and health perspective (see Figure 22).



Figure 22 - A role-playing game included in the SAFEorFAKE toolkit

Finally, AIJU also has experience in the development of toys based on role-playing, which stem from the didactic potential and the interest that the reproduction of adult roles has for children in early childhood. Among them, we can highlight successful experiences such as: The Breast Milk Baby and Braillín.

The **Breast Milk Baby** is a product developed by AIJU in collaboration with the Spanish doll company Berjuan. It is the first educational breastfeeding doll that, instead of reproducing artificial breastfeeding, teaches respect for and naturalisation of maternal breastfeeding, which is a demand supported by numerous paediatric and obstetrical associations, as well as by families themselves. The doll, through role-playing, aims to encourage attitudes of naturalisation of this practice, educating children about the existence of this type of breastfeeding. See Figure 23

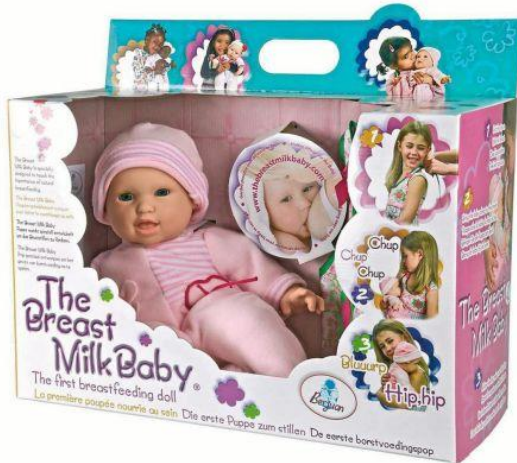


Figure 23 – The Breast Milk Baby educational breastfeeding doll

Meanwhile, **Brailín** is a doll developed by AIJU in collaboration with the Spanish National Organisation for Blind People (ONCE) and the Spanish toy company Famosa.

Brailín (see Figure 24) is a doll aimed at promoting the learning and acquisition of Braille reading and writing from a playful perspective. The doll is very useful both to enable blind children to learn to read and write Braille, and to raise awareness about visual disability and about this adaptation method (Braille) among children without visual impairment, so that they can learn about and respect these issues in a fun way.



## Brailín

Figure 24 - The Brailín doll, used in educating children with special needs

The Brailín doll is widely used in education for children with special needs and is a clear example of a toy that is accessible and promotes accessibility.

– **Guidelines for the implementation**

The activity will provide an opportunity for the education of children from 4 to 8 years old in aspects focused on Bioeconomy. In order to achieve significant learning, it is necessary to start introducing and working on these topics from an early age, in early childhood, in order to form a solid base from which to build on experiences and learning of greater complexity.

Role-playing activities are an educational resource of great value for fostering this learning in childhood, as they allow children to reproduce roles from adult life, which involves an important aspirational component, as well as empathizing and putting themselves in other people's shoes.

Therefore, combining elements of role-playing with professions can be fun and engaging for the children in the target group, fostering the acquisition of learning and the creation of knowledge from a playful perspective.

On this basis, to develop the task, the following steps will be followed:

1. AIJU experts will create a draft of the game proposal and the necessary materials to carry it out in English.

2. The draft version will be circulated to the partners involved in Greece (HSPN) and Belgium (EUN), to the WP leader (BTG) and to the GenB project coordinator (APRE), so that they can review it and give their feedback and input.
3. With the contributions of the partners involved, AIJU will elaborate the final version of the game proposal and materials in English.
4. AIJU will send the final game proposal and materials to the partners in Greece (HSPN) and Belgium (EUN), who will take care of the translations into the national languages, if required to implement the activity. AIJU will also translate the materials and the game into Spanish in order to implement the activity in Spain.
5. Each partner involved will develop the activity in the schools of their country: Spain (AIJU), Greece (HSPN) and Belgium (EUN). In each country, 50 young children (4 to 8 y.o.) should participate in the role-play game.

#### 3.2.2 Task 2.2b: "TEDx pitches"

##### – **Objective and expected outcomes**

An effective way to directly involve the different categories of GenB ambassadors (i.e. Young Biovoices, Activists, and Frontrunners; see D3.1) is by engaging young people who have a good command of English in public speaking, speeches or TEDx Pitches.

TEDx pitches were experimented with as part of the implementation of the "Students2Students" format (see D3.1), which aims at promoting the participation of students as testimonials in GenB contents and activities. This format was proven to be effective in several previous experiences because it is based on the direct connection among peers (students). In particular, very young students are keener on learning from other students because they are perceived as inspirational examples, who are close to their age, experiences and who share the same values.

A secondary indirect target of this format are the families because students are the perfect multipliers of sustainability contents, greatly contributing to promoting behavioral and attitudinal changes. For instance, little kids can nicely convince grandparents in adopting more sustainable lifestyles (circular behaviors), as was reported in previous projects (Transition2BIO, BIOVOICES).

##### – **Description of the activity**

TEDx Talks are a showcase for speakers presenting well-formed ideas in under 18 minutes.

The suitable candidates for the TEDx pitches will be selected among the GenB Ambassadors and will be empowered through capacity building webinars in T3.2 to help them in their activities to promote and communicate the circular sustainable bioeconomy. Additionally, a toolkit targeting GenB Ambassadors will be made available in close collaboration with T1.4 to further support them.

##### – **Inspirational previous experiences**



Organization of a TEDx style pitch, delivered by students to talk about the bioeconomy and bio-based products. This experiment was organised in the context of Transition2BIO and took place during the awarding event of the Startupper School Academy<sup>4</sup> school competition: once it was identified that they had reached the appropriate stage, two students were involved, trained, mentored, and supported in their bioeconomy pitch. Each of the above-mentioned steps has some challenges to be solved, nevertheless it was a growth experience for the students, as well as a fresh and attractive way to convey bioeconomy related contents in institutional settings. See Figure 25.



Figure 25 – TEDx pitches at the Startupper School Academy award event

– **Guidelines for the implementation**

As described by TED organisers, there are many theories on the best structure for a great presentation. There's no single trick to it, but the following structure has proven to work particularly well:

1. Start by making your audience care, using a relatable example or an intriguing idea.
2. Explain your idea clearly and with conviction.
3. Describe your evidence and how and why your idea could be implemented.
4. End by addressing how your idea could affect your audience if they were to accept it.

Moreover, it is important to remember:

1. The primary goal of the talk is to communicate an idea effectively, not to tell a story or to evoke emotions. These are tools, not an end in themselves.
2. The structure should be invisible to the audience. In other words, don't talk about how you're going to talk about your topic – just talk about it!

<sup>4</sup> An Italian school competition organized for several years by innovation booster Lazio Innova. See also Task 2.2.e (school projects to grow future entrepreneurs) below.



Based on previous experiences, it is recommended to provide assistance to the selected GenB Ambassadors in fine-tuning the TEDx pitch to be delivered. Since this activity involves complex concepts (that should be communicated in an appropriate way), it is important to ensure that the GenB Ambassadors feel confident and supported by the GenB Team in these experiences.

This format could be exploited in the context of large-scale events and in particular in European Commission's events.

### 3.2.3 Task 2.2c: "Bioeconomy careers infodays"

#### – **Objective and expected outcomes**

The careers infodays are orientation seminars which objective is to give students useful information about the opportunities offered by the bioeconomy both in the academic world and business markets.

These seminars are dedicated to high school students, primarily of the final year of the school path, whose need to improve awareness about the possibilities offered by the bioeconomy sector at large.

The seminar foresees the intervention of experts as speakers: professors and researchers in the bioeconomy sector coming from academia, entrepreneurs coming from bioeconomy business, operators of students' orientation service offices, principals from High- and Low-secondary education and teachers, EU Bioeconomy Youth Ambassador and GenB Ambassadors, mainly young careers testimonials.

#### – **Description of the activity**

The GenB partners involved in this format (APRE-IT, BE, EL, SK) will organise at least one infoday in their own country. The event will be either virtual, physical or hybrid with a duration from 1 to 3 hours (max). In total at least 300 students should be reached.

#### – **Inspirational previous experiences**

The training course organised by Transition2BIO and GenB in November 2022 consisted in 6 hours of training activities for primary school teachers. One of the presentations was about jobs in the bioeconomy using images from the book for kids "[What's Bioeconomy?](#)". This is a small pilot example that could be used to develop the first of its kind infoday about Bioeconomy careers.

#### – **Guidelines for the implementation**

The partners involved will prepare the draft agenda that will be shared and agreed with the format leader APRE. The GenB partners in the meantime will start organising the infoday considering the following step:

- Securing the venue, the speakers and a date.
- Selecting/inviting the participants contacting schools (teachers and principals) around the country.

- Launching a public information campaign through its channels and networks.
- Developing/collecting/assembling needed presentations, information and support materials.
- Reporting the activity.

#### 3.2.4 Task 2.2d: “A Day in a biorefinery” study visit

##### – **Objective and expected outcomes**

- Arrange a site visit for high school students (14-19 y.o.) to a biorefinery and research labs to experience a day as researcher or other professional in the bioeconomy
- Getting to know bioeconomy professionals and their working environment
- Inform & attract talent in life science, technology, bioeconomy opportunities
- Outcomes: 3 countries (NL, IT, BE); 100 young persons in total

##### – **Description of the activity**

Visit to a biorefinery (or other relevant and interesting bioeconomy plant) with its own research facilities. Biorefining is the sustainable processing of biomass into a spectrum of bio-based products and bioenergy.

Depending on the context of the visit and on possibilities/ practicalities, the Day in a Biorefinery may include:

- a **site tour** of the production facilities the research lab, and other interesting parts of the biorefinery
- An **informative workshop**, addressing e.g. (a) Introduction on the Bioeconomy, (b) Involvement of the host company in the Bioeconomy, (c) Career opportunities in the Bioeconomy, (d) Testimonial of a professional (e.g. researcher) working at the biorefinery, (e) Presentation by one of the GenB Ambassadors (see WP3)
- An **Information market** (to display samples of raw materials used and of manufactured products, information materials, product give-aways, etc.)

##### – **Inspirational previous experiences**

Partner BTG has prior experience organising excursions and study tours to bioenergy facilities for different target groups.

##### – **Guidelines for the implementation**

BTG will prepare a step-by-step guide to facilitate the organisation of the site visit. In short, implementation of this format will require the following:

- Securing the venue, the presenters, and a date for the biorefinery visit
- Making detailed arrangements regarding practicalities and programme content
- Selecting/securing the participants
- Developing/collecting/assembling needed presentations, information, and support materials.
- Implementing the activity
- Reporting the activity

It will be considered to offer “A Day in a Biorefinery” as a prize to winners of one of the GenB competitions (see D3.1)

### 3.2.5 Task 2.2e: “Schools’ projects” to grow future entrepreneurs

#### – **Objective and expected outcomes**

GenB will implement “Schools’ projects” to grow future bioeconomy entrepreneurs in Italy, targeting Primary and Elementary school (9-13 years old) and High schools (14-19 years old).

The objective of this activity is to raise awareness and to foster knowledge of bioeconomy, inspire further interest in educational materials on bioeconomy, upscale the use of the bioeconomy teaching resources, inspire study and work careers in the domain.

#### – **Description of the activity**

School projects are a specific type of activity that allows consolidating knowledge about the bioeconomy, enabling students to check and/or demonstrate the acquired knowledge, deepening it or even promoting creativity or innovation.

To this aim, this activity will be coupled with a training (in connection with WP3) to give the basic knowledge on what is the sustainable and circular bioeconomy, providing practical examples of bio-based products in different applications and using different educational material such as the toolkits, which are a collection contents stemming from various EU funded projects, ready to be used in school and supporting both teachers and students in the implementation of the school project.

#### – **Inspirational previous experiences**

Two recent school competitions, both organised in Italy, are with mentioning. The first, Bioeconomy4YOU, has an exclusive focus on circular bioeconomy. The second, Startupper School Academy, has a broader focus on innovation and has been thematically enriched with the topic circular bioeconomy since 2018.

**Bioeconomy4YOU** school competition was organised in Italy by Re Soil Foundation in collaboration with Cluster SPRING, Raul Gardini Foundation, Novamont, FVA, and APRE. Aim of the contest was to raise awareness, inform and educate young generations on these topics,

collecting and awarding the most creative ideas on how they imagine their future in the circular bioeconomy. The contest addressed four different categories of participants, each of which was set a particular challenge:

- Primary schools: What is the bioeconomy for you? Tell us about the bioeconomy in your daily life! Both classes and single students were invited to present their ideas through many ways and formats (videos, articles, drawings, representations, artistic works, etc.), telling their idea of bioeconomy in a simple, clear, effective and innovative way.
- Middle schools: Become an ambassador of change. Lower secondary school classes and students were invited to submit projects to explain to classmates and families what circular bioeconomy means and what bio-based products are, through practical examples that can stimulate behaviour, purchasing choices, changes in daily habits, lifestyles in line with the principles of the circular bioeconomy capable of reducing mankind's impact on the environment and efforts to combat climate change. Many formats were admitted, e.g. videos, articles, drawings, representations, artworks.
- Secondary schools: sub-categories “bio-based product” and “Our bio-future”
  - Bio-based product: creation of a bio-based product that responds to a particular environmental problem, considering the entire life cycle of the product itself, from the use of raw materials of biological origin (vegetable or animal, with particular attention to raw materials currently considered waste), to sustainable production, with an end-of-life that recovers the material in a circular way. The project was presented through different tools (e.g., PowerPoint presentation, Prezi presentation, video production).
  - Our bio-future: students presented videos, interviews or other multimedia materials, which highlight different aspects of the bioeconomy in the present and future life of young people (as citizens, as students and as future workers or entrepreneurs), showing how bioeconomy represents an opportunity for them and for their future.
- Teachers: Develop educational content for students. Creation of an educational activity on the bioeconomy, using interactive and/or laboratory teaching methodologies, in order to facilitate the introduction of knowledge and skills on the subject of circular bioeconomy in school curricula of all levels.

The award ceremony took place in collaboration with Ravenna Festival at the Teatro Alighieri opera house in the context of the 2022 Bioeconomy Day in Italy, representing a great opportunity for the students and teachers to participate in a large-scale event on bioeconomy and to present their experience in the school project. See Figure 26.



Figure 26 - Bioeconomy4YOU school competition award ceremony at the Ravenna opera house, 25 May 2022

The **Startupper School Academy** is a school competition recognized by the Italian Ministry of Education, organized for several years by Lazio Innova, the Lazio Region organisation responsible for boosting innovation in the region (see Figure 27). Since 2018 the Startupper School Academy is enriched by the thematic award dedicated to the circular bioeconomy, thanks to the collaboration with the EU-funded projects BIOVOICES (from 2018 to 2020) and Transition2BIO (from Jan 2021 to Dec 2022).

The Bioeconomy prize is coordinated by these projects, but several partners are involved every year, to enrich the prizes and the contents, namely: Novamont, cluster SPRING and Re Soil Foundation. The main objective of this contest is to raise awareness and inform the young generations about the bioeconomy.

Target groups:

- High school pupils: targeting individual pupils or small groups of up to 5 pupils between 15-18 years old;
- Teachers: although the teachers are not involved in the contest as direct participants, their role is a central pillar of the activity, since they stimulate and support the students in the process. In addition, the bioeconomy prize organizes a capacity building activity for the teachers to help them in introducing these contents in their curricula.

The objective of the bioeconomy prize of the Startupper School Academy is dual:

- promote awareness and education about bioeconomy, its sectors, impacts and benefits to drive the transition towards more sustainable behaviour of young people;
- inform on opportunities and inspire study and work careers in the domain

To participate in the bioeconomy prize of the Startupper School Academy, small teams of high school students (up to 5) should present a business idea for a product or service dealing with the bioeconomy of bio-based products. The Startupper School Academy has different phases in which the students receive different types of mentoring and training, to transform their initial idea into a concrete business plan, to be presented in the form of a pitch to the jury.

The best idea receives 1.500 Euro (provided by Novamont), the second and third ranked ideas receive a set of bio-based products and are invited to present their solution in the context of large-scale events where BIOVOICES/Transition2BIO are exhibiting.



Figure 27 – Promotion for the Startupper School Academy

An intense package of capacity building activities is delivered both by Lazio Innova (mainly competences related to entrepreneurial skills and practical skills about design and prototype development) and the bioeconomy partnership (information about bioeconomy and bio-based products, the applications in everyday fields, the impacts of bioeconomy in the economy, society and environment, the business and careers opportunities in the domain, etc. See Figure 28.

The package aimed at providing insightful contents, educational materials and inspirational case studies on the bioeconomy and bio-based products (see GenB deliverable D3.1 for more details on the capacity building package).



Figure 28 - Capacity building by the Transition2BIO coordinator at the Startupper School Academy

– **Guidelines for the implementation**

As experienced in the context of the school competitions implemented by the Startupper School Academy and Bioeconomy4YOU, to organize a school project in the context of an existing, well known and already established initiative has several advantages:

1. the impact is much higher compared to the one reachable by a stand-alone EU project
2. the resources available for promotion, contacting the schools, assisting, responding to requests is significantly higher and is undertaken by the main organizer
3. the visibility of the activity is amplified by the partners' and main organisers' communication channels, including media
4. in the case of the Bioeconomy4YOU, it was an effective way to involve young generations in a very important national event such as the Bioeconomy Day in Italy, bringing on stage their voices. See Figure 29.





Figure 29 – Young people on stage at the Bioeconomy4You award ceremony

5. in the case of the Startupper School Academy, it was an effective way to reach indirectly regional authorities and policymakers involved in awarding and promoting the prize, raising their interest in the bioeconomy. See Figure 30.



Figure 30 – Regional authorities and policymakers at the Startupper School Academy award ceremony



In addition, the involvement of external partners like Novamont, cluster SPRING and Re Soil Foundation enriches the contents available for the participants and the prizes available for the winners.

The Startupper School Academy and the Bioeconomy4YOU school projects are designed in Italian for Italian students and teachers but represent two effective replicable formats to be implemented also in other contexts.



3.2.6 Indicative timing of all activities planned in T2.2

GenB GANTT for WP2 activities																															
Leader	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	
<b>T2.2a: Role-playing game on bioeconomy jobs in schools - in 3 countries</b>	AIJU																														
In EL (Greece)	QPL/HSPN																														
In ES (Spain)	AIJU																														
In EU (Europe)	EUN																														
<b>T2.2b: TEDx pitches - in 3 countries</b>	FVA																														
In EU (Europe)	EUN																														
In IT (Italy)	FVA																														
In SK (Slovakia)	PEDAL																														
<b>T2.2c: Bioeconomy careers infodays - in 4 countries</b>	APRE																														
In EL (Greece)	QPL																														
In EU (Europe)	EUN																														
In IT (Italy)	APRE																														
In SK (Slovakia)	PEDAL																														
<b>T2.2d: A day in a biorefinery study visit - in 3 countries</b>	BTG																														
In EU (Europe)	EUN																														
In IT (Italy)	APRE																														
In NL (The Netherlands)	BTG																														
<b>T2.2e: Schools projects to grow future entrepreneurs - in 1 country</b>	FVA																														
In IT (Italy)	FVA																														

✔ Activity implemented   
 ⓘ Planned in the context of a specific event   
  No indicated timeframe

Figure 31: Indicative timing of each partner for all activities under task 2.2

### 3.3 Educate young people to promote the biotransition

Task 2.3 promotes sustainable and circular behaviours and lifestyles through the delivery of dedicated educational activities using the toolkits developed in WP1. The following formats will be developed/provided within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning
- Task 2.3c: “Online bio educational village”




Activity	Target	What for	KPI	Target Countries
#24 Educational activities using the toolkits		Book for kids, videos, games, quizzes and exercises	#720 young people	AT, IT, SK, ES, EL, BE, PT, NL
#8 “Bioeconomy talks/seminars” inquiry-based learning		Inquiry based learning to stimulate students’ reflection and debate;	#400 young people	AT, IT, SK, ES, EL, BE, PT, NL
#1 “online bio educational village” in English		Self-guided or facilitated online education activities (such as Geco For School, Gather town)	#5000 young people	EU

Table 5: WP2 formats to educate young people to promote the biotransition

Each of these formats is briefly described below.

#### 3.3.1 Task 2.3a: Educational activity using the toolkits

##### – Objective and expected outcomes

This activity is aimed to educate children and young people to promote the biotransition, through the activities collected and created in the GenB Project Toolkits.

The expected outcomes are:

- To educate a total of 720 young people in 8 countries: Austria (ZSI), Italy (APRE-FVA), Slovakia (PEDAL), Spain (AIJU), Greece (HSPN), Belgium (EUN), Portugal (LOBA) and Netherlands (BTG).
- In each country, a total of 90 students should participate in the educational activities, 30 for each target group: pre/early school, elementary school and high school.

##### – Description of the activity

Within WP1, the GenB project will develop a total of six Toolkits for different target groups (young people, teachers, and other multipliers), as follows:

- a toolkit for young people at age 4-8 (Pre/Early school)
- a toolkit for young people at age 9-13 (Elementary school)
- a toolkit for young people at age 14-19 (High school)
- a toolkit for teachers (formal education professionals).
- a toolkit for other multipliers (non-formal education professionals).
- a toolkit for boosting collaboration among teachers, parents, and youth.

The GenB project Toolkits (*under development*) are a compilation of materials and resources aimed at promoting knowledge about the Bioeconomy and enabling the acquisition of significant learning on the subject.

The educational activities aim to take advantage of the didactic potential of the Toolkits and develop learning experiences that allow educating students in Bioeconomy, giving them a leading role in the ecological transition, in accordance with the purpose of the GenB Project.

These activities will constitute practical cases of knowledge generation on Bioeconomy in real environments.

– ***Inspirational previous experiences:***

As an inspiring experience it is worth highlighting **AJU's ToyLab Experience**, introduced before (in the report section on role-playing games). See Figure 32 and Figure 33.

The ToyLab is organised in different thematic areas, based on key and priority themes for the European Union strategy, among which environmental sustainability and bioeconomy stand out, together with gender equality, STE(A)M learning, multiculturalism, accessibility, etc.

Regarding the ToyLab space to raise awareness, promote and educate in sustainability, it offers children a wide range of games and toys focused on disseminating and working on these values, as can be seen in Figure 32 and Figure 33 below.



Figure 32 - AIJU's ToyLab space offers a wide range of games and toys (picture #1)



Figure 33 - AIJU's ToyLab space offers a wide range of games and toys (picture #2)

The ToyLab hosts workshops, co-creation events and various educational activities aimed at raising social awareness among children and young people, fostering citizen participation among

children and young people, and developing learning about key concepts and issues, such as sustainability.

The ToyLab also organises thematic play sessions focused on key topics, that allow to learn through a playful perspective. In the case of sustainability, in these sessions children play cooperatively with games and toys that allow them to develop multiple skills and abilities, such as: learning the functioning of ecosystems, developing pro-environmental attitudes, learning sustainable habits (recycling, reusing, waste management), etc. Some of these games and toys are shown in Figure 34 and Figure 35.



Figure 34 - Games and toys at the AIJU's ToyLab space used for thematic play sessions (picture #1)



Figure 35 - Games and toys at the AIJU's ToyLab space used for thematic play sessions (picture #2)

In addition, these games also include bio-based toys and games, as well as toys made from recycled materials and bio-degradable plastics. In these cases, the importance of these options is emphasized, encouraging children's preferences and interest in choosing these types of toys. See Figure 36 and Figure 37.



Figure 36 - Toys made from bio-based or recycled feedstock, for use at AIJU's ToyLab space (picture #1)





Figure 37 - Toys made from bio-based or recycled feedstock, for use at AIJU's ToyLab space (picture #2)

Another inspiring experience concerns the **workshops** developed in the framework of the earlier mentioned **Childtizens Project**. This project aims to take advantage of the educational potential of playing to promote the development of social and civic values (such as sustainability, gender equality, accessibility, or multiculturalism) in children, as well as to enhance children's civic participation. See Figure 38



Figure 38 - Kids at work during Childtizens workshop promoting social and civic values and participation

In order to achieve this objective, one of the tasks carried out was the development of workshops with students from 8 to 12 years old in different schools. These workshops were



aimed at encouraging children's participation in transforming their school playgrounds into more sustainable and inclusive spaces in terms of gender, culture, and diversity.



Figure 39 - Kids at work during Childtizens workshop on transforming their school playground (picture #1)

Through games and gamified dynamics designed and implemented by AIJU, the children carried out a SWOT analysis of their playgrounds, expressed their opinions and wishes, formulated proposals and planned how to put them into practice. See Figure 39 and Figure 40.

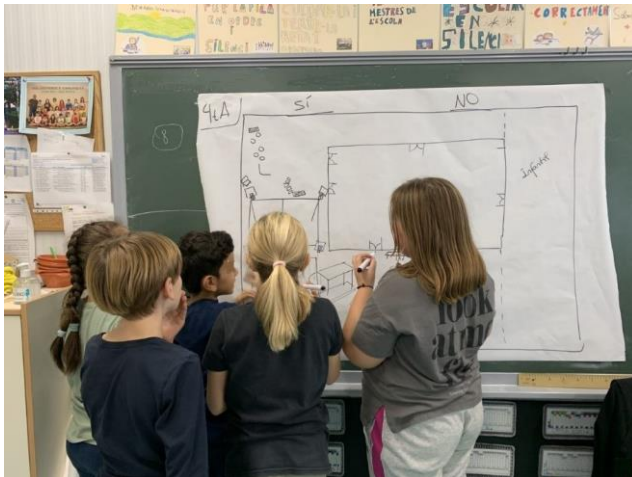


Figure 40 - Kids at work during Childtizens workshop on transforming their school playground (picture #2)

It is, therefore, an educational activity that was very well received by both the students and the teachers at the participating schools.

– **Guidelines for the implementation**

The educational activities will be implemented once the GenB Project Toolkits have been created in WP1.

These activities will be an excellent opportunity to turn the work of creating the Toolkits into real experiences that promote the active learning of young people on Bioeconomy content. In this way, the Toolkits will become a living reality, with the capacity to encourage young people to move towards the transition to the circular Bioeconomy.

To develop the educational activities, the following steps will be followed:

1. AIJU experts will create a draft version of 3 educational proposals for using the Toolkits, one for each age group: pre/early school, elementary school and high school. These versions will be created in English.
2. The draft version will be circulated to the partners involved to enable them to provide input and contributions to the document.
3. With the contributions of the partners involved, AIJU will elaborate the final version of the guidelines for implementing the educational activities using the Toolkits.
4. AIJU will send the final version of the document to the partners involved, who will take care of the translations into the national languages, if required to implement the activity. AIJU will also translate the document into Spanish in order to implement the activity in Spain.
5. Each partner involved will be in charge of looking for collaborating educational centres in their country, where they can develop the educational activities.
6. After the contact with the schools and their consent to participate in the activity, each partner involved will be in charge of developing the activities in their country. In each country a total of 90 students should participate in these activities, 30 for each of the three age groups.

3.3.2 Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning

– **Objective and expected outcomes**

This activity involves the organization of bioeconomy talks/seminars to stimulate students’ reflection and debate in the classroom or in science-related events (like European Researchers’ Night<sup>5</sup>). This format could be also delivered by experts in bioeconomy about hot topics of relevance in the partner country.

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<sup>5</sup> The [European Researchers’ Night](#) takes place annually, on the last Friday of September. It is the occasion for a Europe-wide public and media event for the promotion of research careers.

A total of eight bioeconomy talks/seminars are expected to be held (1 per country), reaching 50 young students and teachers in each country.

– **Description of the activity**

Inquiry-based learning (IBL) is a method that encourages (young) students to ask questions and investigate real-world problems. In this type of learning environment, students are actively engaged in the learning process and are given the opportunity to explore their curiosity. This type of learning is often hands-on and allows students to connect what they are learning in the classroom and the real world. Inquiry-based learning has been shown to improve critical thinking skills, problem-solving skills, and creativity.

There are four types of inquiry-based learning<sup>67</sup>:

- **Structured Inquiry.** Students follow the lead of the teacher, who introduces an essential question and then guides students through specific activities, resources, and assessments.
- **Controlled Inquiry:** Students explore one question from several different questions generated by the teacher using a selection of resources curated by the teacher.
- **Guided Inquiry:** The teacher introduces topics and students begin to formulate their own questions as well as select their own resources to research their answers.
- **Free Inquiry:** Students, with the support of their teacher, design their own questions, select their own resources, and customize their own summative assessments to demonstrate what they learned.

– **Inspirational previous experiences**

As a part of the 39<sup>th</sup> Science Project Workshop (SPW39) and the teacher trainings organized in the Future Classroom Lab, several groups of international EC, primary and secondary school teachers and teacher trainers attended inquiry-based learning (IBL) seminars aimed at introducing teachers to the basic terms of bioeconomy. The IBL seminars, organised by EUN, took place in Brussels on 25 March 2023 and 17 April 2023, and are documented [here](#).

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The European Researchers' Night targets the general public, addressing and attracting people regardless of the level of their scientific background, with a special focus on families, pupils and students. The European Researchers' Night will also bring researchers to schools to interact with pupils.

<sup>6</sup> <https://www.splashlearn.com/blog/what-is-inquiry-based-learning-a-complete-overview/>

<sup>7</sup> <https://xqsuperschool.org/uncategorized/what-is-inquiry-based-learning-ibl/>



Figure 41 - inquiry-based Learning on Bioeconomy at Future Classroom Lab workshop (17 April 2023),

The Italian partners (APRE and FVA) also implemented IBL seminars in Spring 2023. On 10 May 2023 APRE presented the bioeconomy, the educational materials, the experience of the living labs, the job profiles of the bioeconomy and last, but not least, the new GenB Ambassadors call to high school students and teachers during an event organised by CNR (Italian National Research Council) for the high school Scuola Luigi Sturzo di Castellammare di Stabia (Naples). On 23 March and 3 May 2023, FVA organised (online) IBL seminars in the context of the Italian Living Labs (see WP1).

– **Guidelines for the implementation**

As a first step the opportunities to collaborate with WP1 (Task 1.4: Toolkit development ) and WP3 (Engaging, empowering and supporting GenB youth ambassadors) will be explored.

Implementation of this format will require the following in each participating country:

1. Identify domain/topic within the bioeconomy of interest to the country/region in which the activity takes place.
2. Develop/collect/assemble information, presentations, and other supporting materials.
3. Connect with schools and make detailed arrangements on practicalities.
4. Implement activity.
5. Report the activity.

Below are some tips that can be used when implementing the activity.

- Start with a question. The best way to start an inquiry-based lesson is by asking a question. This will get students thinking about the topic and will encourage them to ask questions.

- Allow students to explore the topic on their own. This will help them to understand the material better.
- Encourage students to discuss their ideas with each other.
- Be sure to provide students with resources that they can use to explore the topic.
- At the end of the lesson, be sure to summarize what was learned. This will help students to remember the information.

### 3.3.3 Task 2.3c: “Online bio educational village”

#### – **Objective and expected outcomes**

The objective of this activity is to offer a blended learning experience, mixing online and offline learning to engage students and teachers in a virtual environment to be explored, which is engaging, fun and immersive. Learners learn through topics presented in images, audio, videos and text.

Students can work independently or in group, progressing through their learning journeys and having access to various settings and different levels of training materials, including short comprehension exercises, to consolidate learning.

The aim is to engage students and teachers through practice games, to build knowledge step by step using an informal, experiential approach.

#### – **Description of the activity**

The online bio educational village is a format whose aim is to offer a self-guided or facilitated online educational spaces, where the students can explore and navigate among educational activities. The format is very effective to introduce the bioeconomy through experiential learning and using a gamified experience in order to convey different messages and inspire students in deepening the topics.

#### – **Inspirational previous experiences**

Regarding online educational experiences, two virtual collaboration platforms from Italy targeting young people and using a gamified approach and avatars, are of interest. The first, Geco For School, covers different sustainability topics, including circular economy. The second, Gather Town, is a platform that provides a virtual context to foster collaboration, communication and facilitate team activities.

**Geco For School** is an [online educational platform](#) providing Italian secondary schools and students with educational modules related to sustainability. See Figure 42.

This initiative was launched for the first time in 2021 and Transition2BIO partner FVA was contacted to contribute by providing contents related to the circular bioeconomy. See Figure

43. This experience is a very good example of how effective it could be to enter as a partner in already existing initiatives that will take care of the logistics, the involvement of participants, the promotion, etc., while Transition2BIO provided the contents to be delivered to the participants.



Figure 42 - Screenshot of the Geco For School online educational platform

Geco For School guides the visiting students in virtual travel in the sustainability world, by providing educational experiences in different topics connected to the European Green Deal and sustainability. The topics covered are:

- Eco-food
- Circular Economy
- Renewable Energies
- Green Mobility
- Sustainable Tourism

The training sessions are available as pre-recorded videos, providing the main concepts of the circular bioeconomy, the connection with the circular economy, the main application fields, the impacts of the society, the economy and the environment, showcasing several bio-based products and finally providing example of jobs in the bioeconomy, to inspire young generations in following these educational pathways and careers.

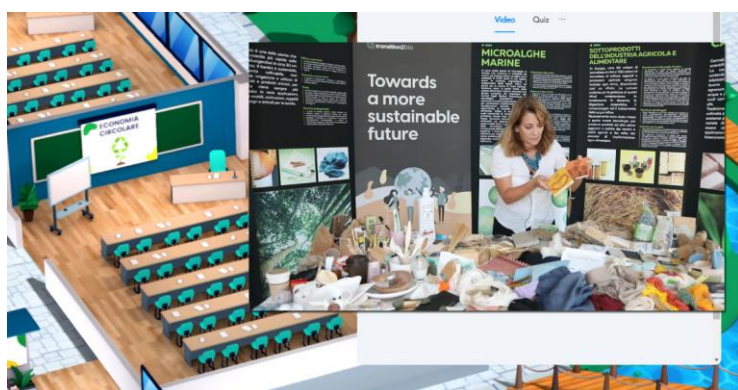


Figure 43 - Susanna Albertini (FVA) demonstrating bio-based products in Geco For School webinar

The schools participating in the initiative can enter the platform on a pre-booked date and can freely explore the virtual space, using their personal 3D avatar. Several events are available, including live interaction and a series of educational content. Ultimately, they should have attended all the training modules and can complete the online gamified self-assessment session. Based on their scores, the best students can win educational prizes, made available by the Geco For School's partners.

**Gather Town** is an online collaboration platform providing a virtual context to foster collaboration, communication and facilitate team activities. See Figure 44

It was implemented in the context of TETRA project, in which FVA designed a webinar village where all the participants, thanks to an avatar, could explore, interact with people and objects and network with peers. When entering the village for the first time, it is possible to personalize the avatar and select the webcam, speakers and microphone. While exploring the virtual environment, participants can control their avatars using the arrows keys on their keyboard and facilitators can activate assignments to actively engage them.

One of the most innovative features of this platform is the proximity function, meaning that, like in real life, if you increase the distance from a group of people, you will not be able to hear and see them and vice versa. This feature gives the freedom to meet other participants, network and discuss privately about the assignments given during the webinar from the facilitators. In fact, it is possible to have a private meeting with your team, or a plenary session with all the participants and facilitators just by entering different spaces that have been designed in the village. The facilitators can invite participants to move to plenary, free and private spaces based on the different moments of the webinar.



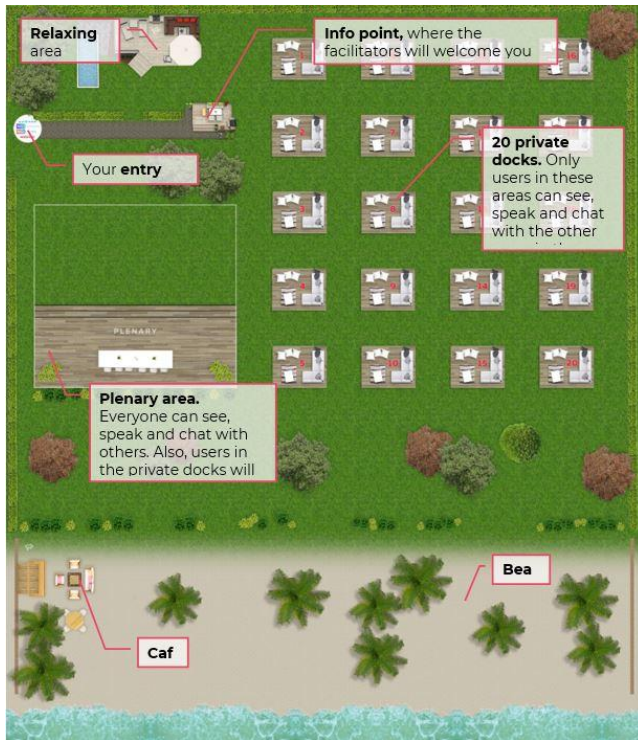


Figure 44 - Screenshot of the Gather Town online collaboration platform

– **Guidelines for the implementation**

The above-mentioned case studies provide very good examples of how to effectively implement online educational experiences using a gamified approach and giving students and teachers the opportunity to explore virtual environments to stimulate their curiosity in deepening the educational contents.

In the context of GenB, FVA partner is exploring two different approaches to develop and implement this format:

- Geco For School: is an example on how this activity could be implemented in already existing initiatives that will take care of the logistics, the involvement of participants, the promotion, etc. This collaboration maximises the impact of the overall activity, leaving the partners the possibility to allocate the effort on the provision of the awareness and info-education content to be delivered to the participants. Students who attended all Geco For School training modules were able to access the online gamified self-assessment session. Based on the scores, the best students won educational prizes,



made available by the project's partners. For example, in the context of Transition2BIO, the project made available to the winners of the circular bioeconomy session some bio-based gadgets and a 2-hour webinar to deepen the contents related to the bioeconomy topics. This format was improved with new educational contents and already implemented in the first months of GenB (see section 6.3).

- Escape game in Gather Town: starting from the successful experience in the TETRA project, FVA is exploring a preliminary idea to develop in English an online educational escape game on bioeconomy, developed starting from the live escape game that is under development in Italian, in the context of the Italian living lab with high school students.



### 3.3.4 Indicative timing of all activities planned in T2.3

GenB GANTT for WP2 activities			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30
	Leader																															
<b>T2.3a: Educational activity using the toolkits - in 8 countries</b>			<b>AIJU</b>																													
In AT (Austria)	ZSI								✓																							
In EL (Greece)	HSPN																															
In ES (Spain)	AIJU																															
In EU (Europe)	EUN									✓																						
In IT (Italy)	FVA																															
In NL (The Netherlands)	BTG																															
In PT (Portugal)	LOBA																															
In SK (Slovakia)	PEDAL																															
<b>T2.3b: Bioeconomy talks/seminars inquiry-based learning - in 8 countries</b>			<b>BTG</b>																													
In AT (Austria)	ZSI																															
In EL (Greece)	HSPN																															
In ES (Spain)	AIJU																															
In EU (Europe)	EUN																															
In IT (Italy)	FVA																															
In IT (Italy)	APRE																															
In NL (The Netherlands)	BTG																															
In PT (Portugal)	LOBA																															
In SK (Slovakia)	PEDAL																															
<b>T2.3c: Online bio educational village</b>			<b>FVA</b>																													
In EU (Europe)	FVA																															

✓ Activity implemented    ① Planned in the context of a specific event    No indicated timeframe

Figure 45: Indicative timing of each partner for all activities under task 2.3

### 3.4 Educate teachers in teaching the bioeconomy

Task 2.4 equips **teachers** with a package of knowledge and capacities based on the toolkits developed in WP1 to train their students in bioeconomy through online courses. The following formats (online course modules) will be developed/provided within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”


Activity	Target	What for	KPI	Target Countries
What’s bioeconomy” MOOC		Training and equipping teachers using the GenB Massive Open Online Course (MOOC)	#800 teachers #12.000 students indirect	
How to use GenB toolkits		Training and equipping teachers using the GenB toolkit/s	3 toolkits	AT, IT, SK, ES, EL, BE, PT, NL
“Bioeconomy job profiles” on factsheets explanation		Training and equipping teachers and career counsellors using GenB job profiles	4 job profiles	

Table 6: WP2 formats to educate teachers in teaching the bioeconomy

Each of these formats is briefly described below.

#### 3.4.1 Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC

– **Objective and expected outcomes**

A GenB Toolkit is a compilation of materials and resources aimed at promoting knowledge about the Bioeconomy and enabling the acquisition of significant learning on the subject. The GenB project will develop a total of six Toolkits (currently under development in WP1), including one specifically targeting teachers (formal education professionals).

A massive open online course (MOOC) or an open online course is an online course aimed at unlimited participation and open access via the Web. In addition to traditional course materials, such as filmed lectures, readings, and problem sets, many MOOCs provide interactive courses with user forums or social media discussions.

The objective of the “What’s bioeconomy” MOOC is to train teachers from all over Europe and beyond in teaching bioeconomy by providing them with the introduction in the bioeconomy field and applications in teaching. In short, through this MOOC, teachers will:

- understand what the bioeconomy is, its importance for society and for students.
- explore the different teaching materials included in the GenB toolkit
- learn how to use bioeconomy in educational contexts and help them innovate their classroom practices.

In total, #800 teachers and #12.000 students indirectly will be involved in the MOOC.

– **Description of the activity**

EUN will start, in close collaboration with the GenB partners, the development of MOOC content in summer 2023. The MOOC content will include the knowledge and existing materials developed within the BLOOM and Transition2BIO online courses as well as new materials that are developed within the GenB project. Participants will be presented with the GenB toolkits and other teaching materials related to bioeconomy. They will be instructed on how to implement and adapt the toolkits and additional materials to fit the needs of their students and to fit their lessons. Additionally, participants will learn how to obtain information about careers in bioeconomy and anticipate their development in the future, how to facilitate students towards developing necessary skills and knowledge to engage in such careers, as well as how to discuss these careers and raise interest of students.

– **Inspirational previous experiences**

As part of the BLOOM project, EUN developed and coordinated the “Boosting Bioeconomy Knowledge in Schools” MOOC, an online flexible training platform for teachers interested in teaching bioeconomy as part of their science, technology, engineering and mathematics (STEM) lessons. The basis of the MOOC was the BLOOM School Box, a collection of lesson plans co-created by the 20 BLOOM pilot teachers from 10 countries, which illustrate how bioeconomy can be introduced in different STEM subjects.

Throughout the online course, participants were expected to learn and understand why it is important to integrate bioeconomy in education, to be able to use concepts related to bioeconomy to contextualise their STEM teaching and to empower students to understand the importance of STEM subjects in solving the environmental, economic and societal issues of tomorrow. Participants of the MOOC were supported through the process by expert teachers who provided guidance and moderated the course. Additionally, teachers were also provided with a community space where they could share their experiences, challenges and insights about the topic, as well as form collaborations and cooperate in different activities. The channels included a dedicated course Facebook group (see Figure 46) Twitter (using the dedicated course hashtag - #BLOOMMOOC) and the course forum.



Figure 46 - The BLOOM MOOC's dedicated Facebook group

The BLOOM MOOC gathered over 800 teachers from 46 countries participating, impacting on almost 10,000 students. Digital certificates of completion were offered to participants who completed a full course.

– **Guidelines for the implementation**

EUN will develop the structure and the content of the “What’s bioeconomy” MOOC in close collaboration with GenB partners with expertise in Bioeconomy. The content production will follow a process of drafting, validating and aligning content (videos, text resources) with project guidelines, visual identity and production of teaching materials. Once the MOOC is ready for running, partners will be asked to disseminate it through their networks in their countries. The MOOC and all the materials included in the MOOC will be prepared in English. However, partners may translate the MOOC or parts of the MOOC (online courses) in the national languages and organize different activities in their countries, after the MOOC runs once.

3.4.2 Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”

– **Objective and expected outcomes**

A GenB Toolkit is a compilation of materials and resources aimed at promoting knowledge about the Bioeconomy and enabling the acquisition of significant learning on the subject. Gen B toolkits are developed with the aim to facilitate teacher training, inspiring and engaging students, parents and other multipliers in the transition to bioeconomy.

The GenB project will develop a total of six Toolkits, that are currently under development in WP1, including one specifically targeting teachers. A detailed description on this activity will be provided in future versions of this deliverable once this toolkit is finalized.

### 3.4.3 Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

#### – **Objective and expected outcomes**

The aim of this activity is to provide teachers with teaching resources that would allow them to introduce different careers and job prospects to students in the field of bioeconomy. These formats would allow teachers to raise students’ interest towards bioeconomy from the perspective of different STEM and non-STEM fields that play an important role in the transition to circular and more sustainable lifestyles.

In total, #1 set of 4 online Bioeconomy job profiles will be developed in the project.

#### – **Description of the activity**

“Bioeconomy job profiles” are teaching materials for high school teachers that consist of bioeconomy factsheets and interviews with bioeconomy experts. These materials contain information on the careers and educational possibilities in the field of bioeconomy. Featured professionals provide insights from the field to spread awareness, inspire and motivate high school learners to pursue a profession in bioeconomy. These profiles will be enriched with the recordings of the career chats with experts where students and teachers will have a chance to chat with the expert and obtain first-hand information about the daily lives of professionals working in different sectors of the field, the perks and challenges of the profession, and educational requirements in order to become an expert in the field.

#### – **Inspirational previous experiences**

As a part of several projects EUN has implemented this format with a great success. As an integral part of the STE(A)M IT project a series of career profiles was developed, collected and published as a part of the ‘Repository of STEM Jobs Profiles’ on the STE(A)M IT website (see here: <https://steamit.eun.org/category/stem-careers/>). These are intended for teachers and career counsellors to contextualize STEM careers in the classroom, to inform and inspire secondary school students to pursue STEM career paths.

Career Profiles consisted of career fact sheets, video interview and a podcast conducted with different experts in STE(A)M fields. Career Factsheets represent 2-to-3-page documents that serve as an awareness-raising tools for teachers and career counsellors (see for example: [Thomas Wellens](#), Environmental Policy Advisor, Cabinet of the Vice Governors of the province of Antwerp in Figure 47, or [Myriam Badawi](#), Bioinformatician, Biology Department of Le Mans University in Figure 48). The factsheets contain sections that provide information about an expert, their position, day-to-day life, study and career path that allowed them to become an expert and work in a specific STEM field. When filling in these factsheets, experts are encouraged to reflect on the key skills required for the job, as well as on their

inspiration, challenges and future career prospects within the field and the position they are occupying. Lastly, they are asked to provide some advice for the students and teachers. Within the STE(A)M IT project framework, blank career factsheet templates were also provided on the website for teachers to use within different career related activities in their classrooms.

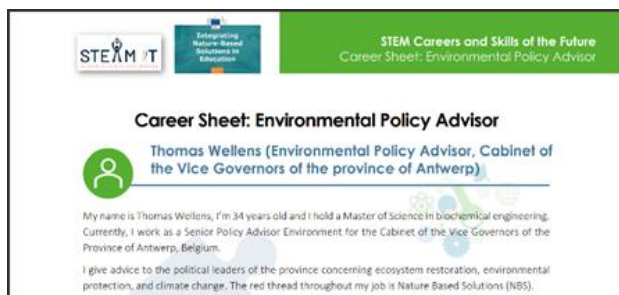


Figure 47 - Example of the Career Factsheet Template: Thomas Wellens



Figure 48 - Example of a Career Factsheet Template: Myriam Badawi

In cases when EUN was contacting experts and developing career profiles, the career factsheets were accompanied by a video interview and a podcast with the expert. In this case, a EUN representative was having a discussion with the expert covering the questions mentioned in the factsheet whilst going further into depth about their career path. The podcasts represent a summary of the interviews, providing the basic information about the specific career. Full profiles, with all the mentioned parts, alongside the specific skills and quote from the expert are published in the Repository of STEM Jobs Profiles on the STE(A)M IT website (see examples: Environmental Policy Advisor, <https://steamit.eun.org/environmental-policy-advisor/> or Bioinformatician, <https://steamit.eun.org/bioinformatician/>)

FVA also has experience interviewing professionals with a view to inspire, inform and attract young generations towards educational and working careers in the bioeconomy, therefore contributing to raise the future generation of workforce informed and interested in this domain.

In the context of the Transition2BIO project and the European Bioeconomy Network (EuBioNet), in collaboration with BIObec project and with the support of Circular Bio-based Europe Joint Undertaking (CBE JU), FVA produced a series of short video interviews to promote the excellence of European young entrepreneurs involved in the Sustainable and Circular Bioeconomy. The target entrepreneurs were all under 35 years old. See Figure 46.



Figure 49 - Video interviews to promote the excellence of European young entrepreneurs

– **Guidelines for the implementation**

The templates for the bioeconomy factsheets have been drafted by EUN, and the front pages are currently being designed by LOBA. The template will be shared with the partners as soon as the visual design is finalized. Upon finalization of the template EUN will contact partners to agree on the experts that will be featured in the profiles. The selection of experts will be done in close collaboration with project partners. Upon selection, experts will be contacted and provided with the factsheet to fill in. Upon the receiving the document, EUN will conduct an interview with the expert. Upon finalization of the process, EUN will edit the document and provide partners with the final results. The full profiles will be published on a dedicated page of the Gen B website.





### 3.4.4 Indicative timing of all activities planned in T2.4

GenB GANTT for WP2 activities			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30
	<b>Leader</b>																															
<b>T2.4a: What's bioeconomy MOOC - in 8 countries</b>		<b>EUN</b>																														
In AT (Austria)	ZSI																															
In EL (Greece)	HSPN																															
In ES (Spain)	AIJU																															
In EU (Europe)	EUN																															
In IT (Italy)	FVA																															
In NL (The Netherlands)	BTG																															
In PT (Portugal)	LOBA																															
In SK (Slovakia)	PEDAL																															
<b>T2.4b: How to use GenB toolkits - in 8 countries</b>		<b>EUN</b>																														
In AT (Austria)	ZSI																															
In EL (Greece)	HSPN																															
In ES (Spain)	AIJU																															
In EU (Europe)	EUN																															
In IT (Italy)	FVA																															
In NL (The Netherlands)	BTG																															
In PT (Portugal)	LOBA																															
In SK (Slovakia)	PEDAL																															
<b>T2.4c: Bioeconomy job profiles - in 8 countries</b>		<b>EUN</b>																														
In AT (Austria)	ZSI																															
In EL (Greece)	HSPN																															
In ES (Spain)	AIJU																															
In EU (Europe)	EUN																															
In IT (Italy)	FVA																															
In NL (The Netherlands)	BTG																															
In PT (Portugal)	LOBA																															
In SK (Slovakia)	PEDAL																															

✔ Activity implemented 
 ⓘ Planned in the context of a specific event 
  No indicated timeframe

Figure 50: Indicative timing of each partner for all activities under task 2.4

### 3.5 Inform and educate other multipliers to promote the bioeconomy

Task 2.5 engages and supports **non-formal educators** (such as museums, theatres, festivals, fairs, amusement parks, journalists, NGOs, science communicators, media producers, etc.) that work with young generations to act as multipliers by adopting the GenB toolkits as part of their activities. The following formats will be developed/provided:

- Task 2.5a: Informative webinar in partners’ countries
- Task 2.5b: individual meetings with 3 multipliers in each country


Activity	Target	What for	KPI	Target Countries
8 informative webinars in partners’ countries (one each)		“How to embed bioeconomy in informal education settings”.	#80 plus #24 multipliers	AT, IT, SK, ES, EL, BE, PT, NL
24 individual meetings (3 multipliers in each partner country)		Engaging multipliers to adopt GenB toolkits.	#4.000 young people indirect	

Table 7: WP2 formats to inform and educate other multipliers to promote the bioeconomy

Each of these formats is briefly described below.

#### 3.5.1 Task 2.5a: Informative webinar in partners’ countries

– **Objective and expected outcomes**

To increase GenB impact and to reach wider audiences by engaging and supporting multipliers, that work with young generations by adopting the GenB toolkits as part of their activities.

– **Description of the activity:**

The webinars build capacities outside the GenB consortium and empower multipliers in GenB countries with the aim to continue the efforts in raising awareness, informing, and educating young people about bioeconomy and increase the impact of GenB in partner countries.

In total, #8 informative webinars are expected in the project, reaching at least 80 multipliers. This means that at least 1 webinar will be organized per project country, attended by at least 10 participants.

– **Inspirational previous experiences**

Capacity building on bioeconomy, targeting various audiences, was organized for example in the Transition2BIO project. As a part of its educational activities, Transition2BIO developed a capacity building package, consisting of 5 modules. These were tested with several target audiences, contexts, and target beneficiaries in the light of empowering public actors at local, regional, and national level. More information: <https://www.transition2bio.eu/capacity-building/>

– **Guidelines for the implementation**

The task builds up on Task 1.4 and its results (a set of GenB Toolkits), which are expected to be delivered in M18 the latest. However, it is recommended to start with preparatory activities from an early stage of the project.

**Who to contact?**

The GA defines multipliers as non-formal educators, such as museums, theatres, festivals, fairs, amusement parks, journalists, NGOs, science communicators, media producers, etc.

For this purpose, partners can use their stakeholders lists and reach to existing contacts. Reaching out to new contacts that might be interested in collaboration is recommended. Organizations dealing with wider topics, such as sustainability, climate change or various environmental issues can be considered.

**What is our value proposition?**

GenB can offer valuable materials, tools as well as experience in various activities aimed at awareness-raising, informing, or educating about bioeconomy.

A series of webinar modules (recordings) presenting various topics related to bioeconomy will be prepared in collaboration with GenB partners. Each partner will have the opportunity to design the webinar according to the needs and preferences of the target audience in the respective country.

**How will the content be prepared?**

A collection of recordings (modules), presenting various topics, will be produced in several GenB work packages and tasks. The list of modules will be created in the first months of WP2 and produced in collaboration with GenB partners. All modules will be made available to all partners, so that each partner can adjust the content of its informative webinar to the type of multipliers in their countries, their level of knowledge, the type of activities conducted by the multipliers or planned to be carried out within GenB.

3.5.2 Task 2.5b: individual meetings with 3 multipliers in each country

– **Objective and expected outcomes**

To increase GenB impact and to reach wider audiences by engaging and supporting multipliers - non-formal educators (such as museums, theatres, festivals, fairs, amusement parks, journalists, NGOs, science communicators, media producers, etc.) that work with young generations by adopting the GenB toolkits as part of their activities.

– **Description of the activity**

In total, #24 individual meetings with multipliers are expected in the project. At the partner level, at least 3 meetings with different multipliers should be organized.

Ideally, these meetings should result in closer collaboration with the selected multipliers in future GenB activities. For this purpose, activities, as well as supporting GenB materials (such as the toolkits) can be presented to the multipliers.

– ***Inspirational previous experiences***

The Living Labs organized within the frames of GenB in Austria, Italy or Slovakia can serve as inspirational experience. GenB partners in all countries were expected to find local partners willing to participate in the living labs. First, schools interested in the topic of bioeconomy were identified. Presentation of the format, as well as materials that can be used in living labs, was provided. Where needed, training of teachers or initial activity with pupils was carried out.

– ***Guidelines for the implementation***

**Who to contact?**

It is recommended to use the stakeholder list mentioned in section 3.5.1. From the long list, multipliers can be selected based on their interest in the topic and/or mutual collaboration.

**What is our value proposition?**

- Each GenB partner will conduct several activities targeting young people or the general public. The consortium has experience and plans implementation of various activities, which can be supporting the mission of some multipliers. Several materials that can be shared are already available or will be produced in the next months. Looking for synergies and potential collaboration in implementation of some of the GenB activities can be proposed to the multipliers.
- In addition to that, webinars planned in Task 5.2b can be of high value to organizations new to the topic but interested in diving deeper into it.



### 3.5.3 Indicative timing of all activities planned in T2.5

GenB GANTT for WP2 activities		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30
	<b>Leader</b>																														
<b>T2.5a: Informative webinar in partners' countries</b>	<b>PEDAL</b>																														
In AT (Austria)	ZSI																														
In EL (Greece)	QPL																														
In ES (Spain)	AJU																														
In EU (Europe)	EUN																														
In IT (Italy)	APRE																														
In NL (The Netherlands)	BTG																														
In PT (Portugal)	LOBA																														
In SK (Slovakia)	PEDAL																														
<b>T2.5b: Individual meetings with 3 multipliers in each country</b>	<b>PEDAL</b>																														
In AT (Austria)	ZSI																														
In EL (Greece)	QPL																														
In ES (Spain)	AJU																														
In EU (Europe)	EUN																														
In IT (Italy)	APRE																														
In IT (Italy)	FVA																														
In NL (The Netherlands)	BTG																														
In PT (Portugal)	LOBA																														
In SK (Slovakia)	PEDAL																														

✔ Activity implemented   
 ! Planned in the context of a specific event   
  No indicated timeframe

Figure 51: Indicative timing of each partner for all activities under task 2.5

## 4 Planned WP2 activities – Austria

### 4.1 Task T2.1 Inspire and inform young people on bioeconomy

The following formats will be implemented within this Task:

- Task 2.1a: Conducting hands-on labs
- Task 2.1d: BioArt Gallery

#### **Task 2.1a: Conducting hands-on labs**

- **Brief description:** ZSI will try to engage schools as well as participate in different events related to the bioeconomy and conduct different experiments with the children and young adults depending on their ages. For very young children creation of colours from natural materials and painting as well as the memory game (developed in Transition2BIO), while for the older children creation of plastic from bio-based materials (e.g. from Transition2BIO) may be fitting. The exact activities will be decided depending on the age group and context.
- **Target groups:** 4-19 year olds
- **GenB partner:** ZSI
- **Collaboration partner:** -
- **Context:** The activities will be conducted either in collaboration with schools (new schools or those already taking part in the living labs) as well as events related to the bioeconomy.
- **Form of the activity:** physical event
- **Duration:** 1-2 hours depending on the context
- **(Tentative) timing:** from September 2023 until June 2024. On 19 April 2023, ZSI already performed a Hands-on labs producing bioplastic from orange peels, at the high school AHS Karajangasse in Vienna (in combination with the BioArt Gallery, see below).

#### **Task 2.1d: BioArt Gallery**

- **Brief description:** The “BioArt Gallery” will feature selected roll-ups and banners related to the bioeconomy (e.g. from BLOOM and Biovoices projects) in German as well as an exhibition of bio-based materials (e.g. from the [BLOOM Bioeconomy Suitcase](#)). Depending on the context, the [online version of the BioArt Gallery](#) will also be made available to the audience (in English).
- **Target groups:** Children aged between 9 and 13 years old, high school students (14-19 years old), their teachers and families
- **GenB partner:** ZSI
- **Collaboration partner:**

- **Context:** The BioArt Gallery exhibit will be put on display at a collaborating school, where possible or/and bioeconomy related events in Austria.
- **Form of the activity:** physical event
- **Duration:** 2-3 hours (guided) and possibly for a longer duration as a stand-alone exhibition
- **(Tentative) timing:** Between September 2023 and December 2024. On 19 April 2023, ZSI already performed a BioArt Gallery at the high school AHS Karajangasse in Vienna (in combination with the Hands-on labs, see above).

#### 4.2 Task T2.3 Educate young people to promote the biotransition

The following formats will be implemented within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: "Bioeconomy talks/ seminars" inquiry-based learning

##### Task 2.3a: Educational activity using the toolkits

- **Brief description:** Educational activities using the contents of the toolkits (especially the book, games, quizzes) will be implemented depending on the context and audience e.g. if the activities are implemented in the framework of an event on a specific bioeconomy related topic, then the contents from the toolkits on this topic will be selected and implemented.
- **Target groups:** Early and pre-primary school students from 4 to 8 years old
- **GenB partner:** ZSI
- **Collaboration partner:** -
- **Context:** The activities will be conducted either in collaboration with schools (new schools or those already taking part in the living labs) as well as events related to the bioeconomy.
- **Form of the activity:** physical event
- **Duration:** ca. 1 hour
- **(Tentative) timing:** from April 2024 until February 2025. In May/June 2023, ZSI already performed an Educational activity explaining the concept of bioeconomy and using the contents of the Toolkit to children aged between 6 and 13 at the Volkshule Südstadt, Maria Enzersdorf (in combination with Task 1.3 Living Labs workshops)

##### Task 2.3b: "Bioeconomy talks/seminars" inquiry-based learning

- **Brief description:** "Bioeconomy talks/seminars inquiry-based learning" will involve discussions between high school students (14-19 years old), their teachers and bioeconomy experts on selected topics. The experts will share their expertise and



experiences on the selected topics and the audience will be given a chance to ask questions and take part in resulting discussions.

- **Target groups:** High school students (14-19 years old) and teachers
- **GenB partner:** ZSI
- **Collaboration partner:** -
- **Context:** The activities will be conducted either in collaboration with schools (new schools or those already taking part in the living labs) as well as events related to the bioeconomy.
- **Form of the activity:** physical event
- **Duration:** 1-2 hours
- **(Tentative) timing:** from April 2024 until February 2025

#### 4.3 Task T2.4 Educate teachers in teaching the bioeconomy

The following formats will be implemented within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

For all three formats:

- **Brief description:** The MOOC that aims to build the capacity of teachers in injecting bioeconomy into the existing curriculums (in the topics of “What’s bioeconomy”, “How to use the GenB toolkits” and “Bioeconomy job profiles”) will be organised by EUN. ZSI will support this activity by disseminating it widely in Austria with the aim of engaging Austrian teachers and hence Austrian students indirectly. Furthermore, where needed, selected modules may be translated into German.
- **Target groups:** Teachers
- **GenB partner:** ZSI
- **Collaboration partner:** -
- **Context:** MOOC, online webinars
- **Form of the activity:** online webinar/workshop
- **Duration:** ca. 1 hour per workshop
- **(Tentative) timing:** from April 2024 until February 2025

#### 4.4 Task T2.5 Inform & educate other multipliers to promote the bioeconomy

The following formats will be implemented within this Task:

- Task 2.5a: Informative webinar in partners’ countries
- Task 2.5b: individual meetings with 3 multipliers in each country

**Task 2.5a: “Informative webinars in partner countries”**

- **Brief description:** This webinar will be implemented for an Austrian audience of multipliers in the bioeconomy sector e.g., representatives of museums, theatres, festivals, fairs, amusement parks etc. with the aim of encouraging them to adopt the GenB toolkit as part of their activities, by showing them the contents of the toolkits and discussing possible modes of adoption in their contexts.
- **Target groups:** Multipliers (non-formal educators)
- **GenB partner:** ZSI
- **Collaboration partner:** -
- **Context:** The webinar will be implemented online either as a stand-alone activity or as part of another bioeconomy related online event
- **Form of the activity:** Online
- **Duration:** 1-2 hours
- **(Tentative) timing:** from April 2024 until February 2025

**Task 2.5b: “Individual meetings with three multipliers in each country”**

- **Brief description:** ZSI will arrange meetings with at least three multipliers in the non-formal educational sector (e.g., representatives of museums, theatres, festivals, fairs, amusement parks etc.) to ideally collaborate on future GenB activities (especially in WP2 and WP3) and encourage adoption of the GenB toolkits within their working contexts.
- **Target groups:** Multipliers
- **GenB partner:** ZSI
- **Collaboration partner:** -
- **Context:** These meetings will be held either online or in person depending on the needs of the selected multipliers
- **Form of the activity:** online or physical event
- **Duration:** up to 1 hour
- **(Tentative) timing:** from September 2023 until February 2025

## 5 Planned WP2 activities – Greece

**Commentato [JV1]:** All sections of this chapter to be completed by **HSPN & QPLAN**, as per the Guidelines in Chapter 2.

### 5.1 Task T2.1 Inspire and inform young people on bioeconomy

The following formats will be implemented by consortium partners within this Task:

- Task 2.1a: “Hands-on labs” and playful activities in each country
- Task 2.1b: “Bioeconomy village” at large scale events
- Task 2.1d: “BioArt Gallery”

#### **Task 2.1a: “Hands-on labs” and playful activities in each country**

- **Type of the activity:** Conducting “Hands-on” labs.
- **Brief description:** HSPN and will conduct a range of playful activities and “Hands-on” labs in order to engage young minds in the fascinating world of bioeconomy. Through these labs, students will have the opportunity to explore the practical aspects of bioeconomy experiments in a fun and engaging manner as well as to learn how to create biomaterials.
- **Target groups:** pre-primary and primary education students (4-13 years old)
- **GenB partner:** HSPN
- **Collaboration partner:** -
- **Context:** The activities will be conducted in tandem with appropriate HSPN educational programmes, such as those focused on the environment and sustainability, or those held at schools.
- **Form of the activity:** physical event
- **Duration:** ca. 1 hour
- **(Tentative) timing:** from September 2023 until June 2024

#### **Task 2.1a: “Hands-on labs” and playful activities combined with Task 2.1d: “BioArt Gallery”**

- **Type of the activity:** Conducting “Hands-on” labs.
- **Brief description:** A “Hands-on” lab will be organised by Q-PLAN in order to help children (pre and early school) to see, touch, feel and smell the bioeconomy. A set of experiments will be conducted to show practical applications of the bioeconomy in real life, while we will also play the “bioeconomy memory game”, show videos, distribute the book for kids, discuss on bioeconomy and create different artifacts based on the learnings of the day. During the lab we will also set up the bioeconomy gallery in order to spark discussions about different bio-based products and their sources of feedstock.
- **Target groups:** Pre- and early-school students (4-8 years old)
- **GenB partner:** Q-PLAN

- **Collaboration partner:** -
- **Context:** The “Hands-on” lab will be conducted either in collaboration with a museum (for example the Children’s Museum in Thessaloniki) or in school classrooms or in collaboration with local Centres of Creative Activities for Children (KDAP).
- **Form of the activity:** physical event
- **Duration:** ca. 2 hours
- **(Tentative) timing:** Until March 2024

#### **Task 2.1b “Bioeconomy village” at large scale events & Task 2.1d: “BioArt Gallery”**

- **Type of the activity:** “Bioeconomy Village” & “BioArt Gallery”
- **Brief description:** The “Bioeconomy Village” and the “BioArt Gallery” will be designed to create a fun and immersive experience for participants, allowing them to learn about the bioeconomy through a variety of exhibits and of a collection of roll-up banners. It will also feature interactive exhibits that showcase the latest innovations in the field of bioeconomy, such as biodegradable packaging or biobased textiles. The goal will be to educate students and teachers about the principles of bioeconomy, the potential of bio-based products and materials, and the importance of sustainability.
- **Target groups:** Elementary school students (9-13 years old), High school students (14-19 years old) and their teachers
- **GenB partner:** HSPN
- **Collaboration partner:** QPLAN
- **Context:** The “Bioeconomy Village” and the “BioArt Gallery” exhibit will be put on display during the annual Eco-schools' award ceremony which is held for schools that have successfully implemented the programme in the network for two years running and have received a positive evaluation from the Steering Committee.
- **Form of the activity:** physical event
- **Duration:** ca. 3 hours
- **(Tentative) timing:** March/April 2024

#### 5.2 Task T2.2 Inspire and inform students in bioeconomy careers

The following formats will be implemented within this Task:

- Task 2.2a: “Role-play game” on bioeconomy jobs in schools
- Task 2.2c: “Bioeconomy careers infodays”

#### **Task 2.2a: “Role-play game” on bioeconomy jobs in schools**

- **Type of the activity:** Role-play game on bioeconomy jobs at school for pre- and early-school (4-8 years old)

- **Brief description:** The role-play game on bioeconomy jobs will be a fun and educational activity that can be adapted for pre- and early-school children (4-8 years old) to introduce them to the concept of bioeconomy and the various jobs associated with it. The basic idea is to allow children to role-play as different bioeconomy professionals and learn about their roles and responsibilities. For example, the game could involve children playing the roles of farmers, biologists, chemists, engineers, or entrepreneurs, all of whom play an important role in the bioeconomy.
- **Target groups:** Early and pre-primary school students from 4 to 8 years old
- **GenB partner:** HSPN
- **Collaboration partner:** -
- **Context:** The activities will be conducted in tandem with appropriate HSPN educational programmes, such as those focused on the environment and sustainability, or those held at schools.
- **Form of the activity:** physical event
- **Duration:** ca. 1 hour
- **(Tentative) timing:** from September 2023 until June 2024

#### **Task 2.2c: “Bioeconomy careers infodays”:**

- **Type of the activity:** Bioeconomy career infodays for high school or university students
- **Brief description:** In 2024 Q-PLAN will organise a career info-day for young people, in order to present different job opportunities in the bioeconomy sector (e.g. bioenergy, biotechnology, design of bio-based products, etc.). During the event we will engage different bioeconomy professionals to provide their career testimonials in order to inspire the young generation to follow this career path.
- **Target groups:** High school students (14-19 years old) or university students
- **GenB partner:** Q-PLAN
- **Collaboration partner:** -
- **Context:** The career infoday will be organised either in collaboration with high schools (e.g. American Farm School in Thessaloniki) or with the annual career days of AUTH (Aristotle University of Thessaloniki).
- **Form of the activity:** physical event
- **Duration:** ca. 1 hour
- **(Tentative) timing:** Within 2024

### 5.3 Task T2.3 Educate young people to promote the biotransition

The following formats will be implemented within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning

### **Task 2.3a: Educational activity using the toolkits**

- **Type of the activity:** Introduce children to the concept of biotransition and promote awareness and interest in this field
- **Brief description:** In terms of content, the book, games, quizzes, and exercises can cover a range of topics related to biotransition, such as:
  - What is biotransition? Introducing the concept of biotransition and explaining how it relates to our daily lives.
  - Why is biotransition important? Exploring the importance of biotransition in areas such as sustainability, food security, and healthcare.
  - How does biotransition work? Introducing the science behind biotransition, including genetics, biochemistry, and biotechnology.
  - Who are the people involved in biotransition? Introducing the various careers associated with biotransition, such as scientists, engineers, farmers, and entrepreneurs.
- **Target groups:** Early and pre-primary school students from 4 to 8 years old
- **GenB partner:** HSPN
- **Collaboration partner:** -
- **Context:** The activities will be conducted in tandem with appropriate HSPN educational programmes, such as those focused on the environment and sustainability, or those held at schools.
- **Form of the activity:** physical event
- **Duration:** ca. 1 hour
- **(Tentative) timing:** from April 2024 until February 2025

### **Task 2.3b: "Bioeconomy talks/seminars" inquiry-based learning**

- **Type of the activity:** Introduce children to the concept of biotransition and promote awareness and interest in this field
- **Brief description:** "Bioeconomy talks/seminars" will involve inquiry-based learning to stimulate reflection and debate on the topic of bioeconomy. The activity will involve organizing talks or seminars where experts in the field of bioeconomy can share their knowledge and experiences with the students. By hearing from experts in the field, students can gain a deeper understanding of the importance of bioeconomy and how it relates to their daily lives, as well as explore potential career opportunities.
- **Target groups:** Elementary school students (9-13 years old) and high school students (14-19 years old)
- **GenB partner:** HSPN
- **Collaboration partner:** -
- **Context:** The activities will be conducted in tandem with appropriate HSPN educational programs, such as those focused on the environment and sustainability, or those held at schools.

- **Form of the activity:** physical event
- **Duration:** ca. 1 hour
- **(Tentative) timing:** from April 2024 until February 2025

#### 5.4 Task T2.4 Educate teachers in teaching the bioeconomy

The following formats will be implemented by consortium partners within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

For all three formats:

- **Type of the activity:** Capacity and knowledge building workshops for teachers
- **Brief description:** These online capacity building workshops aim to equip teachers with the knowledge, resources, and skills they need to effectively teach their students about bioeconomy. By providing teachers with these resources, the workshops can help promote a better understanding of bioeconomy among young people and encourage them to pursue careers in this field.
- **Target groups:** Teachers
- **GenB partner:** HSPN
- **Collaboration partner:** -
- **Context:** The activities will be conducted in tandem with appropriate HSPN train-the-trainers capacity building workshops.
- **Form of the activity:** online webinar/workshop
- **Duration:** ca. 1 hour per workshop
- **(Tentative) timing:** from April 2024 until February 2025

#### 5.5 Task T2.5 Inform & educate other multipliers to promote the bioeconomy

The following formats will be implemented within this Task:

- Task 2.5a: Informative webinar in partners’ countries
- Task 2.5b: individual meetings with 3 multipliers in each country

##### Task 2.5a: Informative webinar in partners’ countries

- **Type of the activity:** Informative webinar in Greece for non-formal educators and other multipliers
- **Brief description:** In 2024 Q-PLAN will organise a webinar in Greek titled “How to embed bioeconomy in informal education settings” for non-formal educators (e.g. museums, environmental centres, centres for creative activities for children, theatres, festivals,



science communicators, etc.) and other multipliers. The webinar will focus on presenting the GenB toolkits and showcasing how they can be adopted as part of their activities. The webinar will be based on a presentation created by PEDAL and adapted-translated by Q-PLAN.

- **Target groups:** non formal educators and multipliers
- **GenB partner:** Q-PLAN
- **Collaboration partner:** -
- **Context:** Q-PLAN will organise this webinar as a standalone activity or in conjunction with a bigger online event related to the promotion of the ecological transition.
- **Form of the activity:** online webinar
- **Duration:** ca. 1 hour
- **(Tentative) timing:** Within 2024

#### **Task 2.5b: individual meetings with 3 multipliers in each country**

- **Type of the activity:** individual meetings with 3 multipliers in Greece
- **Brief description:** Q-PLAN will organise at least 3 meetings with different multipliers in Greece that are involved in promoting the ecological transition. Potential multipliers are already being identified in view of this activity (e.g. Mamagea, Resilient Thessaloniki, etc.). During the meetings Q-PLAN will present the project and the key results that could be used by those multipliers in the framework of their activities (e.g. toolkits, library, games, factsheets, etc.).
- **Target groups:** Multipliers
- **GenB partner:** Q-PLAN
- **Collaboration partner:** -
- **Context:** These meetings will be organised either as a standalone activity or in combination with other meetings implemented in the framework of Task 3.4 (preparatory meetings with green youth organizations at local and EU level).
- **Form of the activity:** online meetings
- **Duration:** 1 hour
- **(Tentative) timing:** within 2024

## 6 Planned WP2 activities – Italy

### 6.1 Task T2.1 Inspire and inform young people on bioeconomy

The following formats will be implemented by consortium partners within this Task:

- Task 2.1a: “Hands-on labs” and playful activities in each country
- Task 2.1b: “Bioeconomy village” at large scale events
- Task 2.1d: “BioArt Gallery”

#### **Task 2.1a: “Hands-on labs” and playful activities in each country**

- **Brief description of the activity:** The Hands-on labs are small experiments that touch a number of important aspects of the bioeconomy, including the circular economy, sustainable production, consumption and lifestyle. They are usually conducted by an expert of the GenB staff in schools, schools’ open events or during large scale events (e.g. Maker Faire). The experiments usually include the creation of bio-based materials or other nature-based products.
- **Target group(s):** The Hands-on labs are mostly targeted for pre- and early-school students (4-8 years old), Elementary school students (9-13 years old) and their teachers.
- **GenB partner(s):** APRE
- **Collaboration partner(s):** -
- **Context:** APRE performed the Hand-on labs in 4 classrooms (3 primary and one elementary) involving 90 students and 10 teachers of the I.C. Guicciardini in Rome, a comprehensive institute hosting Pre, early and Elementary schools (March-May 2023). APRE will perform the Hands-on lab during an open event organised by the cultural association “Comitato Mammut” in Rome, involving at least 40 students from the elementary schools (June 2023). The impact reached is 130 students (target KPI: #50 young people for Italy).
- **Form of the activity:** physical event.
- **Duration:** 1.5/2 hours of activity per group of students or classroom.
- **(Indicative/Tentative) timing:** March 2023 and May 2023 already performed in I.C. Guicciardini, June 2023 for the cultural association. Additional Hands-on labs could be organised during 2023 and 2024. Moreover, APRE will submit a proposal to host a satellite event in Italy of the **Bioeconomy Changemakers Festival** - Youth as drivers of the next EU bioeconomy. The festival will take place between 11 and 17/03/2024 in various locations across the EU. A high-level main event will be organised by the European Commission in Brussels on 14 and 15 March 2024. APRE will organise (if the event will be approved) hands-on labs, a bioeconomy village, the bioart gallery, TEDx pitches from GenB Ambassadors and the game developed in the context of the living lab (Task 1.3) organised in Italy.

#### **Task 2.1b: “Bioeconomy village” at large scale events**

- **Brief description of the activity:** The Bioeconomy Village is a collection of more than 350 different bio-based product samples in every day’s life application. This collection can be showcased at exhibitions and large-scale events, enabling visitors to experience, touch and feel the bioeconomy.
- **Target group(s):** Elementary and middle school students (6-13 years old), High school students (14-19 years old), teachers, multipliers (and general citizens)
- **GenB partner(s):** APRE
- **Collaboration partner(s):** -
- **Context:** APRE has exhibited part of the Bioeconomy Village: **a)** in two classrooms (one primary and one elementary) involving 44 students and 5 teachers of the I.C. Giucciardini in Rome, a comprehensive institute hosting Pre, early and Elementary schools (March 2023). **b)** during the I.C. Giucciardini School Festival of the Sustainability on 31 May 2023 involving more than 500 people, including policy makers, teachers, parents, CSOs and students. The Festival was organised in the context of the ASviS Festival (The Italian Alliance for Sustainable Development (ASviS), that brings together almost 300 member organizations among the civil society, and aims to raise the awareness of the Italian society, economic stakeholders and institutions about the importance of the 2030 Agenda for Sustainable Development, and to mobilize them in order to pursue the Sustainable Development Goals).
- **Form of the activity:** physical event
- **Duration:** 1 day per activity.
- **(Indicative/Tentative) timing:** additional events foreseen during the project could host the Bioeconomy Village.

#### **Task 2.1c: “Inside the bioeconomy” experimental exhibitions**

- **Brief description of the activity:** This format is not foreseen for Italy. However, in the living lab in Fermo (see WP1 report) FVA had a small version of the Bioeconomy Village and after the experimental exhibition provided trainees with a small selection of the materials for additional activities with the students not participating to the living lab.

#### **Task 2.1d: “BioArt Gallery”**

- **Brief description of the activity:** The Italian BioArt Gallery consists of 16 thematic compositions of maxi pictures (64 panels in total) with high visual impact covering all bioeconomy sectors. The BioArt gallery is a powerful tool to attract interest, raise awareness, inspire and stimulate the curiosity and discussion.
- **Target group(s):** Elementary and middle school students (6-13 years old), High school students (14-19 years old), policy makers, teachers, multipliers (and general citizens)
- **GenB partner(s):** APRE

- **Collaboration partner(s):** -
- **Context:** APRE has exhibited the Italian BioArt Gallery: **a)** in the I.C. Guicciardini School for one month (May 2023). The exhibition was available for teachers, students, parents and grandparents. At least 700 people were able to interact with the BioArt Gallery. **b)** during the I.C. Guicciardini School Festival of the Sustainability on 31 May 2023 (all day long) involving more than 500 people, including policy makers, teachers, parents, CSOs and students. The Festival was organised in the context of the ASviS Festival. **c)** during the Bioeconomy Day organised at the Confagricoltura premises in Rome on the 25 May 2023 (half day). Around 60 people attended, including policy makers, entrepreneurs, farmers and NGOs.
- **Form of the activity:** physical event.
- **Duration:** different durations depending on the format.
- **(Indicative/Tentative) timing:** Already exhibited in May 2023. The Italian BioArt Gallery will be displayed during the: **A)** next Bioeconomy Day events (2024-2025), initiatives in schools (2024-2025). **B)** TriesteNext, a large-scale event about scientific research targeting public at large; it is an annual event and in 2023 will be organised from 22 to 24 September.

#### **Task 2.1b: “Bioeconomy village” at large scale events and Task 2.1d “BioArt Gallery”**

- **Brief description of the activity:** The Bioeconomy Village is a collection of more than 350 different bio-based product samples in every day’s life application. This collection can be showcased at exhibitions and large-scale events, enabling visitors to experience, touch and feel the bioeconomy. The BioArt Gallery consists of 16 thematic compositions of maxi pictures (64 panels in total) with high visual impact covering all bioeconomy sectors. The BioArt gallery is a powerful tool to attract interest, raise awareness, inspire and stimulate the curiosity and discussion. Both the “Bioeconomy Village” and the “BioArt Gallery” have the aim of creating a curious and immersive experience for participants, allowing them to learn about the bioeconomy with fun.
- **Target groups:** Elementary and middle school students (6-13 years old), High school students (14-19 years old), teachers, multipliers (and general citizens)
- **GenB partner(s):** FVA
- **Collaboration partner(s):** APRE
- **Context:** FVA, with the support of APRE, will exhibit part of the Bioeconomy Village and BioArt Gallery at large scale events, in the context of Maker Faire (Rome) and EU Researchers’ Night (Frascati).
- **Form of the activity:** physical event
- **Duration:** **Maker Faire** - 3 days; **EU Researchers’ Night** - 2 days
- **(Indicative/Tentative) timing:** September and October 2023, 2024.

#### 6.2 Task T2.2 Inspire and inform students in bioeconomy careers

The following formats will be implemented within this Task:

- Task 2.2b: “TEDx pitches”

- Task 2.2c: “Bioeconomy careers infodays”
- Task 2.2d: “A Day in a biorefinery” study visit
- Task 2.2e: “Schools’ projects” to grow future entrepreneurs

#### **Task 2.2b: TEDx pitches**

- **Brief description of the activity:** TEDx Talks are a showcase for speakers presenting well-formed ideas in under 18 minutes. This format was proven to be effective in several previous experiences because it is based on the direct connection among peers (students). In particular, very young students are keener on learning from other students because they are perceived as inspirational examples, who are close to their age, experiences and who share the same values.
- **Target groups:** High school students (14-19 years old), families, teachers, multipliers (and general citizens)
- **GenB partner(s):** FVA
- **Collaboration partner(s):** APRE
- **Context:** FVA will explore the possibility of organising some TEDx pitches in the context of Maker Faire, and during Startupper School Academy. APRE will explore the possibility of organising some TEDx pitches during the EU Researchers’ Night in September 2023-2024 (Frascati).
- **Form of the activity:** physical event
- **Duration:** 15 minute pitch
- **(Indicative/Tentative) timing:** Maker Faire - October 2023, 2024; EU Researchers’ Night September 2023-2024; Startupper School Academy – academic year 2023/2024.

#### **Task 2.2c: “Bioeconomy careers infodays”**

- **Brief description of the activity:** The “Bioeconomy careers infoday” is an informative workshop involving experts working in the bioeconomy sectors; they will explain different career paths inspiring young people.
- **Target group(s):** High school students (14-19 years old), families, teachers, multipliers (and general citizens) and policy makers.
- **GenB partner(s):** APRE
- **Collaboration partner(s):** -
- **Context:** the first career infoday will be organised in the context of the large-scale event Ecomondo on 10 November 2023 that will be held in Rimini. Ecomondo - The Green Technology Expo - is the place for industry, stakeholders, policy makers, opinion leaders and local authorities to meet and talk. Additional infodays (max 2) will be organised in 2024 together with some University and High Schools during their orientation days.
- **Form of the activity:** physical event.
- **Duration:** half day.
- **(Indicative/Tentative) timing:** November 2023 and spring 2024.

#### **Task 2.2d: “A Day in a biorefinery” study visit**

- **Brief description of the activity:** The 'A Day in a biorefinery' is a site visit to a biorefinery during which an expert explains the bio-process and technology of the plant, the activities carried out and the expertise needed to work in the biorefinery.
- **Target group(s):** High school students (14-19 years old) and teachers.
- **GenB partner(s):** APRE.
- **Collaboration partner(s):** FVA.
- **Context:** The site visit will be organised with the High School classroom in which the Italian living lab has been organised.
- *Form of the activity:* physical event.
- **Duration:** Half Day.
- **(Indicative/Tentative) timing:** academic year 2023/2024.

**Task 2.2e: "Schools' projects" to grow future entrepreneurs**

- **Brief description of the activity:** "Schools' projects" will be implemented in Italy with the aim of growing future bioeconomy entrepreneurs.
- **Target groups:** Elementary and middle school students (6-13 years old), High school students (14-19 years old), teachers
- **GenB partner(s):** FVA
- **Collaboration partner(s):** APRE
- **Context:** FVA will organise the Startupper School Academy. It is a school competition recognized by the Italian Ministry of Education, organized for several years by Lazio Innova, the Lazio Region organisation responsible for boosting innovation in the region. To participate in the bioeconomy prize of the Startupper School Academy, small teams of high school students (up to 5) should present a business idea for a product or service dealing with the bioeconomy of bio-based products. The Startupper School Academy has different phases in which the students receive different types of mentoring and training, to transform their initial idea into a concrete business plan, to be presented in the form of a pitch to the jury.
- **Form of the activity:** physical event
- **Duration:** academic year
- **(Indicative/Tentative) timing:** academic year 2023/2024

6.3 Task T2.3 Educate young people to promote the biotransition

The following formats will be implemented within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: "Bioeconomy talks/ seminars" inquiry-based learning
- Task 2.3c: "Online bio educational village"

**Task 2.3a: Educational activity using the toolkits**

- **Brief description of the activity:** This activity is aimed to educate children and young people to promote the biotransition, through the activities collected and created in the GenB Project Toolkits.
- **Target groups:** Elementary and middle school students (6-13 years old), High school students (14-19 years old), teachers, multipliers
- **GenB partner(s):** FVA
- **Collaboration partner(s):** APRE
- **Context:** The context of this activity remains to be planned. A possible context for its deployment can be the Startupper School Academy and GECO for school.
- **Form of the activity:** Mainly online workshops
- **Duration:** 1-3 hours
- **(Indicative/Tentative) timing:** Startupper School Academy – academic year 2023/2024; GECO for school – January-April 2024.

**Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning**

- **Brief description of the activity:** This activity has been already implemented during Italian Living Labs. It will be detailed and reported in D2.2.
- **Target groups:** High school students (14-19 years old)
- **GenB partner(s):** FVA
- **Collaboration partner(s):**
- **Context:** Fermo Living Labs organised by FVA
- **Form of the activity:** physical event and online workshop
- **Duration:** 2 workshops
- **(Indicative/Tentative) timing:** 23 March 2023, 3 May 2023

**Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning**

- **Brief description of the activity:** Workshop inquiry-based learning to stimulate students’ reflection and debate
- **Target groups:** High school students (14-19 years old) and teachers.
- **GenB partner(s):** APRE.
- **Collaboration partner(s):** FVA.
- **Context:** On 10 May 2023 APRE has presented the bioeconomy, the educational materials, the experience of the living labs, the job profiles of the bioeconomy and last, but not least, the new GenB Ambassadors call during an event organised by CNR (Italian National Research Council) for the high school Scuola Luigi Sturzo di Castellammare di Stabia (Naples).
- **Form of the activity:** online workshop.
- **Duration:** 2 hours.
- **(Indicative/Tentative) timing:** 10 May 2023. Additional workshops will be planned during the academic year 2023/2024.

**Task 2.3c: “Online bio educational village”**



- **Brief description of the activity:** This activity has been already implemented during GECO for school. GenB provided several training materials reaching a total of 5000 students. It will be detailed and reported in D2.2.
- **Target group(s):** high school students and teachers
- **GenB partner(s):** FVA
- **Collaboration partner(s):** -
- **Context:** GECO for school, an online educational platform providing Italian secondary schools and students with educational modules related to sustainability.
- **Form of the activity:** online and final physical event
- **Duration:** GECO for school runs each year from October to April, covering the first semester of the school year.
- **(Indicative/Tentative) timing:** January-May 2023.

#### 6.4 Task T2.4 Educate teachers in teaching the bioeconomy

The following formats will be implemented by consortium partners within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

#### **Task 2.4a, 2.4b, 2.4c: Educating teachers in teaching “What’s bioeconomy” MOOC, “How to use GenB toolkits” and “Bioeconomy job profiles”**

- **Brief description of the activity:** These online capacity building workshops aim to equip teachers with the knowledge, resources, and skills they need to effectively teach their students about bioeconomy. By providing teachers with these resources, the workshops can help promote a better understanding of bioeconomy among young people and encourage them to pursue careers in this field. At the date of this deliverable, one capacity building in collaboration with ENI Scuola has been already implemented. It will be detailed and reported in D2.2.
- **Target groups:** Teachers
- **GenB partner(s):** FVA
- **Collaboration partner(s):** APRE
- **Context:** Capacity buildings will be organised in collaboration with ENI Scuola, and in the context of EU Researchers’ night and Startupper School Academy.
  - A capacity building in collaboration with ENI Scuola has been already implemented in November 2022. The activity was rewarded by the Italian Ministry of Education by adding it in the S.O.F.I.A. platform that provides certified credits to teachers.
  - As part of the EU Researchers’ night week, a capacity building for teachers will be organised.
  - In the context of the Startupper School Academy, an intense package of capacity building activities will be delivered both by Lazio Innova (mainly competences

related to entrepreneurial skills and practical skills about design and prototype development) and the bioeconomy partnership (information about bioeconomy and bio-based products, the applications in everyday fields, the impacts of bioeconomy in the economy, society and environment, the business and careers opportunities in the domain, etc.). The package aims at providing insightful contents, educational materials and inspirational case studies on the bioeconomy and bio-based products.

- **Form of the activity:** online and physical events
- **Duration:** 6 hours
- **(Indicative/Tentative) timing:** (APRE) ENI scuola – January/February 2024; (FVA) EU Researchers' Night - September 2023, 2024; (FVA) Startupper School Academy – academic year 2023/2024; (APRE) end of October 2023 - Engage4Bio (HORIZON EUROPE project) event for teachers in Sicily: presentation of the GenB toolkits for teachers.

#### 6.5 Task T2.5 Inform & educate other multipliers to promote the bioeconomy

The following formats will be implemented within this Task:

- Task 2.5a: Informative webinar in partners' countries
- Task 2.5b: individual meetings with 3 multipliers in each country

##### **Task 2.5a: Informative webinar in partners' countries**

- **Brief description of the activity:** online training courses to teach the bioeconomy to non-formal educators (such as museums, theatres, festivals, fairs, amusement parks, journalists, NGOs, science communicators, media producers, etc.) that work with young generations acting as multipliers by adopting the GenB toolkits as part of their activities.
- **Target group(s):** Multipliers.
- **GenB partner(s):** APRE
- **Collaboration partner(s):** -
- **Context:** **a)** The first webinar has been already organised to teach how to teach the bioeconomy, presenting the toolkit and other materials to the multipliers of the Genoa Science Festival. The Festival is one of the main international events for the spread of scientific culture. Scientists, researchers, popularizers, artists, authors, as well as institutions, associations, and companies, meet the public to make science touch, see and understand without boundaries, in an open comparison free from academic approaches. **b)** a webinar will be organised for ECSITE, the European network of science centres and museums. **c)** a webinar will be organised for the Biblioteche di Roma, the network of libraries of Rome.
- **Form of the activity:** online.
- **Duration:** 3 hours.
- **(Indicative/Tentative) timing:** **a)** The Festival is held in Genoa from October 26th to November 5th, 2023. **b) c)** planned in academic year 2023/2024.

##### **Task 2.5b: individual meetings with 3 multipliers in each country**

- **Brief description of the activity:** Individual meetings intended to engage and support non-formal educators (such as museums, theatres, festivals, fairs, amusement parks, journalists, NGOs, science communicators, media producers, etc.) that work with young generations to act as multipliers by adopting the GenB toolkits as part of their activities. At the date of this deliverable, one individual meeting has been already implemented. It will be detailed and reported in D2.2.
- **Target groups:** Multipliers
- **GenB partner(s):** FVA and APRE
- **Collaboration partner(s):**
- **Context:** FVA will engage selected multipliers with the objective of replicating project's outcomes and results and increasing the project impact. APRE will engage WWF Italia, Nuova Verde Ambiente (<https://verdiambientesocieta.eu/la-nostra-rivista/>) and Planetario e Museo Astronomico di Roma.
- **Form of the activity:** online or physical meetings.
- **Duration:** 60 minutes
- **(Indicative/Tentative) timing:** March 2023 to February 2025. On 1 March 2023, FVA organized a first individual meeting with BioEco Academy Grand Est (France), to present replicable formats in their context and discuss possible capacity building/webinars for the team.

## 7 Planned WP2 activities – Netherlands

### 7.1 Task T2.1 Inspire and inform young people on bioeconomy

The following formats will be implemented within this Task:

- Task 2.1a: “Hands-on labs” and playful activities in each country
- Task 2.1c: “Inside the bioeconomy” experimental exhibitions
- Task 2.1d: “BioArt Gallery”

#### Task 2.1a: Conducting hands-on labs

- **Brief description:** BTG will try to engage schools as well as participate in different events related to the bioeconomy and conduct experiments with the children and young adults depending on their ages. Experiments will be selected from those developed in Transition2BIO and/or from other sources. The exact activities will be decided depending on the age group and context.
- **Target groups:** 4-18 years old (y.o.)
- **GenB partner:** BTG
- **Collaboration partner:** -
- **Context:** The activities will be conducted either in collaboration with schools as well as events related to the bioeconomy.
- **Form of the activity:** physical event
- **Duration:** 1-2 hours depending on the context
- **(Tentative) timing:** Between January 2024 and December 2024

#### Task 2.1c: “Inside the bioeconomy” experimental exhibitions

- **Brief description of the activity:** this is an experiential exhibition which aims to immerse children and young people in the interesting world of Bioeconomy. The aim is to increase the knowledge of children and young people about bio-based materials, innovative applications, and processes. The exhibition can make use of materials developed in other sub-tasks of T2.1 (the bio-based experiments for kids, the showcase of bio-based products, or the BioArt Gallery roll-ups).
- **Target group(s):** Primary school (4-12 y.o) and secondary school (13-18 y.o.)
- **GenB partner(s):** BTG
- **Collaboration partner(s):**
- **Context:** The aim is to implement the exhibition, and to inject bioeconomy, in a public space (such as science centre/exhibition, library, city hall, community centre, etc.), other than a school or a large-scale event.
- **Form of the activity:** physical event.

- **Duration: to be decided (will depend on the actual context)**
- **(Indicative/Tentative) timing:** Between January 2024 and December 2024

#### **Task 2.1d: BioArt Gallery**

- **Brief description:** The “BioArt Gallery” will feature selected roll-ups and banners related to the bioeconomy (developed in e.g. the BLOOM, Biovoices or Transition2BIO projects) translated into Dutch, complemented with an exhibition of selected bio-based products (available from the same projects e.g. the Transition2BIO box or the BLOOM Bioeconomy Suitcase). Depending on the context, the online version of the BioArt Gallery will also be made available to the audience (in English).
- **Target groups:** Children between 9 and 18 years old, their teachers and families
- **GenB partner:** BTG
- **Collaboration partner:**
- **Context:** The BioArt Gallery” exhibit will be put on display at a collaborating school, where possible or/and bioeconomy related events in The Netherlands
- **Form of the activity:** physical event
- **Duration:** 2-3 hours (guided) and possibly for a longer duration as a stand-alone exhibition
- **(Tentative) timing:** Between January 2024 and December 2024

#### 7.2 Task T2.2 Inspire and inform students in bioeconomy careers

The following formats will be implemented within this Task:

#### **Task 2.2d: “A Day in a biorefinery” study visit**

- **Brief description of the activity:** a site visit to a biorefinery and research labs to experience a day as researcher or other professional in the bioeconomy. During the site visit an expert explains the bioprocess and technology of the plant, the activities carried out and the expertise needed to work in the biorefinery.
- **Target group(s):** High school students (13-18 years old) and their teachers.
- **GenB partner(s):** BTG
- **Collaboration partner(s):** -
- **Context:** Pupils from one or more school classes can participate. It will be considered to also invite the winners of one of the GenB competitions (see D3.1) and/or GenB Ambassadors.
- **Form of the activity:** physical event.
- **Duration:** Half-to-full day (including travel time)
- **(Indicative/Tentative) timing:** academic year 2023/2024.

### 7.3 Task T2.3 Educate young people to promote the biotransition

The following formats will be implemented within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning

#### **Task 2.3a: Educational activity using the toolkits**

- **Brief description:** educational activities using the contents of the toolkits (especially the book, games, quizzes) will be implemented depending on the context and audience e.g. if the activities are implemented in the framework of an event on a specific bio-economy related topic, then the contents from the toolkits on this topic will be selected and implemented.
- **Target groups:** (Early) primary school students (4-8 years old)
- **GenB partner:** BTG
- **Collaboration partner:** -
- **Context:** The activities will be conducted either in collaboration with schools as well as events related to the bioeconomy.
- **Form of the activity:** physical event
- **Duration:** ca. 1 hour
- **(Tentative) timing:** Between January 2024 and December 2024

#### **Task 2.3b: “Bioeconomy talks/seminars” inquiry-based learning**

- **Brief description:** “Bioeconomy talks/seminars inquiry-based learning” will involve discussions between high school students (13-18 y.o.), their teachers and bioeconomy experts on selected topics. The experts will share their expertise and experiences on the selected topics and the audience will be given a chance to ask questions and take part in resulting discussions.
- **Target groups:** High school students (13-18 years old) and teachers
- **GenB partner:** BTG
- **Collaboration partner:** -
- **Context:** The activities will be conducted either in collaboration with schools as well as events related to the bioeconomy.
- **Form of the activity:** physical event
- **Duration:** 1-2 hours
- **(Tentative) timing:** Between January 2024 and December 2024

### 7.4 Task T2.4 Educate teachers in teaching the bioeconomy

The following formats will be implemented within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

**For all three formats:**

- **Brief description:** A MOOC, intended for all target ages’ teachers, will be developed based on the toolkits developed within the GenB project and on materials available from other projects (BLOOM, Transition2Bio, EC Knowledge Centre for the Bioeconomy) compliant to the Seven Step Eco-Schools methodology. The MOOC is aimed at training teachers on how to introduce the topic of bioeconomy in their classrooms, how to utilize existing teaching materials and newly developed GenB toolkits, as well as to learn about and how to teach about different jobs and potential careers in the field of bioeconomy. The MOOC will be organised by EUN. BTG will support this activity by disseminating it widely in Netherlands with the aim of engaging Dutch teachers and hence Dutch students indirectly. Furthermore, where needed, selected modules may be translated into Dutch.
- **Target groups:** Teachers
- **GenB partner:** BTG
- **Collaboration partner:**
- **Context:** MOOC, online webinars
- **Form of the activity:** online webinar/workshop
- **Duration:** ca. 1 hour per workshop
- **(Tentative) timing:** from September 2024 until February 2025

## 7.5 Task T2.5 Inform & educate other multipliers to promote the bioeconomy

As described elsewhere in this Implementation Plan, the following formats will be implemented by consortium partners within this Task:

- Task 2.5a: Informative webinar in partners’ countries
- Task 2.5b: individual meetings with 3 multipliers in each country

**Task 2.5a: Informative webinars in partner countries**

- **Brief description of the activity:** the webinar aims to build capacities outside the GenB project consortium, by training and empowering people who can act as multipliers (e.g., reps of museums, theatres, festivals, fairs, summer camps, etc.). They will be encouraged to adopt GenB outcomes, including the toolkit, as part of their activities. To this end, the webinar will provide information on content related to the Bioeconomy and to the GenB Project.



- **Target groups:** Multipliers (non-formal educators)
- **GenB partner:** BTG
- **Collaboration partner:** -
- **Context:** The webinar will be implemented online, either stand-alone or as part of another bioeconomy-related event. BTG will invite people who can act as multipliers to participate.
- **Form of the activity:** Online
- **Duration:** 1-2 hours
- **(Tentative) timing:** from March 2024 until February 2025

**Task 2.5b: Individual meetings with three multipliers in each country**

- **Brief description of the activity:** BTG will organize individual meetings with, at least, three multipliers, with the objective of increasing the project impact. These meetings are intended to increase the commitment and facilitate the participation of the multipliers in future activities and project work packages. Therefore, activities and materials developed in the framework of the project will be reported and presented to the multipliers at these meetings.
- **Target groups:** Multipliers (non-formal educators)
- **GenB partner:** BTG
- **Collaboration partner:** -
- **Context:** These meetings will be held either online or in person depending on the needs of the selected multipliers
- **Form of the activity:** online or physical event
- **Duration:** 45-60 minutes
- **(Tentative) timing:** from March 2024 until February 2025

## 8 Planned WP2 activities – Portugal

### 8.1 Task T2.1 Inspire and inform young people on bioeconomy

The following formats will be implemented within this Task:

- Task 2.1a: “Hands-on labs” and playful activities in each country
- Task 2.1b: “Bioeconomy village” at large scale events
- Task 2.1d: “BioArt Gallery”

#### **Task 2.1a: “Hands-on labs” and playful activities in each country**

- **Type of the activity:** Conducting “Hands-on” labs (T2.1a).
- **Brief description:** LOBA will conduct a range of playful activities and “Hands-on” labs in order to engage young minds in the fascinating world of bioeconomy. The experimental activities will be based on Transition2BIO experience (e.g., [Experiments at home and at school](#)). Through these labs, students will have the opportunity to explore the practical aspects of bioeconomy experiments in a fun and engaging manner as well as to learn how to create biomaterials.
- **Target groups:** pre-primary and primary education students (4-13 years old)
- **GenB partner:** LOBA
- **Collaboration partner:** N/A
- **Context:** The activities will be conducted in the context of a major events LOBA has been successfully collaborating with in the past: Planetiers World Gathering, the biggest international event for sustainable innovation in Portugal which brings together social and environmental impact projects, communities and cities, and the world’s most inspiring change agents.
- **Form of the activity:** physical event
- **Duration:** ca. 2 days
- **(Tentative) timing:** October 2023 and 2024 edition. On 28 March 2023, LOBA already performed a Hands-on lab with kids 8-9 y.o. from vulnerable groups, producing natural colours with cabbage and seed bombs with compost, in the context of the 2023 Portuguese National Consumer Meeting “Circular products and sustainable consumption” held in Gaia (in combination with the Bioeconomy village, see below).

#### **Task 2.1b “Bioeconomy village” at large scale events & Task 2.1d: “BioArt Gallery”**

- **Type of the activity:** “Bioeconomy Village” & “BioArt Gallery”
- **Brief description:** The “Bioeconomy Village” and the “BioArt Gallery” will be designed to create a fun and immersive experience for participants, allowing them to learn about the bioeconomy through a variety of exhibits and of a collection of roll-up banners. It will also feature interactive exhibits that showcase the latest innovations in the field of bioeconomy, such as biodegradable packaging or bio-based textiles. The goal will be to

educate students and teachers about the principles of bioeconomy, the potential of bio-based products and materials, and the importance of sustainability. The two formats will complement the “Hands-on” lab format creating an engaging and green “corner” attracting students and families with practical and informative activities.

- **Target groups:** Elementary school students (9-13 years old), High school students (14-19 years old) and their teachers
- **GenB partner:** LOBA
- **Collaboration partner:** -
- **Context:** The activities will be conducted in the context of a major events LOBA has been successfully collaborating with in the past: Planetiers World Gathering, the biggest international event for sustainable innovation in Portugal which brings together social and environmental impact projects, communities and cities, and the world’s most inspiring change agents.
- **Form of the activity:** physical event
- **Duration:** ca. 2 days
- **(Tentative) timing:** October 2023 and 2024 edition. On 28 March 2023, LOBA already performed a Bioeconomy village (2.1b), exposing bio-based products samples in the context of the 2023 Portuguese National Consumer Meeting "Circular products and sustainable consumption" held in Gaia (in combination with the Hands-on labs, see above).

### 1.1 Task T2.3 Educate young people to promote the biotransition

The following formats will be implemented within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning

#### **Task 2.3a: Educational activity using the toolkits**

- **Brief description:** educational activities using the contents of the toolkits (especially the book, games, quizzes) will be implemented depending on the context and audience e.g. if the activities are implemented in the framework of an event on a specific bio-economy related topic, then the contents from the toolkits on this topic will be selected and implemented.
- **Target groups:** (Early) primary school students (4-8 years old)
- **GenB partner:** LOBA
- **Collaboration partner:** -
- **Context:** The activities will be conducted either in collaboration with organisations as well as events related to the bioeconomy. An example is integrating T2.3a activities with local activities for young students and families implemented by Fábrica Centro Ciência

Viva de Aveiro of the University of Aveiro. The envisaged activities may range from “The kitchen is a laboratory” to “Escape room”.

- **Form of the activity:** physical event
- **Duration:** ca. 1 hour
- **(Tentative) timing:** Between January 2024 and December 2024

#### **Task 2.3b: “Bioeconomy talks/seminars” inquiry-based learning**

- **Brief description:** “Bioeconomy talks/seminars inquiry-based learning” will involve discussions between high school students (13-18 y.o.), their teachers and bioeconomy experts on selected topics. The experts will share their expertise and experiences on the selected topics and the audience will be given a chance to ask questions and take part in resulting discussions.
- **Target groups:** High school students (13-18 years old) and teachers
- **GenB partner:** LOBA
- **Collaboration partner:** -
- **Context:** The activities will be conducted either in collaboration with schools as well as events related to the bioeconomy. An example is integrating T2.3b activities with local activities for young students and families implemented by Fábrica Centro Ciência Viva de Aveiro of the University of Aveiro. The envisaged activities may range from “The kitchen is a laboratory” to “Escape room”
- **Form of the activity:** physical event
- **Duration:** 1-2 hours
- **(Tentative) timing:** Between January 2024 and December 2024

#### 8.2 Task T2.4 Educate teachers in teaching the bioeconomy

The following formats will be implemented within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

#### **For all three formats:**

- **Brief description:** A MOOC, intended for all target ages’ teachers, will be developed based on the toolkits developed within the GenB project and on materials available from other projects (BLOOM, Transition2Bio, EC Knowledge Centre for the Bioeconomy) compliant to the Seven Step Eco-Schools methodology. The MOOC is aimed at training teachers on how to introduce the topic of bioeconomy in their classrooms, how to utilize existing teaching materials and newly developed GenB toolkits, as well as to learn about and how to teach about different jobs and potential careers in the field of bioeconomy.

The MOOC will be organised by EUN. LOBA will support this activity by disseminating it widely in Portugal with the aim of engaging Portuguese teachers and hence Portuguese students indirectly.

LOBA will work to find synergies and complementarities with local activities for teachers and students implemented by <https://www.ua.pt/pt/fabrica/>the University of Aveiro.

- **Target groups:** Teachers
- **GenB partner:** LOBA
- **Collaboration partner:**
- **Context:** MOOC, online webinars
- **Form of the activity:** online webinar/workshop
- **Duration:** ca. 1 hour per workshop
- **(Tentative) timing:** from September 2024 until February 2025

### 8.3 Task T2.5 Inform & educate other multipliers to promote the bioeconomy

The following formats will be implemented within this Task:

- Task 2.5a: Informative webinar in partners' countries
- Task 2.5b: individual meetings with 3 multipliers in each country

#### **Task 2.5a: Informative webinar in partners' countries**

- **Brief description of the activity:** GenB materials mapped in WP1 as well information and materials available in GenB Toolkits will be integrated in local activities for young students and families implemented by *Fábrica Centro Ciência Viva de Aveiro* of the University of Aveiro. The envisaged activities may range from "The kitchen is a laboratory" to "Escape room".
- **Target group(s):** multipliers (teachers, non-formal education professionals)
- **GenB partner(s):** LOBA
- **Collaboration partner(s):** -
- **Context:** joint activities performed in collaboration with *Fábrica Centro Ciência Viva de Aveiro*
- **Form of the activity:** *sessions integrating GenB toolkits and materials to the already scheduled activities (labs, games, informative sessions, etc.) for families and young students of Fábrica.*
- **Duration:** ca. 2 hours.
- **(Indicative/Tentative) timing:** *September, October 2024*

## 9 Planned WP2 activities – Slovakia

### 9.1 Task T2.1 Inspire and inform young people on bioeconomy

The following formats will be implemented within this Task:

- Task 2.1a: “Hands-on labs” and playful activities in each country
- Task 2.1b: “Bioeconomy village” at large scale events
- Task 2.1d: “BioArt Gallery”

#### **Task 2.1a: “Hands-on labs” and playful activities, Task 2.1b: “Bioeconomy village”, and Task 2.1d: “BioArt Gallery” during living labs**

- **Brief description of the activity:** Experiments carried out with primary and elementary school students during the first workshops of the GenB living lab, organized with 2 age groups
- **Target group(s):** 2 age groups – primary and elementary school students
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** local partners, namely the Leisure Centre at Gessayova in Petržalka (Bratislava), Primary school at Budatínska in Bratislava and Primary school in Devinska Nova Ves (Bratislava)
- **Context:** in total 4 workshops carried out, focused on providing introduction to bioeconomy to participants. The experiments were combined with an interactive presentation, brainstorming activities, Bioeconomy Village and BioArt gallery
- **Form of the activity:** physical
- **Duration:** 45 – 60 minutes
- **Timing:** 4 labs implemented in April – May 2023

#### **Task 2.1a: “Hands-on labs” and playful activities, Task 2.1b: “Bioeconomy village”, and Task 2.1d: “BioArt Gallery” at an event organized by the Leisure Centre in Bratislava (Petržalka) at the occasion of the Earth Day**

- **Brief description of the activity:** Experiments carried out with pupils during the first workshops of the GenB living lab, organized with 2 age groups
- **Target group(s):** 2 age groups – primary and elementary
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** local partners, namely the Leisure Centre at Gessayova in Petržalka (Bratislava), Primary school at Budatínska in Bratislava and Primary school in Devinska Nova Ves (Bratislava)
- **Context:** in total 4 workshops carried out during the first workshop, focused on providing introduction to bioeconomy to participants. The experiments were combined

**Commentato [JV2]:** All sections of this chapter to be completed by PEDAL,, as per the Guidelines in Chapter 2.

**Commentato [j.3R2]:** John, we use the Bioeconomy Village also in small scale event - can I indicate this task also in this case?  
See below

**Commentato [j.4R2]:** And question 2: In case we combine these formats - should I describe the same event 3 times - for each task separately?  
Or is it possible to indicate in the title that we combine the formats in 1 event?

with an interactive presentation, brainstorming activities, Bioeconomy Village and BioArt gallery

- **Form of the activity:** physical
- **Duration:** 45 – 60 minutes
- **Timing:** 25 April 2023

**Task 2.1a: “Hands-on labs” and playful activities, Task 2.1b: “Bioeconomy village”, and Task 2.1d: “BioArt Gallery” at the Primary school at Budatínska**

- **Brief description of the activity:** Experiments to be carried out with pupils in collaboration with the Leisure centre and the Primary school teachers, adjusted to the topics taught in selected subjects
- **Target group(s):** primary (grade 1)
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** local partners, namely the Leisure Centre at Gessayova in Petržalka (Bratislava), Primary school at Budatínska in Bratislava
- **Context:** following the good experience with the living lab workshops, continuation with the format was discussed with teachers of the age group. Adjusting the topic of the labs/workshops has been discussed according to the needs of teachers of specific subjects. The school organizes its markets, which is also seen as a good opportunity to combine the after-school activities and the labs/workshops.
- **Form of the activity:** physical
- **Duration:** 45 – 60 minutes, depending on the duration of the entire workshop
- **(Indicative/Tentative) timing:** October - December 2023 / January – May 2024

**Task 2.1b: “Bioeconomy village” and Task 2.1d: “BioArt Gallery” at the workshop “Better environment - How to achieve it?” organized by the Žilina Self-governing region**

- **Brief description of the activity:** Presentation, providing an introduction to Bioeconomy, with Bioeconomy Village and BioArt gallery were used to illustrate how bioeconomy can look in reality.
- **Target group(s):** high school students (15-19 y.o.) and their teachers
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** Žilina Self-governing region, Regional Development Dept.
- **Context:** The aim of the workshop was to inspire and provide support to young people to act and start initiatives addressing the climate change issue. Benefits of bioeconomy and inspiring examples of school/students' initiatives were presented.
- **Form of the activity:** physical
- **Duration:** 20 minutes
- **Timing:** 28 March 2023

**Task 2.1b: “Bioeconomy village” at Circular Summit in Slovakia**

- **Brief description of the activity:** Bioeconomy Village presented at the Circular Summit in Bratislava
- **Target group(s):** representatives of business community, academia, public sector, civil society
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** Circular Slovakia
- **Context:** exhibition of materials and products in combination with BioArt Gallery will be presented during the event to increase the engagement of participants. Members of the Circular Slovakia platform will be asked to provide samples.
- **Form of the activity:** physical
- **Duration:** 1 day event
- **(Indicative/Tentative) timing:** Spring, 2024

**Task 2.1b: “Bioeconomy village” and Task 2.1d: “BioArt Gallery” at Agrokomplex, an International Exhibition in Slovakia**

- **Brief description of the activity:** Bioeconomy Village presented at the GenB booth at the international exhibition Agrokomplex in Nitra
- **Target group(s):** representatives of business community, academia, public sector
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** TBC
- **Context:** Bioeconomy Village and BioArt Gallery will be presented at the Genb booth at the international agricultural and food exhibition Agrokomplex. Agrokomplex offers a varied programme, including presentation of new trends and innovations from the field of agriculture and food, but also a rich accompanying programme for professionals and the general public.
- **Form of the activity:** physical
- **Duration:** 4-day event
- **(Indicative/Tentative) timing:** August 2024

9.2 Task T2.2 Inspire and inform students in bioeconomy careers

The following formats will be implemented within this Task:

- Task 2.2b: “TEDx pitches”
- Task 2.2c: “Bioeconomy careers infodays”

**Task 2.2b: “TEDx pitches”**



- **Brief description of the activity:** Presentations of young people implementing own projects in the field or related to bioeconomy in the form of TEDx pitches. The aim is to inspire and motivate young people in Slovakia to start their own initiatives.
- **Target group(s):** high-school students, general public
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** TBC – organizer of the event. National or local partners, such as the Slovak University of Agriculture, VET schools or regional authorities
- **Context:** TBC, we plan to organize the event within the frame or as a side event of a bigger scientific event or an event targeting youth and the topic of sustainability.
- **Form of the activity:** physical
- **Duration:** 2-3 hours
- **(Indicative/Tentative) timing:** end of schoolyear 2023/2024

**Task 2.2c: “Bioeconomy careers infodays”**

- **Brief description of the activity:** Event involving researchers and professionals as testimonials. The aim of the event is to attract young people to professions in bioeconomy.
- **Target group(s):** elementary and high-school students
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** TBC, institutions to be contacted: Slovak University of Agriculture, Slovak Academy of Sciences, professionals in cultural and creative industries
- **Context:** not specified at this moment, will be defined based on the discussions with schools and potential collaborators
- **Form of the activity:** Physical
- **Duration:** 2-3 hours
- **(Indicative/Tentative) timing:** Spring 2024, Autumn 2024

9.3 Task T2.3 Educate young people to promote the biotransition

The following formats will be implemented within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning

**Task 2.3a: Educational activity using the toolkits**

- **Brief description of the activity:** Workshops with school classes as continuation of living lab workshops with 3 schools in Bratislava. Cooperation with additional teachers and classes from these schools, introducing bioeconomy in different subjects, using the toolkits and other materials, activities in the classes.
- **Target group(s):** primary, elementary, high school

- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** Leisure centre Gessayova 6, Bratislava; Primary school at Budatinska, Bratislava; I. Bukovčan elementary school, Bratislava; High school at Bullova, Bratislava
- **Context:** Complementary activity to school activities (continuation of living labs)
- **Form of the activity:** Physical
- **Duration:** 2-4 hours per class
- **(Indicative/Tentative) timing:** To be confirmed based on the availability of the toolkits, expected: schoolyear 2024-2025, specific times to be confirmed, 1 activity per month

#### **Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning**

- **Brief description of the activity:** Trips with classes to specific places, where young people can meet bioeconomy professionals, such as VET schools, where practical education is provided, agricultural or forestry companies, or industrial facilities (e.g. composting facilities), where students can discuss and learn with professionals from the sector
- **Target group(s):** primary, elementary, high school
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** TBC, potential partners include University of Agriculture in Nitra, VET School Ivanka pri Dunaji, Composting facilities,
- **Context:** Complementary activity to school activities (continuation of living labs)
- **Form of the activity:** Physical
- **Duration:** 1 half day per trip
- **(Indicative/Tentative) timing:** Schoolyear 2023-2024, specific times to be confirmed, 1 activity per month

#### 9.4 Task T2.4 Educate teachers in teaching the bioeconomy

The following formats will be implemented by PEDAL within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

#### **Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”**

- **Brief description of the activity:** Interactive seminar aimed at providing introduction to bioeconomy to teachers and training the teachers to use the toolkits. Introduction to bioeconomy will be provided, with specific examples of how bioeconomy can be included in different subjects.

- **Target group(s):** Teachers of primary, elementary and high-school students participating in the living labs
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** TBC
- **Context:** Seminar organized for teachers involved in other GenB activities.
- **Form of the activity:** Virtual/ Physical
- **Duration:** 2 – 4 hours
- **(Indicative/Tentative) timing:** To be confirmed based on the availability of the toolkits

**Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC, Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”, Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”**

- **Brief description of the activity:** Webinar combining the 3 tasks to empower teachers to teach bioeconomy in their classes. Introduction to bioeconomy will be provided, with specific examples of how bioeconomy can be included in different subjects. Combination with extra-curricular activities to consolidate the curriculum taught in lessons will be promoted.
- **Target group(s):** Teachers of primary, elementary, and high-school students
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** TBC
- **Context:** Webinars organized for teachers involved in other GenB activities.
- **Form of the activity:** Virtual/ Physical
- **Duration:** 2 – 4 hours
- **(Indicative/Tentative) timing:** To be confirmed based on the availability of the toolkits and MOOC

## 9.5 Task T2.5 Inform & educate other multipliers to promote the bioeconomy

The following formats will be implemented within this Task:

- Task 2.5a: Informative webinar in partners' countries
- Task 2.5b: individual meetings with 3 multipliers in each country

### Task 2.5a: Informative webinar in partners' countries,

- **Brief description of the activity:** Interactive webinar aimed at introducing multipliers into the topic of bioeconomy for different types of multipliers. Good practices from Slovakia and other countries will be presented to inspire participants.
- **Target group(s):** multipliers
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** TBC
- **Context:** -
- **Form of the activity:** online
- **Duration:** ~ 3 hours
- **(Indicative/Tentative) timing:** expected in Spring 2024

### Task 2.5b: individual meetings with 3 multipliers in each country

- **Brief description of the activity:** Meetings with at least 3 multipliers in the Bratislava and Žilina region interested in the topic of bioeconomy and (co-)organizing at least one event in collaboration with GenB. The activity has already started in the end of 2022, when a meeting and collaboration with a leisure centre was initiated and several activities were implemented.
- **Target group(s):** Leisure centre in Bratislava, other multipliers to be confirmed
- **GenB partner(s):** PEDAL
- **Collaboration partner(s):** Development agency of the Zilina region; Leisure centre Gessayova, Bratislava
- **Context:** Meetings organized with pre-selected multipliers aiming to understand their needs and possibilities to organize own activities focusing on or related to the topic of bioeconomy
- **Form of the activity:** Physical
- **Duration:** up to 2 hours
- **(Indicative/Tentative) timing:** December 2022 – December 2023

## 10 Planned WP2 activities – Spain

### 10.1 Task T2.1 Inspire and inform young people on bioeconomy

The following formats will be implemented within this Task:

- Task 2.1a: “Hands-on labs” and playful activities in each country
- Task 2.1c: “Inside the bioeconomy” experimental exhibitions
- Task 2.1d: “BioArt Gallery”

#### **Task 2.1a: “Hands-on” labs**

- **Brief description of the activity:** the “hands-on” labs are an activity that builds on the potential of experiential and experimental learning for children to learn about Bioeconomy and develop skills and abilities related to this concept. Through experiments with homemade resources, children acquire learning that allows them to move towards more sustainable daily attitudes.
- **Target group(s):** children aged 5 to 8 years old, their students and families.
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** this activity will take place at AIJU's Toylab Experience, an international innovation centre for children that provides a space for the development of workshops and activities related to the Bioeconomy and sustainability.
- **Form of the activity:** physical event.
- **Duration:** 1-2 hours.
- **(Indicative/Tentative) timing:** from September 2023 until June 2024.

#### **Task 2.1c: “Inside the bioeconomy” experimental exhibitions**

- **Brief description of the activity:** this is an experiential exhibition which aims to immerse children and young people in the interesting world of Bioeconomy.
- **Target group(s):** pre/early students (4-8 y.o.), elementary students (9-13 y.o.), and secondary schools (14-19 y.o.), and multipliers.
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** AIJU will develop these experiential activities both in its Toylab facilities and in different collaborating educational centres.
- **Form of the activity:** physical event.
- **Duration:**
- **(Indicative/Tentative) timing:** from September 2023 until June 2024.

#### Task 2.1d: "BioArt Gallery"

- **Brief description of the activity:** the BioArt gallery consists of an exhibition of thematic compositions of large size pictures and roll-up banners related to the Bioeconomy sector, with an online version in an interactive digital form. This activity aims to promote interest in the Bioeconomy among children and adolescents and to raise social awareness of this issue. To achieve this goal, AIJU will select the large size images and roll-up banners that are likely to attract the most interest among children and will translate and print them to celebrate the exhibition.
- **Target group(s):** pre- and early-school (4-8 y.o.), Elementary school (9-13 y.o.) and Secondary schools (14-19 y.o.) students.
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** The BioArt Gallery will be exhibited in the AIJU's ToyLab experience. In addition, AIJU will contact collaborating educational centres to host the display and develop the activity with their students.
- **Form of the activity:** physical event.
- **Duration:** 1-2 hours (guided) and longer duration as a stand-alone exhibition.
- **(Indicative/Tentative) timing:** Between September 2023 and December 2024.

#### 10.2 Task T2.2 Inspire and inform students in bioeconomy careers

The following formats will be implemented within this Task:

- Task 2.2a: "Role-play game" on bioeconomy jobs in schools

#### Task 2.2a: "Role-play game" on bioeconomy jobs in schools

- **Brief description of the activity:** this activity consists of a role-playing game aimed at early childhood and pre-school students with the objective of facilitating their learning in Bioeconomy contents, specifically, in professions and jobs related to this sector.
- **Target group(s):** Early and pre-primary school students from 4 to 8 years old.
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** AIJU will implement the role-play game mainly in the facilities of its ToyLab Experience, where educational activities are developed with children. In addition, if necessary, this work will be complemented with the implementation of the game in collaborating schools.
- **Form of the activity:** physical event.
- **Duration:** 45-90 minutes.
- **(Indicative/Tentative) timing:** from September 2023 until June 2024.

### 10.3 Task T2.3 Educate young people to promote the biotransition

The following formats will be implemented within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning

#### **Task 2.3a: Educational activity using the Toolkits**

- **Brief description of the activity:** This activity will aim to promote learning about Bioeconomy content and foster children's social awareness of this aspect using the materials and resources of the GenB Toolkit.
- **Target group(s):** pre/early and elementary students and their teachers.
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** this activity will take place at AIJU's ToyLab Experience, where educational activities are developed with children. In addition, if necessary, this work will be complemented with the implementation of the activity in collaborating schools.
- **Form of the activity:** physical event.
- **Duration:** 1-2 hours.
- **(Indicative/Tentative) timing:** from April 2024 until February 2025

#### **Task 2.3b: “Bioeconomy talks/seminars” inquiry-based learning**

- **Brief description of the activity:** Bioeconomy talks/seminars” will be based on inquiry-based learning to encourage students to reflect on situations and contents related to the Bioeconomy, with the aim of introducing them to the concept and developing knowledge related to the subject. The model of talks or seminars between students and bioeconomy researchers will be followed.
- **Target group(s):** elementary (9-13 y.o.) and/or secondary school students (14-19 y.o.) and their teachers.
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** this activity will take place at AIJU's ToyLab Experience, where educational activities are developed with children. In addition, if necessary, this work will be complemented with the implementation of the activity in collaborating schools.
- **Form of the activity:** physical event.
- **Duration:** 1-2 hours.
- **(Indicative/Tentative) timing:** from April 2024 until February 2025.

#### 10.4 Task T2.4 Educate teachers in teaching the bioeconomy

The following formats will be implemented within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

**For all three formats:**

- **Brief description of the activity:** these activities are aimed at training and qualifying teachers to educate their students in Bioeconomy, using the materials and resources collected and created by the GenB Project.
- **Target group(s):** Teachers
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** AIJU will distribute the webinar among the principals of different collaborating schools, requesting them to share it with the whole teaching staff of the school. In this way, the expected number of teachers will be trained, as well as entire teaching staffs, so that schools can implement educational activities related to the Bioeconomy and use the resources of the GenB Project Toolkits.
- **Form of the activity:** online webinars/workshops.
- **Duration:** 1-2 hours.
- **(Indicative/Tentative) timing:** from April 2024 until February 2025.



## 10.5 Task T2.5 Inform & educate other multipliers to promote the bioeconomy

The following formats will be implemented within this Task:

- Task 2.5a: Informative webinar in partners' countries
- Task 2.5b: individual meetings with 3 multipliers in each country

### **Task 2.5a: Informative webinar in partners' countries**

- **Brief description of the activity:** this informative webinar aims to build capacities outside the Project consortium, by training and empowering people who can act as multipliers of the project. To this end, the webinar will provide information on content related to the Bioeconomy and the GenB Project.
- **Target group(s):** Multipliers.
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** the webinar will take place online, for which AIJU will contact people who can act as multipliers of the project, who will be invited to participate in the activity.
- **Form of the activity:** online webinar.
- **Duration:** 1-2 hours.
- **(Indicative/Tentative) timing:** from April 2024 until February 2025.

### **Task 2.5b: Individual meetings with 3 multipliers in each country**

- **Brief description of the activity:** AIJU will organize individual meetings with, at least, three multipliers, with the objective of increasing the project impact. These meetings are intended to increase the commitment and facilitate the participation of the multipliers in future activities and project work packages. Therefore, activities and materials developed in the framework of the project will be reported and presented to the multipliers at these meetings.
- **Target group(s):** Multipliers.
- **GenB partner(s):** AIJU
- **Collaboration partner(s):** -
- **Context:** These meetings will be held either online or in person depending on the needs of the selected multipliers
- **Form of the activity:** online or physical event.
- **Duration:** 45 – 60 minutes.
- **(Indicative/Tentative) timing:** from September 2023 until February 2025.

## 11 Planned WP2 activities – pan-European

### 11.1 Task T2.1 Inspire and inform young people on bioeconomy

The following formats will be implemented within this Task:

- Task 2.1a: “Hands-on labs” and playful activities in each country
- Task 2.1c: “Inside the bioeconomy” experimental exhibitions
- Task 2.1d: “BioArt Gallery”

#### Task 2.1a: “Hands-on labs” and playful activities in each country

- **Brief description of the activity:** EUN may conduct face-to-face and/or online workshops based on playful activities with teachers with an aim of training them on how to use such formats in their classrooms. Moreover, as EUN does not have a direct access to students, to ensure direct impact and inclusion of learners, a call for teachers may be opened and they would be instructed to these formats in the classroom and share their experience in a form of an Implementation story.
- **Target group(s):** Teachers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** Not determined at this time
- **Context:** The activity may be organised as a stand-alone online event or as a part of other events taking place at the [Future Classroom Lab \(FCL\)](#) at European Schoolnet
- **Form of the activity:** Not determined at this time
- **Duration:** Not determined at this time
- **(Indicative/Tentative) timing:** Not determined at this time

#### Task 2.1c: “Inside the bioeconomy” experimental exhibitions

- **Brief description of the activity:** At this moment EUN does not have a proposed format of the activity implementation. More information will be provided in the next version of the WP2 Implementation Plan.
- **Target group(s):** Teachers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** Not determined at this time
- **Context:** Not determined at this time
- **Form of the activity:** Not determined at this time
- **Duration:** Not determined at this time
- **(Indicative/Tentative) timing:** Not determined at this time

#### Task 2.1d: “BioArtGallery”

- **Brief description of the activity:** At this moment EUN does not have a proposed format of the activity implementation. More information will be provided in the next version of the WP2 Implementation Plan.
- **Target group(s):** Teachers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** Not determined at this time
- **Context:** Not determined at this time
- **Form of the activity:** Not determined at this time
- **Duration:** Not determined at this time
- **(Indicative/Tentative) timing:** Not determined at this time

#### 11.2 Task T2.2 Inspire and inform students in bioeconomy careers

The following formats will be implemented within this Task:

- Task 2.2a: “Role-play game” on bioeconomy jobs in schools
- Task 2.2b: “TEDx pitches”
- Task 2.2c: “Bioeconomy careers infodays”
- Task 2.2d: “A Day in a biorefinery” study visit

##### Task 2.2a: “Role-play game” on bioeconomy jobs in schools

- **Brief description of the activity:** At this moment EUN does not have a proposed format on how this activity will be implemented.
- **Target group(s):** Not determined at this time
- **GenB partner(s):** Not determined at this time
- **Collaboration partner(s):** -
- **Context:** Not determined at this time
- **Form of the activity:** Not determined at this time
- **Duration:** Not determined at this time
- **(Indicative/Tentative) timing:** Not determined at this time

##### Task 2.2b: “TEDx pitches”

- **Brief description of the activity:** “TEDx pitches” represent storytelling formats used to inform and inspire students and other multipliers on bioeconomy applications, risks and benefits. These formats would involve GenB ambassadors and their experience, as testimonials for the purpose of inspiring and inform teachers in bioeconomy careers. EUN may organize an event in which a GenB Ambassador will be informing international teachers about their efforts and engagement in promotion and transition towards circular and bioeconomy
- **Target group(s):** Teachers
- **GenB partner(s):** EUN

- **Collaboration partner(s):** Not determined at the moment.
- **Context:** This activity may be organised as a part of other face-to-face events that take place at EUN
- **Form of the activity:** Face-to-face
- **Duration:** Not determined at this time
- **(Indicative/Tentative) timing:** June 2023 to January 2025

Task 2.2c: “Bioeconomy careers infodays”

- **Brief description of the activity:** This activity may be performed online as Career Chats events with experts sharing their experience in the bioeconomy field with teachers and students. Different experts who will be interviewed for the Bioeconomy Factsheets, will be invited to take part in one-hour online events intended for secondary school students where they will have a chance to meet the experts working in the field and learn about career opportunities and possibilities in the field of Bioeconomy. As EUN does not have a direct access to students, teachers would be invited to join with their classes, and to ask questions about which skills, knowledge and personal traits are required to become an expert in Bioeconomy.
- **Target group(s):** Teachers with their classes
- **GenB partner(s):** EUN
- **Collaboration partner(s):** Not determined at the moment.
- **Context:** This activity will be organised in collaboration with bioeconomy experts, as a stand-alone online event coordinated by EUN.
- **Form of the activity:** Online
- **Duration:** 1 hour
- **(Indicative/Tentative) timing:** September 2023 to January 2025

Task 2.2d: “A Day in a biorefinery” study visit

- **Brief description of the activity:** As EUN does not have direct access to students and biorefineries, this activity may be organised as an online event such as an online Career Chat. In case an expert employed in such facility will have been interviewed as part of the production of the Bioeconomy Factsheets or Career Profiles, they may be invited to take part in a one-hour Online Career event with Bioeconomy experts. As EUN does not have a direct access to students, teachers would be invited to join with their classes. At that time the expert could present some parts of the facility and describe the work they perform there. If this will not be the case, EUN may organise the event of the same format, but inviting another expert working in the field.
- **Target group(s):** Teachers with their classes
- **GenB partner(s):** EUN
- **Collaboration partner(s):** Not determined at this time.
- **Context:** This activity will be organised in collaboration with bioeconomy experts, as a stand-alone online event coordinated by EUN.
- **Form of the activity:** Online

- **Duration:** 1 hour
- **(Indicative/Tentative) timing:** September 2023 to January 2025

### 11.3 Task T2.3 Educate young people to promote the biotransition

The following formats will be implemented within this Task:

- Task 2.3a: Educational activity using the toolkits
- Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning

#### Task 2.3a: Educational activity using the toolkits

- **Brief description of the activity:** A total of 3 hands-on workshops will be carried out, with one already carried out (April 2023) and another in the preparation phase. The workshops are focused on introducing teachers to the basic terms and concepts of bioeconomy, available resources and co-creational and collaborative activities on best ways to implement GenB materials and enrich their lessons. Through series of hands-on activities, from quizzes to adaptations of learning materials and development of bioeconomy related activities, during these workshops, teachers will gain understanding of bioeconomy and how they have been already including it into their lessons and obtain practical information and skills how to further include the topic into their teaching according to the age and needs of their students.
- **Target group(s):** Teachers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** none
- **Context:** Science Projects Workshop (SPW) in the Future Classroom Lab aim at both training teachers in the use of technologies in the classroom in association with materials and pedagogies from projects and encourage science projects to work together instead of in isolation. As part of the 40<sup>th</sup> Science Projects Workshop (SPW40) a group of international teachers will attend a GenB workshop using existing teaching materials featured in the GenB repository. The workshop is organised in collaboration.
- **Form of the activity:** physical
- **Duration:** 1.5h
- **(Indicative/Tentative) timing:** 17 June 2023

#### Task 2.3b: “Bioeconomy talks/ seminars” inquiry-based learning

- **Brief description of the activity:** Inquiry based learning (IBL) activities to stimulate reflection and debate on the topic. Inquiry based learning activities focus on asking questions and investigating real-world problems. In this type of learning environment, participants are actively engaged in the learning process and are given the opportunity to explore their natural curiosities.

- **Target group(s):** Teachers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** none
- **Context:** As a part of the 39<sup>th</sup> Science Project Workshop (SPW39) and the teacher trainings organized in the Future Classroom Lab and several groups of international EC, primary and secondary school teachers and teacher trainers attended inquiry-based learning seminars aimed at introducing teachers to the basic terms of bioeconomy.
- **Form of the activity:** physical
- **Duration:** 1 hour X 2
- **(Indicative/Tentative) timing:** 25 March 2023 and 17 April 2023

#### 11.4 Task T2.4 Educate teachers in teaching the bioeconomy

The following formats will be implemented within this Task:

- Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC
- Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”
- Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

##### Task 2.4a: Educating teachers in teaching “What’s bioeconomy” MOOC

- **Brief description of the activity:** A MOOC intended for all target ages’ teachers, will be developed based on the toolkits developed within the GenB project, as well as other available materials (BLOOM, Transio2Bio, EC Knowledge Centre for the Bioeconomy) compliant to [the Seven Step Eco-Schools methodology](#). The MOOC is aimed at training teachers on how to introduce the topic of bioeconomy in their classrooms, how to utilize existing teaching materials and newly developed GenB toolkits, as well as to learn about and how to teach about different jobs and potential careers in the field of bioeconomy. The MOOC will initially run on the EUN Academy Platform for a period up to 6 weeks, after which the materials will remain available at the platform. Moreover, upon finalisation of the MOOC, partners may translate the materials and host them on their available platforms and GenB website.
- **Target group(s):** Teachers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** All
- **Context:** MOOC will be developed in collaboration with Scientix, it will be hosted on the EUN Academy Platform and later translated by partners and distributed among partner platforms and GenB website.
- **Form of the activity:** Online
- **Duration:** 2 months
- **(Indicative/Tentative) timing:** September or November 2024

##### Task 2.4b: Educating teachers in teaching “How to use GenB toolkits”

Regarding this task EUN will provide further information during the upcoming versions of this deliverable.

#### Task 2.4c: Educating teachers in teaching “Bioeconomy job profiles”

- **Brief description of the activity:** “Bioeconomy job profiles” are teaching materials consisting of bioeconomy factsheets and interviews with bioeconomy experts, intended for high school (14-19 y.o.) teachers. These materials contain information and explanations of career and educational possibilities in the field of bioeconomy, featuring professionals that provide insights from the field to spread awareness, inspire and motivate high school learners to pursue a profession in bioeconomy. These profiles will be enriched with the recordings of the career chats with experts where teachers with their classes will have a chance to chat with the expert and obtain first-hand information about the daily lives of professionals working in different sectors of the field, the perks and challenges of the profession, and educational requirements in order to become an expert in the field.
- **Target group(s):** Experts, Teachers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** All partners
- **Context:** A set of 4 bioeconomy online job profiles consisting of bioeconomy factsheets, interviews with experts and recordings of the Online Career chats. These materials will be included in the MOOC. Professionals will be chosen in collaboration with the GenB partners. At the moment EUN is finalizing the template for the bioeconomy factsheets.
- **Form of the activity:** Documents and recordings
- **Duration:** -
- **(Indicative/Tentative) timing:** March 2023 - January 2025

#### 11.5 Task T2.5 Inform & educate other multipliers to promote the bioeconomy

The following formats will be implemented within this Task:

- Task 2.5a: Informative webinar in partners’ countries
- Task 2.5b: individual meetings with 3 multipliers in each country

#### Task 2.5a: Informative webinar in partners’ countries

- **Brief description of the activity:** Informational webinars to share information about bioeconomy, promotion on project results. The aim is to engage and support non-formal educators (such as museums, theatres, festivals, fairs, amusement parks, journalists, NGOs, science communicators, media producers, etc.) that work with young generations to act as multipliers by adopting the GenB toolkits as part of their activities.
- **Target group(s):** Teachers and multipliers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** -

- **Context:** As a part of various campaigns coordinated by EUN Informational webinars "How to embed bioeconomy in informal education settings" may be included in the planned program. Speakers of these events are still to be decided.
- **Form of the activity:** Online
- **Duration:** 1 hour
- **(Indicative/Tentative) timing:** September 2023- January 2025

Task 2.5b: individual meetings with 3 multipliers in each country

- **Brief description of the activity:** Individual meetings intended to successfully connect with particularly relevant stakeholders for the promotion of the project's results. The aim is to engage and support non-formal educators (such as museums, theatres, festivals, fairs, amusement parks, journalists, NGOs, science communicators, media producers, etc.) that work with young generations to act as multipliers by adopting the GenB toolkits as part of their activities.
- **Target group(s):** Teachers and multipliers
- **GenB partner(s):** EUN
- **Collaboration partner(s):** -
- **Context:** The implementation format has not yet been determined
- **Form of the activity:** Online
- **Duration:** 1 hour
- **(Indicative/Tentative) timing:** September 2023- January 2025



## 12 Conclusions

The present deliverable is a live document and will be updated every six months, according to the project progression and incoming opportunities during its development. BTG, as WP2 leader, will organise periodic meetings to discuss and elaborate on the formats still to be developed in due time with respect to the time plan.

## 13 Appendix 1: List of formats and format leaders

Table A.1: Formats, Key Performance Indicators / Target Groups and Format Leaders

#T	Activities (formats)	Format Leader
2.1a	#8 "Hands-on labs" and playful activities in each country (KPI: #400 in total, #8 countries, #50 young people involved in each country, TARGET GROUPS: pre/early, teachers and multipliers)	FVA
2.1b	#4 "Bioeconomy village" at large scale events (KPI: #40,000 in total, #4 countries, #10,000 young people involved in each country, TARGET GROUPS: (1) pre/early, (2) elementary, (3) high school)	PEDAL
2.1c	#4 "Inside the bioeconomy" experiential exhibitions (KPI: #4,000 in total, #4 countries, #1,000 young people involved in each country, TARGET GROUPS: (1) pre/early, (2) elementary, (3) high school, (4) multipliers)	BTG
2.1d	#8 "BioArtGallery" (in 8 languages) (KPI: #40,000 in total, #5,000 young people involved in each country, TARGET GROUPS: (1) elementary, (2) high school, (3) teachers, (4) multipliers)	PEDAL
2.2a	#3 "Role-play game" on bioeconomy jobs in schools (KPI: #150 in total, #3 countries, #50 young people involved in each country, TARGET: (1) pre/early and (2) teachers)	AIJU
2.2b	#3 "TEDx pitches" (KPI: #240 in total, #3 countries, #80 young people involved in each country, TARGET GROUPS: (1) elementary, (2) high school, (3) multipliers)	FVA
2.2c	#4 "Bioeconomy careers infodays" (KPI: #300 in total, #4 countries, #75 teenagers involved in each country, TARGET GROUP: (1) high school)	APRE
2.2d	#3 "A Day in a biorefinery" study visit (KPI: #100 in total, #3 countries, #34 teenagers involved in each country, TARGET GROUP: (1) high school)	BTG
2.2e	#1 "Schools' projects" to grow future entrepreneurs (KPI: #5,000 in total, # 1 country, #5,000 teenagers involved in Italy, TARGET: (1) high school and (2) teachers)	FVA
2.3a	#24 Educational activity using the toolkits (KPI: #720 in total, #8 countries, #90 young people involved in each country, TARGET GROUPS: (1) pre/early, (2) elementary, (3) high school, (4) teachers)	AIJU
2.3b	#8 "Bioeconomy talks/seminars" inquiry based learning (KPI: #400 in total, #8 countries, #50 young involved in each country, TARGET GROUPS: (1) high school, (2) teachers)	BTG
2.3c	#1 "Online bio educational village" in English (KPI: #5,000 young people in total, TARGET GROUPS: (1) elementary, (2) high school, (3) teachers)	BTG +FVA
2.4a	Educating teachers in teaching the bioeconomy	EUN
2.4b	#1 "What's bioeconomy" MOOC	EUN
2.4c	#3 "How to use GenB toolkits"	EUN
2.4c	#1 "Bioeconomy job profiles" on factsheets explanation TARGET GROUPS: (1) pre/early, (2) elementary, (3) high school, (4) teachers. KPI-1: #800 teachers, #8 countries, #100 teachers in each country. KPI-2: #12,000 young people, #1,500 in each country	
2.5a	#8 Informative webinar in partners' countries	PEDAL
2.5b	#24 individual meetings with 3 multipliers in each country TARGET GROUPS: (1) pre/early, (2) elementary, (3) high school, (4) multipliers. KPI-1: #80 multipliers, #8 countries, #10 multipliers in each country. KPI-2: #4,000 young people, #500 in each country	

## 14 Appendix 2: Distribution of activities (formats)

Table A2: Geographical distribution of activities (formats)

#T	Activities	AT	EL	IT	NL	PT	SK	ES	Pan-EU
2.1a	#8 "Hands-on labs" and playful activities	ZSI	QPL/HSPN	APRE/FVA	BTG	LOBA	PEDAL	AIJU	EUN
2.1b	#4 "Bioeconomy village" at large scale events	-	HSPN	APRE/FVA	-	LOBA	<b>PEDAL</b>	-	-
2.1c	#4 "Inside the bioeconomy" experim. exhibitions	-	-	-	<b>BTG</b>	LOBA	-	AIJU	EUN
2.1d	#8 "BioArtGallery"	ZSI	QPL/HSPN	APRE/FVA	BTG	LOBA	<b>PEDAL</b>	AIJU	EUN
2.2a	#3 "Role-play game" on bioeconomy jobs in schools	-	HSPN	-	-	-	-	<b>AIJU</b>	EUN
2.2b	#3 "TEDx pitches"	-	-	<b>FVA</b>	-	-	PEDAL	-	EUN
2.2c	#4 "Bioeconomy careers infodays"	-	QPL	<b>APRE</b>	-	-	PEDAL	-	EUN
2.2d	#3 "A Day in a biorefinery" study visit	-	-	APRE	<b>BTG</b>	-	-	-	EUN
2.2e	#1 "Schools' projects" to grow future entrepreneurs	-	-	APRE/FVA	-	-	-	-	-
2.3a	#24 Educational activity using the toolkits	ZSI	HSPN	APRE/FVA	BTG	LOBA	PEDAL	<b>AIJU</b>	EUN
2.3b	#8 "Bioeconomy talks/seminars" inquiry based learning	ZSI	HSPN	APRE/FVA	<b>BTG</b>	LOBA	PEDAL	AIJU	EUN
2.3c	#1 "Online bio educational village"	-	-	<b>FVA</b>	-	-	-	-	-
2.4a	Educating teachers in teaching the BE								
2.4b	#1 "What's bioeconomy" MOOC	ZSI	HSPN	APRE/FVA	BTG	LOBA	PEDAL	AIJU	<b>EUN</b>
2.4c	#3 "How to use GenB toolkits"	ZSI	HSPN	(3X)	BTG	LOBA	PEDAL	AIJU	<b>EUN</b>
	#1 "Bioeconomy job profiles" on factsheets explanation								
2.5a	#8 Inform. webinars	ZSI	QPL	APRE/FVA	BTG	LOBA	<b>PEDAL</b>	AIJU	EUN
2.5b	#24 individual meetings with 3 multipliers	ZSI	QPL	FVA (2X)	BTG	LOBA	<b>PEDAL</b>	AIJU	EUN

**NB1:** EUN through calls will ask for support to the teachers of its pan-European network. **NB2:** Target countries of some activities (formats) may vary depending on emerging opportunities.

# GEN

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