



D4.2

Impact monitoring and assessment report – First Period

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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
BIOBEC	H2020 project, GA No. 101023381, https://biobec.eu/
BIOBRIDGES	H2020 project, GA No. 792236, https://www.biobridges-project.eu/
BIOVOICES	H2020 project, GA No. 774331, https://www.biovoices.eu/
BIOWAYS	H2020 project, GA No. 720762, https://www.bioways.eu/
BLOOM	H2020 project, GA No. 773983, https://bloom-bioeconomy.eu/
D	Deliverable
DE	Germany
DoA	Document of Agreement
EL	Greece
EN	English
ES	Spain
EU	European Union
EUN	EUN Partnership AISBL
FR	French
FVA	FVA SAS DI LOUIS FERRINI & C
GR	Greek
HE	Horizon Europe
HSPN	HELLENIC SOCIETY FOR THE PROTECTION OF NATURE
ICBSD	International Conference on Bioeconomy and Sustainable Development
IT	Italy, Italian
KIP	Key Impact Pathways
KPI	Key Performance Indicator
LOBA	GLOBAZ, S.A.
M	Month
MOOC	Massive Open Online Course
NL	The Netherlands, Dutch
PEDAL	PEDAL CONSULTING SRO
PhD	Philosophie Doctor
PT	Portugal, Portuguese
Q-PLAN	Q-PLAN INTERNATIONAL ADVISORS PC
RPG	Role Play Game
SK	Slovakia
SL	Slovenian
SOLO	Structure of Observed Learning Outcomes
SOs	Specific Objectives
SP	Spanish
SSH	Social Sciences and Humanities

Abbreviation	Meaning
T	Task
TEDx	A specific type of TED conference
WP	Work Package
y.o	Years old

Index of Contents

1. Executive summary	13
2. Introduction	16
2.1. Background on the GenB project	16
2.2. WP4 Objectives	16
2.3. T4.1 Objectives	16
2.4. Scope and structure of the D4.2	16
3. Monitoring of the fulfilment of objectives.....	18
3.1. Self-check global table	18
3.2. Review of the KPIs status – First Period	18
4. Review of the Specific Objective 1	19
4.1. Task 1.1 Collection of bioeconomy awareness, information and education contents	19
4.2. Task 1.2 GenB resources Library	19
4.3. Task 1.3 Co-creation of the awareness, information and education innovative approaches.....	20
4.3.1. GenB Common Ground Camp	20
4.3.2. Focus Group	20
4.3.3. Living Labs	21
4.4. Task 1.4 Toolkits for young people, teachers and other multipliers.....	21
4.4.1. Scope of KPI analysis in Task 1.4	22
4.4.2. “What’s bioeconomy” book	23
4.4.3. Video teasers and educational videos.....	23
4.4.4. Game or gamified educational experience	24
4.4.5. Quizzes and Educational card for social media and training	25
4.4.6. Online factsheet “bioeconomy job profiles”	26
4.4.7. Educational and information packages for young people	27
4.4.8. Lesson plans and training contents for teachers	27
4.4.9 Toolkits for young people, teachers and other multipliers.....	29
4.4.10. Additional materials developed	29
4.5. Summary table of Specific Objectives 1	29
5. Review of the Specific Objective 2	30
5.1. Task 2.1 Inspire and inform young people on sustainable and circular bioeconomy and bio-based sectors	30

5.1.1. “Hands-on labs” and playful activities in partners’ countries.....	30
5.1.2. “Inside the bioeconomy” experiential exhibit in existing public spaces.....	31
5.1.3. Bioeconomy village	31
5.1.4. BioArt Gallery	32
5.2. Summary table of Specific Objective 2.....	32
6. Review of the Specific Objective 3	33
6.1. Task 2.2 Inspire and inform students in bioeconomy careers	33
6.1.1. “Role-play game” on bioeconomy jobs in schools	33
6.1.2. TEDx pitches	34
6.1.3. Bioeconomy careers infodays	34
6.1.4. “A day in a biorefinery” study visit.....	35
6.1.5. “Schools’ projects” to grow future entrepreneurs	35
6.2. Task 2.3 Educate young people to promote the biotransition	36
6.2.1. Educational activities using the toolkits.....	36
6.2.2. Bioeconomy talks/seminars inquiry-based learning.....	36
6.2.3. Online bio educational village.....	37
6.3. Task 2.4 Educate teachers in teaching bioeconomy	37
6.3.1. “What’s bioeconomy” MOOC, How to use GenB Toolkits, Bioeconomy Job Profiles	37
6.4. Task 2.5 Inform and educate other multipliers.....	38
6.4.1. Informative webinar in partners’ countries	38
6.4.2. Individual meetings with three multipliers in each partners’ country.....	39
6.5 Summary table of Specific Objectives 3	39
7. Review of the Specific Objective 4	41
7.1. Task 3.1 Engage GenB Ambassadors.....	41
7.1.1. Young multipliers engaged to play as frontrunners.....	41
7.1.2. Young career testimonials.....	42
7.1.3. Green sensitive young influencers and activist.....	42
7.1.4. Environmental young journalist engaged	42
7.1.5. “GenB in Action” recruitment campaign.....	43
7.2. Task 3.2 Empower GenB Ambassadors.....	43
7.2.1. Capacity building in partners’ countries	43
7.2.2. Social media profiles @Biovoices.....	44

7.2.3. Online mutual learning workshop.....	44
7.2.4. GenB Ambassadors hosted in 5 events.....	45
7.3. Task 3.3 Support the GenB Ambassadors to take a role.....	45
7.3.1. GenB International Competition.....	45
7.3.2. GenB Ambassadors engaged in promotional activities as “Students2Students” testimonials.....	45
7.3.3. Social media campaigns by green sensitive influencers.....	46
7.3.4. Young journalists publishing on GenB.....	46
7.4. Task 3.4 European Youth forum on bioeconomy.....	47
7.5. Summary table of Specific Objective 4.....	47
8. Review of the Specific Objective 5 and Specific Objective 6.....	49
8.1. Task 4.2 GenB education model and Task 4.3 Ministries of education policy recommendations.....	49
8.2. Task 5.2 Ecosystem Building.....	49
8.2.1. Projects and initiatives engaged in collaboration.....	49
8.2.2. Online mobilisation and mutual learning workshops in bioeconomy education.....	50
8.3. Summary table of Specific Objective 5 and Specific Objective 6.....	50
9. Review of the Dissemination and Communication Activities.....	51
9.1. Task 5.1 Dissemination and Communication Plan and Activities.....	51
9.1.1. Brand Identity Kit: Logo & Templates.....	51
9.1.2. GenB Website.....	51
9.1.3. Flyers/Posters/Roll-ups.....	52
9.1.4. Infographics.....	52
9.1.5. Multimedia material.....	52
9.1.6. Conference and events.....	53
9.1.7. Email, Newsletters and Press release.....	53
10. Key Impact pathways.....	55
10.1. Societal impact.....	55
10.2. Scientific impact.....	58
10.3. Economic impact.....	58
10.4. Environmental impact.....	59
11. Impact assessment.....	61
11.1. Questionnaires for GenB activities.....	62

11.2. Bioeconomical Investigator's Notebook	63
11.3. Partners' feedback	63
11.4. Progress of results - First Period	63
11.4.1. Methodological approach	63
11.4.2. GenB activities comparison analysis	64
11.4.3. General GenB Activities.....	65
11.4.4. Hands-on labs and playful activities.....	66
11.4.5. Bioeconomy Village at large scale events and BioArt Gallery.....	67
11.4.6. Role-play game on bioeconomy jobs in schools	67
11.4.7. TEDx pitches	68
11.4.8. Bioeconomy careers infodays	68
11.4.9. Educational activities using the toolkits.....	69
11.4.10. Informative webinar in partners countries	69
12. Best Practice Guide	70
13. Lessons learnt.....	71
14. Conclusions and next steps	72
15. Appendix 1.....	74
16. Appendix 2.....	75
17. References.....	77

Index of Tables

Table 1. WP1: Education contents - impact against KPI	19
Table 2. WP1: GenB Library - impact against KPI.....	20
Table 3. European Common Ground Camp - impact against KPI.....	20
Table 4. WP1: Focus Group - impact against KPI	21
Table 5. WP1: Living Labs - impact against KPI	21
Table 6. List of materials with KPI in T1.4	22
Table 7. Breakdown into items of the KPI of Task 1.4.....	22
Table 8. "What's bioeconomy" book - impact against KPI.....	23
Table 9. Video teasers and educational videos - impact against KPI.....	23
Table 10. Game or gamified educational experience - impact against KPI.....	24
Table 11. Quizzes and Educational card for social media and training - impact against KPI	25
Table 12. Online factsheet - impact against KPI.....	26
Table 13. Educational and information packages for young people - impact against KPI.....	27
Table 14. Lesson plans and training contents for teachers - impact against KPI.....	28
Table 15. Summary table SO1	29
Table 16. WP2: Bioeconomy village at large scale events - impact against KPI.....	30
Table 17. WP2: Inside the bioeconomy experimental exhibitions - impact against KPI.....	31
Table 18. WP2: BioArt Gallery at large scale events - impact against KPI	31
Table 19. WP2: BioArt Gallery at large scale events - impact against KPI	32
Table 20. Summary table S02.....	32
Table 21. WP2: Role-playing game on bioeconomy jobs in schools - impact against KPI	33
Table 22. WP2 TEDx pitches – - impact against KPI	34
Table 23: WP2: Bioeconomy careers info days - - impact against KPI	34
Table 24 WP2: "A Day in a biorefinery" study visit" - impact against KPI.....	35
Table 25. WP2: Schools' projects to grow future entrepreneurs - impact against KPI.....	35
Table 26. WP2: Educational activities using the toolkits - impact against KPI.....	36
Table 27. WP2: Bioeconomy talks/seminars inquiry-based learning - impact against KPI.....	36
Table 28. WP2: Online bio-educational village - impact against KPI per country	37
Table 29. WP2: Activities to educate teachers in teaching the bioeconomy - impact against KPI	38
Table 30. WP2: Informative webinars and Individual meetings - impact against KPI.....	38
Table 31. WP2: Individual meetings with multipliers - impact against KPI.....	39
Table 32. Summary table S03.....	40
Table 33: WP3: Young multipliers engaged to play as frontrunners - impact against KPI.....	42
Table 34: WP3: Young career testimonials - impact against KPI.....	42
Table 35: WP3: Environmental young journalist engaged - impact against KPI	42
Table 36: WP3: Environmental young journalist engaged - impact against KPI	43
Table 37:"GenB in Action" recruitment campaign- impact against KPI.....	43
Table 38: WP3: Capacity buildings in partners' countries @Biovoices- impact against KPI.....	44
Table 39: WP3: Social media profiles @Biovoices- impact against KPI	44
Table 40: WP3: GenB Ambassadors hosted in 5 events - impact against KPI.....	45
Table 41. WP3: GenB Ambassadors engaged in promotional activities- impact against KPI	46

Table 42. WP3: Social media campaigns by greensensitive - impact against KPI	46
Table 43. WP3: Young journalists publishing on GenB - impact against KPI.....	47
Table 44. Summary table SO4	48
Table 45. WP5:"Ecosystem Building" - impact against KPI	50
Table 46. WP5:"Online mobilisation and mutual learning workshops" - impact against KPI.....	50
Table 47. Summary table SO5	50
Table 48. WP5: Brand Identity: Logo & Templates - impact against KPI	51
Table 49: WP5: Brand Identity: Logo & Templates - impact against KPI	51
Table 50. WP5: Flyers, posters & roll-ups - Impact against KPI	52
Table 51. Infographics - impact against KPI	52
Table 52: Multimedia material - impact against KPI	53
Table 53. WP5: Conference and events - impact against KPI	53
Table 54. WP5: Email, newsletters and press release - impact against KPI.....	54
Table 55. Data per question for the overall of GenB activities.	65

Index of Figures

Figure 1. Expected impact of the GenB project	55
Figure 2. European population age between 4 and 19 years old.	57
Figure 3. Rating of GenB activities	65
Figure 4. Ranking of GenB Activities Questions	66
Figure 5 Self-check global table.	74
Figure 6. Word Questionnaire.....	75
Figure 7. Electronic Questionnaire.....	75
Figure 8. Bioeconomical Ivenstigator’s Notebook –Form page (left) and Questionnaire (right)	76
Figure 9. Bioeconomical Expert Passport.....	76

1. Executive summary

GenB contributes to the implementation of the updated 2018 EU Bioeconomy Strategy, the European Green Deal priorities, the achievement of a climate-neutral Europe by 2050 and the Sustainable Development Goals. GenB overall objective is to raise the Generation Bioeconomy (GenB), aware, sensitive and interested on environmental issues, sustainability and circularity. As such GenB activities are expected to result in significant societal, economic, environmental and scientific impacts.

The present Deliverable 4.2 is a mid-term impact monitoring and assessment report, and its main objective is to analyse the progress of the GenB project activities towards its expected impacts. The objectives of this deliverable are threefold: 1. Provide an overview of the project achievements/evolution; 2. Give qualitative feedback on project activities 3. Knowing the progress of the project towards the expected project impacts.

First, to provide an overview of the project achievements/ evolution, the status of KPIs achieved at this stage of the project is reported. To fulfil this objective, the global self-assessment table in Excel, developed during D4.1 has been used. This table highlights the advantage of being shared and edited by all members of the consortium, serving to distribute the workload among all project members participating in each Task. Two elements are considered to ensure the accomplishment of objectives: the KPIs expressed quantitatively, and the deadlines agreed upon in the project. As a result, this deliverable provides a detailed overview of the status of each work package and task in relation to the KPIs, as well as impact monitoring and information such as the description of some activities, planned events and current progress status, among others.

Second, to give qualitative feedback about the activities, an analysis of the data obtained through impact evaluation questionnaires and feedback from partners is presented. The questionnaires were developed in order to assess two variables of interest: the understanding of the concepts included in the training activity by the target groups and the satisfaction of the target audience. The questionnaires were developed (see D4.1) based on the SOLO Taxonomy (Structure of Observed Learning Outcomes), Bloom Taxonomy and Badau & Badau (2018) scientific literature. On the other hand, partners' feedback provides valuable experience, insights, lessons learnt and recommendations concerning the implementation of the activities. The results are analysed from an activity-by-activity perspective, and also from a global perspective, aiming to identify both strengths and areas for improvement in the GenB activities.

Based on the results obtained from the questionnaires, the main objectives regarding satisfaction and effectiveness in GenB activities are being satisfactorily achieved. The activities are fun, interesting, and provide value in increasing knowledge about the Bioeconomy. No activity has been developed below the minimum standards required to achieve these objectives. The main objective for the next period is to obtain a larger sample size, and to achieve this, efforts are being made to modify the questionnaires (always respecting the scientific literature) to make them easier to implement and more attractive to respond. In addition, the collection of qualitative information through observation from partners will be increased during the activities they organise and facilitate.

Thirdly, to delineate the advancement towards the anticipated impacts of the project, the progress in implementing the Specific Objectives is presented.

In Specific Objective 1 all parameters related to Tasks 1.1, 1.2, and 1.3 ("Education contents," "GenB resources Library," "European Common Ground Camp," "Focus Group," and "Living Labs") have been successfully completed. Task 1.4 "Toolkits for young people, teachers, and other multipliers" will be finalised by the end of the project since some new materials have still to be finalised.

Specific Objective 2 is related to WP2, specifically to Task 2.1 "Inspire and inform young people on sustainable and circular bioeconomy and bio-based sector." In this reporting period "Hands-on labs" and playful activities in partners' countries have been achieved. According to the Description of Action, WP2 started in Month 6 and will finish by Month 28, which is the 28th of February 2025. April 2024 marks Month 18, meaning partners have another ten months to complete their activities.

Specific Objective 3 is related to WP2, specifically to Tasks 2.2, 2.3, and 2.4. The KPIs for "Bioeconomy careers infodays," "schools projects to grow future entrepreneurs," "Bioeconomy talks/seminars," inquiry-based learning, and "Online bio educational village" have been achieved. WP2 started in Month 6 and will finish by Month 28, which is the 28th of February 2025. April 2024 marks Month 18, meaning partners have another ten months to complete their activities.

Specific Objective 4 is related to WP3. The KPIs for "Green sensitive young influencers", "GenB in Action" and "GenB Ambassadors engaged in promotional activities in Students2students" have been achieved.

Specific Objective 5 is related to WP2 and WP5. The KPI for projects and initiatives engaged in collaboration have been achieved.

Specific Objective 6 is related to WP4, specifically T4.2 and T4.3 which are just started (Month 18).

Finally, the expected impacts are analysed on the results achieved during the first reporting period:

- **Societal:** leveraging the co-creation activities carried out with citizens (50.000 individuals, 90% of them youngsters), activities carried out to engage youngsters (6.000 young people reached to assume roles as GenB Ambassadors).
- **Scientific:** exploiting the GenB Library, Uploaded contents, detected GenB outputs to be promoted on scientific articles.
- **Economical:** boosting the transition to a bioeconomy more aware about the importance of sustainability and circularity concepts.
- **Environmental:** bringing young people to apply the knowledge gained about bioeconomy and sustainability.

An impact analysis about GenB results will be presented in deliverable 4.3. "Impact monitoring and assessment report – Second period", when all GenB project results will be finalised and

evaluated, which will give the opportunity to estimate the global impact at European level with accurate data.

The final report will also guide future organisations, companies, educational institutions, policy makers, researchers, teachers, citizens and other target groups about which activities were more effective and which ones have a higher level of engagement.

2. Introduction

2.1. Background on the GenB project

GenB supports the execution of the updated 2018 EU Bioeconomy Strategy and the priorities of the European Green Deal, contributing to the goal of a climate-neutral Europe by 2050 and the Sustainable Development Goals. This involves the most significant EU-funded projects and initiatives in awareness and education (Transition2Bio, BIObec, AllThings.Biopro, WaysTUP!, BIOSWITCH, BLOOM, BIOVOICES, BIOWAYS, LIFT, Biobridges, BioCannDo, EuBioNet), as well as European and international school networks and experts in socio-economic sciences and humanities.

2.2. WP4 Objectives

The primary objective of WP4 is to:

- Maximise the impacts of GenB activities, contents and tools (T4.1)
- Facilitate exchange of good practices among education communities (national and European) and to transform the GenB education model into stakeholder-oriented actionable knowledge (T4.2)
- Support the modernisation of the governance by making information and knowledge available and accessible to policy makers (T4.3)

This deliverable contains the results related to T4.1.

2.3. T4.1 Objectives

Task 4.1 is devoted to configuring a sound impact monitoring and assessment strategy, including reliable impact indicators to monitor and evaluate the impact of the GenB project materials and activities proposed for each of the technical WP of the project. In addition, to provide advice and guidance for adjustment, improvements or corrective actions. The aim is to ensure that all project activities implemented in the different tasks effectively respond to the GenB specific objectives and achieve the expected impacts and KPIs set out in Section 4 to 8.

2.4. Scope and structure of the D4.2

The objective of the D4.2 “Impact monitoring and assessment strategy – First Period” aims to:

- Showing the results obtained so far and the steps to be taken to achieve the objectives by the end of the project.
- Analyse the levels of understanding and satisfaction, derived from the target groups, of the proposed activities in the project that have been carried out to date.

The D4.2 is an intermediate deliverable between D4.1 and D4.3. The monitoring strategy aimed at achieving project KPIs is described in D4.1.

This document is structured as follows:

Section 1 presents the Executive summary.

Section 2 presents the Introduction.

Section 3 addresses the operational aspects of the protocol for identifying and comparing the KPIs with the results achieved.

Sections 4 to 8 present the review of the KPIs for each Specific Objective (SO), from SO1 to SO6, respectively. For each SO, the specific KPIs of the component tasks are analysed, beginning with the committed KPI and followed by the achieved KPI. An explanation is provided and, where applicable, an illustrative picture is included.

Section 9 presents the level of stakeholders' satisfaction with GenB activities.

Section 10 is related to key impact pathways analyses: Societal, Economical, Environmental, and Scientific.

Section 11 addresses the expected impact assessment of the GenB project on its beneficiaries and stakeholders, beyond the achievement of the KPIs.

Section 12 presents a Best Practice Guide that summarizes the identification of certain good practices that have significantly enhanced the impact of GenB activities, leading to notably successful outcomes.

Section 13 and 14 gathers the lessons learnt and conclusions, respectively, offering valuable insights and reflections.

3. Monitoring of the fulfilment of objectives

The supervision of the impact indicators is the first part of the GenB impact monitoring and assessment strategy to verify if the project is achieving the impact established in the Description of the Action- DoA at a European level.

To ensure the fulfilment of the Specific Objectives and the KPIs in the project, a self-check global table and the review of the KPIs status in the First Period are proposed.

3.1. Self-check global table

Before the KPIs review, a description of the table's format and composition is provided below. The global self-monitoring table provides all Partners with easy access to the expected results for the tasks for which they are responsible. In particular, the table facilitates the Task monitoring autonomously with a triple purpose:

1. The Task leaders and WP leaders can allocate responsibilities to the partners involved in each Task, and partners can directly access this information.
2. The Task leaders and WP leaders can have an immediate, up-to-date control of the tasks they manage.
3. Partners involved in the Task can know whether they achieved their objective, or if they need an additional effort in some activity.

Self-check global table is presented in an .xls (Excel) format, enabling easy access, sharing and online editing. A version of the table is available in Appendix 1 and its structure is described in D4.1.

3.2. Review of the KPIs status – First Period

The structure of the Specific Objectives of GenB presented in the DoA has been taken into account in order to analyse the KPIs. The scope of the KPIs encompasses the overall achievements resulting from the collective efforts of all participating countries. Additionally, country-specific KPIs are integrated exclusively for activities that have been fully completed.

4. Review of the Specific Objective 1

According to the DoA, the SO1 involves co-creating innovative approaches, formats, materials, and tools through collaboration among children, young adults, parents, teachers, and other formal and non-formal education professionals, to offer educational and informational toolkits on bioeconomy in general and bio-based sectors.

To fulfil this objective, GenB defines measurable, verifiable, realistic and achievable KPIs. In this case, all the KPIs are related to WP1.

The specific Tasks to achieve “Specific Objective 1” are as follows:

- Task 1.1 Collection of bioeconomy awareness, information and education contents
- Task 1.2 GenB resources Library
- Task 1.3 Co-creation of the awareness, information and education innovative approaches
- Task 1.4 Toolkits for young people, teachers and other multipliers

Detailed information about WP1 tasks and results are available in D1.2 and D1.3.

The subsequent sections within Section 4 delineate the comparison between the KPIs under scrutiny and the corresponding accomplishments. Furthermore, anticipated completion dates are furnished for those activities that are not yet finalized.

4.1. Task 1.1 Collection of bioeconomy awareness, information and education contents

In Task 1.1, information and education contents, the KPI is >100 education contents. **The KPI has been successfully fulfilled** with 1022 uploads in the Library (Table 1).

Parameter	Value
Targets to be engaged	100 contents
Reached	1022 contents downloads in the library (922 additional uploads)
Start Month	1
End Month	4
KPI Current Status	Achieved, expectations exceeded

Table 1. WP1: Education contents - impact against KPI

4.2. Task 1.2 GenB resources Library

In Task 1.2, the **KPI has been successfully fulfilled** (Table 2). GenB Resources Library was launched on the 30th of June 2023 (Month 8) at the URL: library.genb-project.eu.

Parameter	Value
Targets to be engaged	1 GenB Library
Reached	1 GenB Library
Start Month	3
End Month	8
KPI Current Status	Achieved

Table 2. WP1: GenB Library - impact against KPI

4.3. Task 1.3 Co-creation of the awareness, information and education innovative approaches

In Task 1.3, European Common Ground Camps, Focus Groups, and Living Labs were conducted. Each of these is described in the following sections.

4.3.1. GenB Common Ground Camp

The GenB Common Ground Camp, which took place on 21st –22nd February 2023 in Athens, was structured to engage a wide range of stakeholders in education, encompassing both formal and non-formal educators. At this event, there were a total of 121 participants, so the **KPI** of 40 participants **has been significantly exceeded** (Table 3).

Parameter	Value
Targets to be engaged	40 participants
Reached	121 participants (81 additional participants)
Start Month	3
End Month	12
Current Status	Achieved, expectations exceeded

Table 3. European Common Ground Camp - impact against KPI

4.3.2. Focus Group

The focus groups had the primary objective of validating the methodologies and didactic proposals formulated during the Common Ground Camp. In the focus groups, these proposals were presented to the students by the GenB Project researchers or by their own teachers. This activity was carried out in more than the three European countries expected because one of the partners responsible for the activity is EUN, which, due to its mission and nature, works at the European level rather than at the country level. In total 910 persons participated in the focus groups. The **KPI** of 90 participants **has been considerably exceeded** (Table 4).

Parameter	Value
Targets to be engaged	90 participants
Reached	910 participants (820 additional participants) Divided as follows: 51 in Spain, 44 in Greece, 214 in Romania, 178 in Italy, 23 in Sweden, 25 in Portugal, 25 in Serbia, 20 in Croatia, 7 in Bulgaria. 29 in Ireland, 80 in Republic of North Macedonia, 50 in India, 119 in Turkey, 45 in Pakistan
Start Month	3
End Month	12
Current Status	Achieved, expectations exceeded

Table 4. WP1: Focus Group - impact against KPI

4.3.3. Living Labs

The aim of the GenB Living Labs was to employ a co-creation methodology to guide students to collaborate in developing new innovative formats, approaches, methods, tools to facilitate bioeconomy awareness and education. The Living Labs were carried out in Slovakia, Italy, and Austria as planned and 254 people participate in the activity. The **KPI** of 180 participants **has been successfully exceeded** (Table 5).

Parameter	Value
Targets to be engaged	180 participants
Reached	254 (74 additional participants) Divided as follows: 111 at AT, 65 at IT and 78 at SK
Start Month	3
End Month	12
Current Status	Achieved, expectations exceeded

Table 5. WP1: Living Labs - impact against KPI

4.4. Task 1.4 Toolkits for young people, teachers and other multipliers

The GenB toolkits are a set of educational materials designed to facilitate understanding and learning about the bioeconomy and related topics. The aim is to provide 6 toolkits, one per target group: pre- and early- school students (4-8 y.o.), elementary school students (9-13 y.o.), high school students (14-19 y.o.), teachers, multipliers and for boosting collaboration among teachers, parents and youth (see D1.3). Each toolkit is defined by the selection of the materials developed that are aimed at its target audience.

4.4.1. Scope of KPI analysis in Task 1.4

In Task 1.4 more materials have been developed than planned in the DoA. These additional materials have not been assessed in terms of KPIs, due to the absence of specific indicators for this purpose. Section 4.4.10 lists the additional materials developed. **Errore. L'origine riferimento non è stata trovata.** shows the selection of the results identified in the DoA that should achieve a KPI under Task 1.4.

Materials	<ul style="list-style-type: none"> • Books for kids (T1.4 a) • Video teasers and educational videos (T1.4 d1, T1.4 d2, T1.4 d3) • Game or gamified educational experience (T1.4 b1, T1.4 b2, T1.4 b3) • Quizzes and educational cards (T1.4 c) • Online factsheets “bioeconomy job profiles” (T1.4 e) • Educational and information packages (T1.4 f1, T1.4 f2, T1.4 f3) • Lesson plans (T1.4 g1, T1.4 g2) and Training contents for teachers (T1.4 h) <p><i>Note: The materials are accompanied by the code that identifies them in D1.3 for an easy identification.</i></p>
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Table 6. List of materials with KPI in T1.4

The KPIs for Task 1.4 are of three types, expressed as items:

1. Development of six toolkits and therefore their respective tools – item #1
2. Translation of the six toolkits into nine different languages – item #2
3. Implementation of the six toolkits, engaging with 4.000 users (Note: some materials have its own implementation KPI) – item #3

Table 7 compiles the nomenclature developed to analyse the achieved KPIs of the materials described in the subsequent sections, along with the deadline for executing each one.

Item	Description	KPI	Start month	End month
#1	Material development	6 toolkits	5	18
#2	Translation	9 languages	5	30
#3	Implementation	Toolkits: 4.000 users Each material: defined by its specific KPI	5	30

Table 7. Breakdown into items of the KPI of Task 1.4

The deadline for item #1 is April 30th 2024, while item #2 and item #3 have deadlines until the end of the project. Therefore, this D4.2 only presents the status of the KPIs for the developed materials. However, the progress achieved in addressing item #2 and item #3 as of April 30th is elaborated upon through comments in their corresponding sub-sections. In the subsequent tables, item #2 and item #3 are highlighted in grey to illustrate that they do not apply.

The status of both the toolkits and materials are detailed in the following sub-sections.

4.4.2. "What's bioeconomy" book

The KPI for the "What's Bioeconomy" book entails translating the book into four additional languages (see D1.3). The **KPI** of 4 translations **have been accomplished** (Table 9).

Parameter	KPI item	Value
Additional languages	#1	4 (PL, UA, BG, ML)

Table 8. "What's bioeconomy" book - impact against KPI

4.4.3. Video teasers and educational videos

The KPI is to produce 2 video teasers and 1 educational video that will be translated into 9 languages (EN, FR, IT, GE, NL, SP, PT, GR, SK) and accumulate a total of 4.000 views. Following the indications given in Table 7, only activities related to KPI item #1 –material development activities- are evaluated.

Parameter	KPI item	Value
Video teasers	#1	2
Video teaser reached	#1	0
Educational videos	#1	1
Educational videos reached	#1	0
Video teasers translations	#2	9 languages
Video teasers translations reached	#2	0
Educational video translations	#2	9 languages
Educational video translations reached	#2	0
Number of views (for both types of videos)	#3	4.000 views
Number of views (for both types of videos) reached	#3	0 views
Start Month	#1	5
End Month	#1	18
Current Status	#1	On-going

Table 9. Video teasers and educational videos - impact against KPI

Table 9 indicates that the **KPI item #1 has not been achieved, but efforts are on-going to complete it**. For informational purposes, efforts to meet the KPIs related to item #2 –translation tasks- and item #3 –implementation tasks- are also on-going.

At this point of the project, the videos have not been produced, but progress has been made. For the educational video, guidelines for self-recording have been prepared and translations from partners have been collected (SK, EN, IT, DE, NL, PT, SP). In addition, GenB Ambassadors have been mobilized to produce the materials. On the other hand, for the video teaser, a format is being designed enabling them to record the contents without speaking (Work in Progress) and is planned to be produced in the following months, specifically when the GenB Ambassadors will be available.

The reason for this delay lies in the fact that the videos will be recorded with the collaboration of the GenB Ambassadors during the events scheduled with them, which have not yet taken place.

For further details on the planning, please refer to D1.3. No issues are expected in meeting the KPI within the end of the project.

4.4.4. Game or gamified educational experience

The KPI is to develop one game or gamified experience translated into 9 languages (EN, FR, IT, GE, NL, SP, PT, GR, SK) and distribute it among a total of 3.000 users. Following the indications given in Table 7, only activities related to KPI item #1 -material development tasks- are evaluated.

Parameter	KPI item	Value
Game or gamified educational experience	#1	1
Game or gamified educational experience reached	#1	1, largely (Educational Board Game) 1, finish (BioHeroes: Let's Save the Planet!) 1, finish (Escape4Future - Chemistry meets Circular Bioeconomy)
Game or gamified educational experience translations	#2	9 languages
Game or gamified educational experience translations reached	#2	0
Number of users	#3	3.000 users
Number of users reached	#3	0
Start Month	#1	5
End Month	#1	18
Current Status	#1	On-going

Table 10. Game or gamified educational experience - impact against KPI

Table 10 indicates that the **KPI item #1 has not been fully achieved, but efforts are on-going to complete it.**

It is worth noting that three games have been developed to be part of the GenB toolkit:

- BioHeroes: Let's Save the Planet! (4-8 y.o.)
- Educational Board Game (9-13 y.o.)
- Escape4Future - Chemistry meets Circular Bioeconomy (14-19 y.o.)

The game BioHeroes: Let's Save the Planet! The role-playing game is completed and available in English and Spanish. Escape4Future - Chemistry meets Circular Bioeconomy: The gamified experience is completed.

The Educational Board Game is partially completed. Development progress has been shared internally between APRE and AIJU. The development of a game from scratch is requiring a

significant effort from both partners with consultations and validations with external experts contributing to the extended timeline. A first prototype will be ready in June 2024, and a first version of the game will be inserted in the second version of the GenB educational toolkits.

For further details on the planning, please refer to D1.3. No issues are expected in meeting the KPI within the end of the project.

4.4.5. Quizzes and Educational card for social media and training

The KPI is to develop 20 quizzes and educational cards for social media and training translated into 9 languages (EN, FR, IT, GE, NL, SP, PT, GR, SK) and accumulate a total of 10.000 views. Following the indications given in Table 7, only activities related to KPI item #1 –material development tasks- are evaluated.

Parameter	KPI item	Value
Quizzes and educational cards	#1	20
Quizzes and educational cards reached	#1	20
Quizzes and educational cards translations	#2	9 languages
Quizzes and educational cards translations reached	#2	1 (English)
Number of views	#3	10.000 views
Number of views reached	#3	Not consulted
Start Month (KPI)	#1	5
End Month (KPI)	#1	18
Current Status	#1	Achieved

Table 11. Quizzes and Educational card for social media and training - impact against KPI

Table 11 indicates that the **KPI item #1 has been achieved**. For informational purposes, efforts to meet the KPIs related to items #2 –translation tasks and item #3 –implementation tasks-. Currently, the material (both quizzes and educational cards) are in English. The layout has been planned as follows: the quizzes are available in two formats, printable (for home printer and professional printer) and social media, the latter being the only one still to be finalised. The educational cards are presented in three formats: printable (for home printer and professional printer), web and social media, with the printable version still to be completed. The material is on the GenB website and can be viewed online or downloaded.

Furthermore, the material underwent internal scientific-technical validation within the consortium and external validation with specialized teachers in the field. Although this latter validation was not initially planned in the DoA, it was carried out and helped identify two relevant topics for the target audience, enhancing the material. Therefore, it was decided to halt the translations into the remaining 8 languages and incorporate the feedback from the teachers, creating new quizzes and/or educational materials accordingly.

The next steps involve developing the updated versions of quizzes and educational cards identified during external validation, translating them into 9 languages, and formatting them accordingly in all 9 languages.

This task is ongoing without delay, as the translation and the views are associated with item #2 and item #3, respectively. For further details on the planning, please refer to D1.3. No issues are expected in meeting the KPI within the end of the project.

4.4.6. Online factsheet “bioeconomy job profiles”

The KPI is to develop 1 online factsheet “bioeconomy job profiles” translated into 9 languages (EN, FR, IT, GE, NL, SP, PT, GR, SK) and distributed among 400 students. Following the indications given in Table 7, only activities related to KPI item #1 –material development tasks- are evaluated.

Parameter	KPI item	Value
Online factsheets	#1	1
Online factsheets reached	#1	4
Online factsheets translations	#2	9 languages
Online factsheets translations reached	#2	8 (French is missing)
Number of users	#3	400 students
Number of users reached	#3	63 students reached 1.380 students indirectly reached
Start Month	#1	5
End Month	#1	18
Current Status	#1	Achieved, expectations exceeded

Table 12. Online factsheet - impact against KPI

Table 12. Online factsheet - impact against indicates that the **KPI item #1 has been achieved**. For informational purposes, efforts to meet the KPIs related to items #2 –translation tasks- and #3 –implementation tasks- have already commenced.

Currently, 4 online factsheets have been created. Additionally, they have been supplemented with videos of interviews conducted with the participants. In this period of the project, the KPI reached is 8 languages. French will be available for the second version of D.1.3.

It is important to note that 4 job profiles have been developed, but currently one is pending approval from the interviewee. Therefore, only 3 job profiles are currently uploaded on the GenB website. Efforts are ongoing to obtain a response from the interviewee to host the missing job profile on the GenB website.

On the other hand, the material must reach 400 students, and at this point in the project, the KPI is 63 students directly reached, with approximately 1.380 students indirectly reached.

This task is ongoing without delay, as the translations and the users reached are associated with item #2 and item #3, respectively. For further details on the planning, please refer to D1.3. No issues are expected in meeting the KPI within the end of the project.

4.4.7. Educational and information packages for young people

The KPI is to develop 3 Educational and information packages for young people translated into 9 languages (EN, FR, IT, GE, NL, SP, PT, GR, SK) and reach 1.000 young people. Following the indications given in Table 7, only activities related to KPI item #1 –material development tasks– are evaluated.

Parameter	KPI item	Value
Educational and information packages	#1	3
Educational and information packages reached	#1	0
Educational and information packages translations	#2	9 languages
Educational and information packages translations reached	#2	0
Number of users	#3	1000 young people
Number of users reached	#3	0
Start Month	#1	5
End Month	#1	18
Current Status	#1	On-going

Table 13. Educational and information packages for young people - impact against KPI

Table 13Table 13. Educational and information packages for young people - impact against KPI

indicates that the **KPI item #1 has not been fully achieved, but efforts are on-going to complete it.**

A draft version of 1) Educational and information packages for Pre- and Early-school (4-8 y.o.); 2) Educational and information packages for Elementary school (9-13 y.o.); and 3) Educational and information packages for High school (14-19 y.o.) are being reviewed by the consortium.

As some materials have not yet reached sufficient development, the educational and information packages will be finalised in a later stage. The following activities are planned for their finalisation by the end of the project:

- Develop the final versions, which will include more detailed information since all materials will have already been developed and integrate partner feedback.
- Translation into 9 languages.
- Layout in 9 languages.

For further details on the planning, please refer to D1.3. No issues are expected in meeting the KPI within the end of the project.

4.4.8. Lesson plans and training contents for teachers

The KPI is to develop 1 Lesson plans and training contents for teachers translated into 9 languages (EN, FR, IT, GE, NL, SP, PT, GR, SK) and reach 400 teachers and 6.000 kids indirectly.

Following the indications given in Table 7, only activities related to KPI item #1 –material development tasks- are evaluated.

Parameter	KPI item	Value
Lesson plans and training contents for teachers	#1	1
Lesson plans and training contents for teachers reached	#1	0
Lesson plans and training contents for teachers' translations	#2	9 languages
Lesson plans and training contents for teachers' translations reached	#2	0
Number of users	#3	1000 teachers 6000 kids (indirectly)
Number of users reached	#3	0
Start Month	#1	5
End Month	#1	18
Current Status	#1	On-going

Table 14. Lesson plans and training contents for teachers - impact against KPI

Table 14 indicates that the **KPI has not been fully achieved, but efforts are on-going to complete it.**

Two lesson plans have been developed, one for teachers and another for multipliers, which was not originally planned. Additionally, one training content has been developed, targeting both teachers and multipliers.

As for the lesson plan aimed at teachers, the content definition has been carried out, and its content has been validated by external teachers. A pilot test in a real context with students is planned for May 2024. This exercise was not initially planned but has been decided upon to maximize the educational impact of the material. The following tasks have been planned:

- Review of the toolkit according to the feedback gathered and finalized by the end of May 2024.
- Translation into 9 languages.
- Layout in 9 languages.

The lesson plan aimed at multipliers has the content developed and has been internally validated by the consortium. External validation by teachers or a pilot test is not anticipated.

Regarding the training contents for teachers and multipliers, the content framework has been defined, although it has not been developed yet. In addition to the content development, the following tasks have been planned: reviewed and validated by FEE and then by GenB partners for peer review.

The materials are expected to be finalized by the end of May to early June so they can be subsequently incorporated in the MOOC. The 9 language versions will be available on the GenB website by the end of the project.

4.4.9 Toolkits for young people, teachers and other multipliers

The KPI is to produce 6 toolkits for young people, teachers and other multipliers translated into 9 languages (EN, FR, IT, GE, NL, SP, PT, GR, SK) and distribute it among a total of 4.000 users. The KPI analysed is related to item #1, so only the content validation is assessed.

The **KPI item #1 has not been fully achieved, but efforts are on-going to complete it.** For informational purposes, efforts to meet the KPIs related to items #2 –translation tasks- and #3 –implementation tasks- are on-going.

The completion of the toolkits depends on the finalization of the materials that compose them.

The development of six toolkits and their respective tools (item #1 of the KPI for T1.4) will be presented in the updated D1.3 version that will be submitted by the end of the project. Additionally, it will encompass the KPIs associated with item #2 - translation of the six toolkits into nine different languages - and item #3 - implementation of the six toolkits, involving 4.000 users.

4.4.10. Additional materials developed

The GenB toolkit includes additional materials beyond those agreed upon in the DoA:

- Gamified educational experience “Escape4Future - Chemistry meets Circular Bioeconomy” (T1.4 b2)
- Role play card game “BioHeroes: Let’s save the planet!” (T1.4 b3)
- Hands-on experiments (T1.4 j)
- Fairy tale (T1.4 k)
- Participatory photography (T1.4 l)
- Podcasts (T1.4 m)

The nomenclature used in D1.3 is indicated in parentheses. For further details, please refer to D1.3.

4.5. Summary table of Specific Objectives 1

Task	KPI Current Status
Information and education contents	Achieved, expectations exceeded
GenB Resources Library	Achieved
GenB Common Ground Camps	Achieved, expectations exceeded
Focus Group	Achieved, expectations exceeded
Living Labs	Achieved, expectations exceeded
Toolkits for young people, teachers and other multipliers	On-going

Table 15. Summary table SO1

No issues are expected in meeting the KPI within the end of the project.

5. Review of the Specific Objective 2

According to the DoA, the SO2 involves raise awareness, interest and knowledge of young people at pre-school, elementary and high school on the environmental, social and economic benefits of sustainable and circular bioeconomy and its sectors, in particular bio-based sectors through inspirational activities.

To achieve this objective, GenB defines measurable, verifiable, realistic and achievable KPIs. In this case, the following KPIs from Task 2.1 Inspire and inform young people on sustainable and circular bioeconomy and bio-based sectors of WP2 are taken into account.

Detailed information about the WP2 tasks is available in D2.2.

The subsequent sections within Section 5 delineate the comparison between the KPIs under scrutiny and the corresponding accomplishments. Furthermore, anticipated completion dates are furnished for those activities that are not yet finalized.

5.1. Task 2.1 Inspire and inform young people on sustainable and circular bioeconomy and bio-based sectors

In Task 2.1, the following activities were identified. The activities are accompanied by the code that identifies them in D2.2 for an easy identification:

- “Hands-on labs” and playful activities (2.1a)
- Bioeconomy village (2.1b)
- Inside the bioeconomy experimental exhibit (2.1c)
- BioArt Gallery (2.1d)

Each of these is described in the following sections.

5.1.1. “Hands-on labs” and playful activities in partners’ countries

Parameter	Value
Target countries	8
Countries with implementation completed	6
Countries with ongoing or planned implementation	4
Participants engaged	1.529 (1.129 additional participants)
Targets to be engaged	400 young people
Start Month	6
End Month	28
KPI Current Status	Target countries KPI: On-going and planned to achieve it by exceeding expectations Participants engaged KPI: Achieved by exceeding expectations

Table 16. WP2: Bioeconomy village at large scale events - impact against KPI

Table 16 shows that **KPI of 400 participants has been significantly exceeded**. The implementation of this Task is **on-going to achieve the target country KPI**. Several GenB partners foresee implementing additional events as detailed in D2.2. This will help to both achieve and overcome the KPI in time within the specified timeframe in the DoA, with the latest deadline set for February 28th, 2025.

5.1.2. “Inside the bioeconomy” experiential exhibit in existing public spaces

Parameter	Value
Target countries	4
Countries with implementation (largely) completed	0
Countries with ongoing or planned implementation	4
Participants engaged	0
Targets to be engaged	4.000 people
Start Month	6
End Month	28
KPI Current Status	Planning Stage

Table 17. WP2: Inside the bioeconomy experimental exhibitions - impact against KPI

Table 17 indicates that implementation of this Task is at the **planning stage**. No targets groups have been reached yet (actual KPI = 0). No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28th, 2025.

5.1.3. Bioeconomy village

Parameter	Value
Target countries	4
Countries with implementation (largely) completed	3
Countries with ongoing or planned implementation	2
Participants engaged	3962
Targets to be engaged	40.000 people
Start Month	6
End Month	28
KPI Current Status	On-going

Table 18. WP2: BioArt Gallery at large scale events - impact against KPI

Table 18 shows the implementation of this Task is **on-going**. Several GenB partners foresee implementing additional events as detailed in D2.2 to achieve both target countries KPI and participants engaged KPI. This will help in achieving the KPI within the specified timeframe in the DoA, with the latest deadline set for February 28th, 2025.

5.1.4. BioArt Gallery

Parameter	Value
Target countries	8
Countries with implementation (largely) completed	6
Countries with ongoing or planned implementation	4
Events implemented	11
Participants engaged	4.463
Targets to be engaged	40.000 people
Start Month	6
End Month	28
KPI Current Status	On-going

Table 19. WP2: BioArt Gallery at large scale events - impact against KPI

Table 19 indicates that the implementation of this Task is **on-going**. Several GenB partners foresee implementing additional events as detailed in D2.2 to achieve both target countries KPI and participants engaged KPI. This will help in achieving the KPI within the specified timeframe, with the latest deadline set for February 28th, 2025.

5.2. Summary table of Specific Objective 2

Task	KPI Current Status
Hands- on labs	Achieved, (expectations exceeded) and on-going with additional activities planned
Bioeconomy village	On-going
Inside the bioeconomy exhibit	Planning Stage
BioArt Gallery	On-going

Table 20. Summary table S02

No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28th, 2025.

6. Review of the Specific Objective 3

According to the DoA, the SO3 involves increase interest among new generations to join education and training on bioeconomy at large and create new ways of attracting talent in the life science, technology and the bioeconomy opportunities.

To fulfil this objective, GenB defines measurable, verifiable, realistic and achievable KPIs. In this case, all the KPIs are related to WP2. The specific Tasks to achieve “Specific Objective 3” are as follows:

- Task 2.2 Inspire and inform students in bioeconomy careers
- Task 2.3 Educate young people to promote the bio transition
- Task 2.4 Educate teachers in teaching bioeconomy
- Task 2.5 Inform and educate other multipliers

Detailed information about the tasks is available in D3.2.

The subsequent sections within Section 6 delineate the comparison between the KPIs under scrutiny and the corresponding accomplishments. Furthermore, anticipated completion dates are furnished for those activities that are not yet finalized.

6.1. Task 2.2 Inspire and inform students in bioeconomy careers

In Task 2.2, the following activities were identified. The activities are accompanied by the code that identifies them in D2.2 for an easy identification:

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

6.1.1. “Role-play game” on bioeconomy jobs in schools

Parameter	Value
Target countries	3
Countries with implementation (largely) completed	2
Countries with ongoing or planned implementation	2
Participants engaged	73 participants
Targets to be engaged	150 students
Start Month	6
End Month	28
KPI Current Status	On-going

Table 21. WP2: Role-playing game on bioeconomy jobs in schools - impact against KPI

Table 21 indicates that the implementation of this task is **on-going**. Several GenB partners foresee implementing additional events as detailed in D2.2 to achieve both target countries KPI and participants engaged KPI. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28th, 2025.

6.1.2. TEDx pitches

Parameter	Value
Target countries	3
Countries with implementation (largely) completed	2
Countries with ongoing or planned implementation	1
Participants engaged	130 participants
Targets to be engaged	300 students
Start Month	6
End Month	28
KPI Current Status	On-going

Table 22. WP2 TEDx pitches -- impact against KPI

Table 22 shows the implementation of this Task is **on-going** to achieve both target countries KPI and participants engaged KPI. Additional info as detailed in D2.2. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28th, 2025.

6.1.3. Bioeconomy careers infodays

Parameter	Value
Target countries	4
Countries with implementation (largely) completed	4
Countries with ongoing or planned implementation	1
Participants engaged	234 participants
Targets to be engaged	300 students
Start Month	6
End Month	28
KPI Current Status	On-going with additional activities planned

Table 23: WP2: Bioeconomy careers info days - - impact against KPI

Table 23 shows that the implementation of this Task is **on-going to achieved the KPI**. GenB partners foresee implementing additional events as detailed in D2.2. This will help to overcome the KPI within the specified timeframe in the DoA, with the latest deadline set for February 28th, 2025.

6.1.4. “A day in a biorefinery” study visit

Parameter	Value
Target countries	3
Countries with implementation (largely) completed	1
Countries with ongoing or planned implementation	3
Participants engaged	45 students and 5 teachers
Targets to be engaged	100 students
Start Month	6
End Month	28
KPI Current Status	On-going

Table 24 WP2: “A Day in a biorefinery” study visit” - impact against KPI.

Table 24 shows this Task is **on-going**. For further details on the planning, please refer to D2.2. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

6.1.5. “Schools’ projects” to grow future entrepreneurs

Parameter	Value
Target countries	1
Countries with implementation (largely) completed	1
Countries with ongoing or planned implementation	0
Participants engaged	~6.000 participants (1000 additional participants) Directly involved 380 students, teachers, and tutors
Targets to be engaged	5.000 students
Start Month	6
End Month	28
KPI Current Status	Achieved, expectations exceeded

Table 25. WP2: Schools’ projects to grow future entrepreneurs - impact against KPI

Table 25 shows that **the overall KPI has been achieved successfully**.

6.2. Task 2.3 Educate young people to promote the biotransition

In Task 2.3, the following activities were identified:

- Educational activities using the toolkits (2.3a)
- Bioeconomy talks/seminars inquiry-based learning (2.3b)
- Online bio educational village (2.3c)

6.2.1. Educational activities using the toolkits

Parameter	Value
Target countries	8
Countries with implementation (largely) completed	4
Countries with ongoing or planned implementation	5
Participants engaged	663 (including 91 in AT, and-377 in IT and 165 in ES)
Targets to be engaged	720 Young people
Start Month	6
End Month	28
KPI Current Status	On-going

Table 26. WP2: Educational activities using the toolkits - impact against KPI

Table 26 shows that the implementation of this Task is **on-going**. For further details on the toolkits, please refer to D2.2. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28th, 2025.

6.2.2. Bioeconomy talks/seminars inquiry-based learning

Parameter	Value
Target countries	8
Countries with implementation (largely) completed	6
Countries with ongoing or planned implementation	2
Participants engaged	3246 participants (2846 additional participants)
Targets to be engaged	400 young people
Start Month	6
End Month	28
KPI Current Status	Target countries KPI: On-going Participants engaged KPI: Achieved, expectations exceeded

Table 27. WP2: Bioeconomy talks/seminars inquiry-based learning - impact against KPI

Table 27 indicates that **the overall KPI has been achieved successfully**. The implementation of this Task is **on-going to achieve the target country KPI**. Several GenB partners foresee implementing additional events as detailed in D2.2. This will help in achieving the KPI within the specified timeframe in the DoA, with the latest deadline set for February 28th, 2025.

6.2.3. Online bio educational village

Parameter	Value
Target countries	1
Countries with implementation (largely) completed	1
Countries with ongoing or planned implementation	1
Participants engaged	6.000 young people and teachers (1000 additional participants)
Targets to be engaged	5.000 young people
Start Month	6
End Month	28
KPI Current Status	Achieved (expectations exceeded), and on-going with additional activities planned

Table 28. WP2: Online bio-educational village - impact against KPI per country

Table 28 indicates that **the overall KPI has already been met successfully**. The implementation of this Task is **on-going thus exceeding its KPI even further**. Several GenB partners foresee implementing additional events as detailed in D2.2. This will help to increase the KPI -already reached at this stage- in time within the specified timeframe in the DoA, with the latest deadline set for February 28th, 2025.

6.3. Task 2.4 Educate teachers in teaching bioeconomy

In Task 2.4, the following activities were identified, as a unique KPI: “What’s bioeconomy MOOC” (2.4a), “How to use GenB toolkits” (2.4b) and “Bioeconomy job profiles” (2.4c).

6.3.1. “What’s bioeconomy” MOOC, How to use GenB Toolkits, Bioeconomy Job Profiles

Parameter	Value
Target countries	8
Countries with implementation (largely) completed	4
Countries with ongoing or planned implementation	5
Participants engaged	263 teachers and 5.260 Young people indirect
Targets to be engaged	800 teachers and 12.000 students (indirect)
Number of toolkits in each country to be implemented	3

Parameter	Value
Number of toolkits in each country implemented	3 (preliminary) toolkits established
Number of job profiles in each country to be implemented	4
Number of job profiles in each country implemented	4 (preliminary) job profiles established
Start Month	6
End Month	28
KPI Current Status	On-going

Table 29. WP2: Activities to educate teachers in teaching the bioeconomy - impact against KPI

Table 29 shows that the implementation of this Task is **on-going**. For further details on the toolkits, please refer to D2.2. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

6.4. Task 2.5 Inform and educate other multipliers

In Task 2.5, the following activities were identified

- Informative webinar in partners' countries
- Individual meetings with three multipliers in each partners' country

6.4.1. Informative webinar in partners' countries

Parameter	Value
Target countries	8
Countries with implementation (largely) completed	2
Countries with ongoing or planned implementation	7
Participants engaged	> 50 multipliers plus >700 Young people indirect
Targets to be engaged	80 multipliers (10 per country)
Number of young people reached indirectly	4.000 young people (indirectly)
Start Month	6
End Month	28
KPI Current Status	On-going

Table 30. WP2: Informative webinars and Individual meetings - impact against KPI

Table 30 indicates that the implementation of this Task is **on-going**. For further details on the toolkits, please refer to D2.2. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

6.4.2. Individual meetings with three multipliers in each partners' country

Parameter	Value
Target countries	8
Countries with implementation (largely) completed	4
Countries with ongoing or planned implementation	5
Events implemented	>10
Participants engaged	> 1.000 multipliers plus >-1200 Young people indirect
Targets to be engaged	80 multipliers (10 per country)
Number of people reached indirectly	4.000 young people (indirect)
Start Month	6
End Month	28
KPI Current Status	On-going

Table 31. WP2: Individual meetings with multipliers - impact against KPI

Table 31 provides the current status of the impact against KPIs in the individual meetings with multipliers. It can be seen that the implementation of this Task is **on-going**. For further details on the toolkits, please refer to D2.2. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

6.5 Summary table of Specific Objectives 3

Task	KPI Current Status
Role-play game on bioeconomy jobs in schools	On-going
TEDx pitches	On-going
Bioeconomy careers infodays	On going
"A day in a biorefinery" study visit	On-going
Schools' projects" to grow future entrepreneurs	Achieved by exceeding expectations
Educational activities using the toolkits	On-going
Bioeconomy talks/seminars inquiry-based learning	Target countries KPI: On-going Participants engaged KPI: Achieved by exceeding expectations
Online bio educational village	Achieved by exceeding expectations and on-going with additional programmed activities
What's bioeconomy" MOOC, GenB Toolkits, Bioeconomy Job Profiles	On-going
Informative webinar in partners' countries	On-going

Task	KPI Current Status
Individual meetings with three multipliers in each partners' country	On-going

Table 32. Summary table S03

No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

7. Review of the Specific Objective 4

According to the DoA, the SO4 contributes to the transition of the new generations towards more sustainable and circular behaviours, consumptions and lifestyles through the empowerment of the young generations to assume their role.

To fulfil this objective, GenB defines measurable, verifiable, realistic and achievable KPIs. In this case, the following KPIs from WP3.

The specific Tasks to achieve “Specific Objective 4” are as follows:

- Task 3.1 Engage GenB Ambassadors
- Task 3.2 Empower the GenB Ambassadors
- Task 3.3 Support GenB Ambassadors to take a role
- Task 3.4 European Youth forum on bioeconomy

The expected impact is: Preparing the younger generation to assume their role in the transition to a circular and sustainable bioeconomy, for example, through the uptake of innovative solutions. Nomination of "Bioeconomy Youth Ambassadors" campaigns for children and young adults in high schools.

Detailed information about the tasks available in D3.2.

The subsequent sections within Section 7 delineate the comparison between the KPIs under scrutiny and the corresponding accomplishments. Furthermore, anticipated completion dates are furnished for those activities that are not yet finalized.

7.1. Task 3.1 Engage GenB Ambassadors

In Task 3.1, the following expected results were identified:

- 20 young multipliers engaged to play as frontrunners
- Young career testimonials
- Green sensitive young influencers and activists
- Environmental young journalists engaged (1 per country per type)
- #1 “GenB in Action” recruitment campaign

7.1.1. Young multipliers engaged to play as frontrunners

The KPIs for this activity aimed to engage 20 multipliers to play as frontrunners. At this stage of the project, this KPI has been carried out by 18 multipliers to play as frontrunners. Table 33 shows that the implementation of this Task is **on-going**, as shown in 34.

Parameter	Value
Targets to be engaged	20 multipliers to play as frontrunners
Reached	16 multipliers to play as frontrunners
Start Month	6

End Month	28
KPI Current Status	On-going

Table 33: WP3: Young multipliers engaged to play as frontrunners - impact against KPI

No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

7.1.2. Young career testimonials

The KPIs for this activity aimed to engage 8 GenB Ambassadors to play this role. At this stage of the project, this KPI has been carried out by 4 GenB Ambassadors. This task is **on-going**, as shown in Table 34. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

Parameter	Value
Targets to be engaged	8 young career testimonials taking a role in GenB activities
Reached	4 GenB Ambassadors engaged as career testimonials
Start Month	6
End Month	28
KPI Current Status	On-going

Table 34: WP3: Young career testimonials - impact against KPI

7.1.3. Green sensitive young influencers and activist

The KPIs for this activity aimed to engage 24 activists. At this stage of the project, this KPI has been carried out by 93 GenB activist. **KPI has already been achieved successfully**, as shown in Table 35.

Parameter	Value
Targets to be engaged	24 activists
Reached	100 activists (76 additional activist)
Start Month	6
End Month	28
KPI Current Status	Achieved by exceeding expectations

Table 35: WP3: Environmental young journalist engaged - impact against KPI

7.1.4. Environmental young journalist engaged

The KPIs for this activity aimed to engage 8 GenB Ambassadors to play this role. At this stage of the project, this KPI value reached by the end of the first period is 3 GenB Ambassadors. Task is **on-going**, as shown in Table 36. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

Parameter	Value
Targets to be engaged	8 environmental young journalists
Reached	3 GenB Ambassadors involved as environmental young journalists
Start Month	6
End Month	28
Current Status	On-going

Table 36: WP3: Environmental young journalist engaged - impact against KPI

7.1.5. “GenB in Action” recruitment campaign

The KPIs for this activity aimed to engage 10.000 views. At this stage of the project, this KPI has been met by reaching 82.796 views. The call was promoted on GenB's social media channels (@Biovoices) through the 'GenB in action' social media recruitment campaign, with different linguistic versions published several times. This campaign, supported by paid promotion, was very effective in reaching views (82.796 views). **The overall KPI has already been achieved successfully**, as shown in Table 37.

Parameter	Value
Targets to be engaged	GenB Ambassadors Recruitment campaign on social media: #10.000 views
Reached	#82.796 views (72.796 additional views compared with the KPI established at the DoA)
Start Month	6
End Month	28
KPI Current Status	Achieved by exceeding expectations

Table 37: “GenB in Action” recruitment campaign- impact against KPI

7.2. Task 3.2 Empower GenB Ambassadors

In Task 3.2, the following expected results were identified:

- 18 capacity building webinars
- 3 social media profiles @GenBiovoices
- 1 online mutual learning workshop among GenB ambassadors and
- GenB Ambassadors hosted in 5 events, conferences, other youth groups meeting

7.2.1. Capacity building in partners’ countries

The task is **on-going**, as indicated in Table 38. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

Capacity building	KPI	Reached
English Master course	#2 capacity building webinars per country (total number #18) #180 participants to capacity buildings	1 capacity building: Basic level 1 21 Ambassadors empowered in total
Capacity building in Italy		7 capacity building 165 students reached, among them 69 GenB Ambassadors empowered
Capacity building in Slovakia		1 capacity building 2 Ambassadors empowered
Capacity building in Spain		Not implemented yet
Capacity building in Austria		3 capacity building 28 Ambassadors empowered
Capacity building in Greece		1 capacity building 3 Ambassadors empowered
Capacity building in Portugal		Not implemented yet
Capacity building in The Netherlands		Not implemented yet
Start Month		6
End Month	28	
KPI Current Status	On-going	

Table 38: WP3: Capacity buildings in partners' countries @Biovoices- impact against KPI

7.2.2. Social media profiles @Biovoices

The KPIs for this activity aimed to engage 3.000 followers. At this stage of the project, this KPI has been carried out by 798 followers. Task is **on-going** (KPI pending as it was planned in the DoA) as is shown in Table 39. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

Parameter	Value
Targets to be engaged	Followers in social media profiles @Biovoices: #3.000 followers
Reached	#798 followers
Start Month	6
End Month	28
KPI Current Status	On-going

Table 39: WP3: Social media profiles @Biovoices- impact against KPI

7.2.3. Online mutual learning workshop

This activity will be implemented at the end of 2024. Please refer to D3.1 for detailed plan. Its state is **planned**.

7.2.4. GenB Ambassadors hosted in 5 events

The KPIs for this activity aimed to engage 5 GenB Ambassadors hosted in 5 events. At this stage of the project, this KPI has been carried out by 5 GenB Ambassadors hosting in 3 events. Task is **on-going**, as indicated in Table 40. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

Parameter	Value
Targets to be engaged	#5 GenB Ambassadors hosted in #5 events
Reached	#8 GenB Ambassadors hosted in #4 events
Start Month	6
End Month	28
KPI Current Status	On-going

Table 40: WP3: GenB Ambassadors hosted in 5 events - impact against KPI

7.3. Task 3.3 Support the GenB Ambassadors to take a role

In Task 3.3, the following events were identified:

- "GenB driving the transition" International Competition
- GenB Ambassadors engaged in promotional activities as "Students2Students" testimonials
- Social media campaigns by green-sensitive
- Young journalists publishing on GenB

7.3.1. GenB International Competition

This activity will be implemented in the second half of the project, and it will be launched in autumn 2024. So, the state is **planned**. Please refer to D3.1 for detailed plan. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

7.3.2. GenB Ambassadors engaged in promotional activities as "Students2Students" testimonials

This KPI is divided into two parts. Firstly, 10 GenB ambassadors need to be recruited to carry out promotional activities. At this stage of the project, the KPI is 99, and it has been successfully achieved. Secondly, 3.000 direct views and 5.000 indirect views need to be achieved. At this stage of the project, this KPI has been carried out by 3.750 direct views and 6.250 indirect views. **The KPIs has been successfully achieved**, as indicated in Table 41.

Parameter	Value
Targets to be engaged	#10 GenB Ambassadors engaged; #3.000 views, #5.000 indirect (e.g. families)
Reached	#102 Ambassadors engaged* ~ #3.750 views** ~ #6.250 indirect***
Start Month	6
End Month	28
KPI Current Status	Achieved
<p>*2 of these 102 Ambassadors were engaged in more than one activity. **people directly reached by GenB Ambassadors activity. ***estimated considering the "multiplier" effect of the people reached.</p>	

Table 41. WP3: GenB Ambassadors engaged in promotional activities- impact against KPI

7.3.3. Social media campaigns by green sensitive influencers

The campaigns designed in this reporting period will be produced and launched according to a plan that will be scheduled in the next months. Task is **on-going**, as indicated in Table 42. The KPI has not yet been met in this period of the project, as the deadline to complete it is 28/02/2025 (KPI pending as it was planned in the DoA). No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

Parameter	Value
Targets to be engaged	#3 social media campaigns involving GenB Ambassadors reaching #50.000 views
Reached	# views not available yet
Start Month	6
End Month	28
KPI Current Status	On-going

Table 42. WP3: Social media campaigns by greensensitive - impact against KPI

7.3.4. Young journalists publishing on GenB

The KPIs for this activity aimed to engage 8 environmental young journalists. At this stage of the project, this KPI has been carried out by 3 GenB Ambassadors involved as environmental young journalists. In this case, three GenB Ambassadors were already activated as journalists in the context of the Italian Bioeconomy Changemakers Festival. The task is **on-going**, as indicated in Table 43. No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

Parameter	Value
Targets to be engaged	#8 environmental young journalist
Reached	#3 GenB Ambassadors involved as environmental young journalist
Start Month	6
End Month	28
KPI Current Status	On-going

Table 43. WP3: Young journalists publishing on GenB - impact against KPI

7.4. Task 3.4 European Youth forum on bioeconomy

In Task 3.4, the activities have not been carried out yet. They are **planned** for the next period of the project. The KPI has not yet been met in this period of the project, the deadline to complete it is 28/02/2025 (KPI pending as it was planned in the DoA).

The collaboration with the European Commission Bioeconomy Youth Ambassadors and the Bioeconomy Youth Champions has a great potential, but the continuous update among the projects is needed. Since the BYA mandate is getting closer to its conclusion, GenB will cooperate with them to disseminate and promote their outcomes. In case the European Commission will launch a second mandate, the project will fully support this activity also by engaging present (and eventually future) BYA in the following activities:

- Participate to #3 thematic online debates on topics relevant for young people (T3.4)
- Participate to cross-contamination online workshop (T3.4)
- Participate to “Our GenB future” international online workshop (T3.4)

7.5. Summary table of Specific Objective 4

Task	KPI Current Status
Young multipliers engaged to play as frontrunners	On-going
Young career testimonials	On-going
Green sensitive young influencers and activists	Achieved, expectations exceeded
Environmental young journalists engaged (1 per country per type)	On-going
“GenB in Action” recruitment campaign	Achieved, expectations exceeded
Capacity building webinars	On-going
Social media profiles	On-going
GenB Ambassadors hosted in 5 events, conferences, other youth groups meeting	On-going
Online mutual learning workshop	Planning Stage

Task	KPI Current Status
GenB driving the transition" International Competition	Planning Stage
GenB Ambassadors engaged in promotional activities as "Students2Students" testimonials	Achieved with additional efforts planned
Social media campaigns by greensensitive	On-going
Young journalists publishing on GenB	On-going
Thematic online debates on topics relevant for young people	Planning Stage
Cross-contamination online workshop	Planning Stage
"Our GenB future" international online workshop	Planning Stage

Table 44. Summary table SO4

No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

8. Review of the Specific Objective 5 and Specific Objective 6

According to the DoA, the SO5 is to maximise the project's impacts towards behavioural and socio-economic changes by sparking multipliers and GenB networks and ensuring exploitation, replicability and sustainability of project's outcomes and the SO6 contribute to the Destination 'Innovative governance, environmental observations and digital solutions in support of the Green Deal' by supporting the public Administrations and schools in the implementation of initiatives promoting the green transition process.

These two objectives are evaluated together because they have a common impact: contribute to the Destination 'Innovative governance, environmental observations and digital solutions in support of the Green Deal' by supporting the public administrations and schools in the implementation of initiatives promoting the green transition process.

To fulfil these objectives, GenB defines measurable, verifiable, realistic and achievable KPIs. In this case, the following KPIs from WP4, specifically T4.2 and T4.3 are taken into account. Also, the following KPIs from WP5, specifically T5.2 is taken into account.

The specific Tasks to achieve the specific objectives are the following:

- Task 4.2 GenB Education Model
- Task 4.3 Ministries of Education policy recommendations
- Task 5.2 Ecosystem building

The subsequent sections within Section 8 delineate the comparison between the KPIs under scrutiny and the corresponding accomplishments. Furthermore, anticipated completion dates are furnished for those activities that are not yet finalized.

8.1. Task 4.2 GenB education model and Task 4.3 Ministries of education policy recommendations

In Task 4.2 GenB education model and Task 4.3 Ministries of Education policy recommendations the activities have not been carried out yet because this task starts in M18. They are **planned** for the next period of the project. The KPI has not yet been met in this period of the project, as the deadline to complete it is the M30 (KPI pending as it was planned in the DoA).

8.2. Task 5.2 Ecosystem Building

In Task 5.2, the following expected results are identified:

- Projects and initiatives engaged in collaboration
- #2 Online mobilisation and Mutual learning workshops in bioeconomy education

8.2.1. Projects and initiatives engaged in collaboration

The KPI has been successfully completed, as indicated in Table 45.

Parameter	Value
Targets to be engaged	#6 projects and initiatives engaged in collaboration
Reached	#6 projects and initiatives engaged in collaboration
Start Month	1
End Month	30
KPI Current Status	Achieved

Table 45. WP5:"Ecosystem Building" - impact against KPI

8.2.2. Online mobilisation and mutual learning workshops in bioeconomy education

One workshop has been already organised. The second one is **planned** for the next period of the project. Task is on-going. The KPI has not yet been met in this period of the project, as the deadline to complete it is 28th February 2025 (KPI pending as it was planned in the DoA).

Parameter	Value
Targets to be engaged	#2 Online mobilisation and mutual learning
Reached	#1 Online mobilisation and mutual learning
Start Month	1
End Month	30
KPI Current Status	In progress

Table 46. WP5:"Online mobilisation and mutual learning workshops" - impact against KPI

8.3. Summary table of Specific Objective 5 and Specific Objective 6

Task	KPI Current Status
Online mobilisation and mutual learning	#1 organised
Online mobilisation and mutual learning	#1 Planned
Factsheet with GenB educational model	Planned Stage
Ministries of Education	Planned Stage
Policy Recommendations	Planned Stage
Online mobilisation and mutual learning workshops	Planned Stage
Projects and initiatives engaged in collaboration	Achieved

Table 47. Summary table SO5

No issues are expected in meeting the KPI within the specified timeframe as outlined in the DoA, with the latest deadline set for February 28, 2025.

9. Review of the Dissemination and Communication Activities

GenB defines measurable, verifiable, realistic, and achievable KPIs. In this case, the following KPIs from WP5, specifically T5.1 is taken into account.

The subsequent sections within Section 9 delineate the comparison between the KPIs under scrutiny and the corresponding accomplishments. Furthermore, anticipated completion dates are furnished for those activities that are not yet finalized.

9.1. Task 5.1 Dissemination and Communication Plan and Activities

In Task 5.1, the following actions were identified:

- Brand Identity Kit: Logo & Templates
- GenB Website

9.1.1. Brand Identity Kit: Logo & Templates

The KPI has been successfully completed, as shown in Table 48.

Parameter	Value
Targets to be engaged	#1 Brand Identity Kit: Logo & Templates
Reached	#1 Brand Identity Kit: Logo & Templates
Start Month	1
End Month	30
KPI Current Status	Achieved

Table 48. WP5: Brand Identity: Logo & Templates - impact against KPI

9.1.2. GenB Website

All the KPIs has been successfully completed, as shown in Table 49.

Parameter	Value
Targets to be engaged	#1 Website, #3.000 visits, #25 countries reached
Reached	#1 Website, #9.730 visits, 27 countries reached
Start Month	1
End Month	30
KPI Current Status	Achieved

Table 49: WP5: Brand Identity: Logo & Templates - impact against KPI

9.1.3. Flyers/Posters/Roll-ups

The KPI for the creation of flyers, posters, and distribution of flyers has been completed satisfactorily (Table 53). About the KPI of roll-ups has not yet been met in this period of the project, although the deadline to complete it is 30/04/2025. Task in **on-going** (KPI pending as it was planned in the DoA).

Parameter	Value
Targets to be engaged	#2 flyers, #2 roll-ups, #2 posters, #500 flyers distributed
Reached	#3 flyers, #1 roll-ups, #8 posters, 5000 flyers distributed
Start Month	1
End Month	30
KPI Current Status	Posters, flyers and flyers distribution: Achieved
	Roll-ups: On-going

Table 50. WP5: Flyers, posters & roll-ups - Impact against KPI

9.1.4. Infographics

All the KPIs has been successfully completed, as shown in Table 51.

Parameter	Value
Targets to be engaged	>10 promotional banners, >6 infographics, Booklet#1 GenB Policy recommendations for Ministries of Education, Booklet#1 "Our GenB future" recommendations "Youth2Policy"
Reached	#40 promotional banners, #6 infographics, #3 booklets produced, 3 booklets produced.
Start Month	1
End Month	30
KPI Current Status	Achieved

Table 51. Infographics - impact against KPI

9.1.5. Multimedia material

The KPI for the creation of 1 GenB promotional video and 2 video teasers has been completed satisfactorily. About the KPI of educational video has not yet been met in this period of the project, although the deadline to complete it is April 30th 2025. Task is **on-going** (KPI pending as it was planned in the DoA), as shown Table 52.

Parameter	Value
Targets to be engaged	#1 GenB promotional video, #2 video teasers, #1 educational video
Reached	#1 GenB promotional video, #2 video teasers, #0 educational video
Start Month	1
End Month	30
KPI Current Status	Promotional video and video-teasers: Achieved
	Educational video: On-going

Table 52: Multimedia material - impact against KPI

9.1.6. Conference and events

The KPI of >10 speeches at events and conferences (19) and > 1 publication (2) have been completed satisfactorily. The KPI related to the final event has not been met in this period of the project, the deadline to complete it is 30/04/2025. Task is **on-going**, as shown in Table 53 (KPI pending as it was planned in the DoA).

Parameter	Value
Targets to be engaged	> 10 speeches at events and conferences (live and online), >1 publication, #1 Final event
Reached	#19 speeches at events and conferences (live and online), #2 publication, #0 Final event
Start Month	1
End Month	30
KPI Current Status	Speeches and publication: Achieved
	Final event: On-going

Table 53. WP5: Conference and events - impact against KPI

9.1.7. Email, Newsletters and Press release

The KPI of #4 newsletters has been completed satisfactorily (6). About the KPIs of email campaigns and press releases has not yet been met in this period of the project, although the deadline to complete it is 30/04/2025. Task is **on-going** (KPI pending as it was planned in the DoA), as shown in Table 54.

Parameter	Value
Targets to be engaged	#40 email campaigns, >4 Newsletters, >4 press releases
Reached	#10 email campaigns, #6 Newsletters, #2 press releases
Start Month	1

Parameter	Value
End Month	30
KPI Current Status	Newsletter: Achieved
	Email Campaigns and press release: On-going

Table 54. WP5: Email, newsletters and press release - impact against KPI

10. Key Impact pathways

As described in the DoA, GenB is expected to contribute to the following impacts (Figure 1):

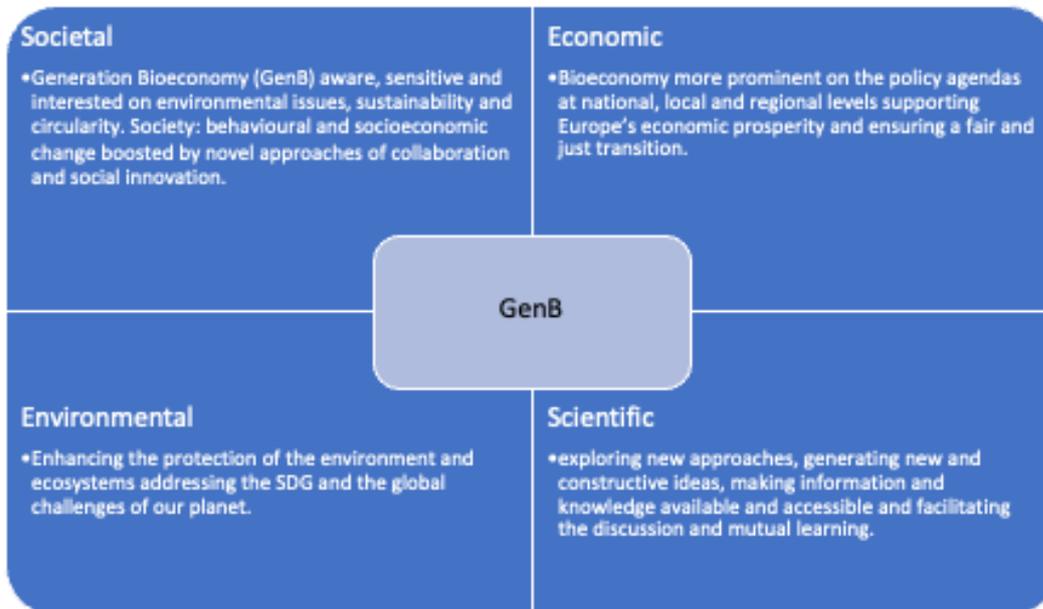


Figure 1. Expected impact of the GenB project

In D4.1, the methodology and theory to be utilized for measuring the social, economic, and scientific impact were presented. Deliverable 4.2 assesses the status of the KPIs by the end of the first reporting period.

Going beyond the attainment of KPIs and the realization of anticipated effects on project beneficiaries and stakeholders, the GenB initiative aims to inspire and encourage youth and future generations to be aware, sensitive and interested on environmental issues, sustainability and circularity. In doing so, the project seeks to foster a sense of responsibility towards the planet and empower individuals to contribute positively to the preservation of natural resources and the promotion of a sustainable way of life.

10.1. Societal impact

The expected societal impact is related to the citizens, especially children and youth achieving “behavioural and socioeconomic change boosted by novel approaches of collaboration and social innovation” (Section 2.2 of DoA). At this point, the main progress of GenB towards this impact lies on implementing specific activities under WP1, WP2 and WP3 such as Common Ground Camp, Focus Groups, Living Labs, Hands-on and GenB Ambassador Programme.

For measuring the societal impact three aspects are identified: 1. Co-creation with citizens, 2. Engagement of European Citizens, 3. Societal R&I uptake.

1. Co-Creation with citizens (short term): by accomplishing the KPIs and SOs of each task in the project, many European Union (EU) citizens, especially youngsters, actively

participating in the projects' activities are expected to be reached. Data and values for this indicator are being gathered based on the opportunities and methods provided by the projects' activities that are expected to boost a change based on collaboration and social innovation.

A list of the different actions carried out in the first period to boost this impact is presented below (these actions will be further increased by the end of the project):

- GenB Common Ground Camp: 121 participants (WP1)
- Focus Group: 910 participants (WP1)
- Living Labs: 500 participants (WP1)
- Hands-on labs: 1.529 participants (WP2)
- Role-Play Game: 73 participants (WP2)
- TEDx pitches: 130 participants (WP2)
- Bioeconomy careers infodays: 234 participants (WP2)
- Educational activities using the toolkits: 663 participants (WP2)
- Bioeconomy talks/seminars inquiry-based learning: 3.246 participants (WP2)
- Online bio educational village: 6.000 participants (WP2)
- Individual meetings: 1.000 multipliers and 1.200 young people (WP2)

At this point in the project, the social impact regarding co-creation with citizens involves more than 15.000 individuals, of which nearly 90% are youngsters.

2. Engagement (medium term) of European Citizens: the engagement of European citizens within the processes and outcomes of this project is of high relevance. Mechanisms to facilitate citizen active engagement are being proposed, considering interest and relevance of the target group. The objective is to make an impact on future generations, and increase their awareness, sensitivity and interest on environmental issues, sustainability and circularity of the process.

A list of the different actions carried out in the first period to boost this impact is presented below (these actions will be increased until the end of the project)

- Schools project's to grow future entrepreneurs: 6.000 persons reached (WP2)
- A day in a biorefinery: 50 participants (WP2)
- "What's bioeconomy" MOOC, GenB Toolkits, Bioeconomy Job Profiles: 250 teachers and 5000 indirect participants (WP2)
- Informative webinar in partners' countries: 50 multipliers and 700 indirect participants (WP2)
- Young Multipliers engaged to play as frontrunners: 16 multipliers to play as frontrunners (WP3)
- Young career testimonial: 4 GenB Ambassadors engaged as career testimonial (WP3)
- Green sensitive young influencers and activist: 100 activists (WP3)
- Environmental young journalist engaged: 3 GenB Ambassadors involved as environmental young journalist (WP3)

- Capacity building webinars: 219 ambassadors empowered (WP3)
- GenB Ambassadors engaged in promotional activities as “Students2students” testimonial: 99 ambassadors engaged 3.000 views and 6.250 indirect persons. (WP3)
- GenB Ambassadors hosted in 5 events: 8 GenB Ambassadors hosted (WP3)

In order to facilitate active participation and increase the impact on future generations regarding environmental issues and sustainability, the GenB project has reached over 7.500 young people to assume roles as GenB Ambassadors, activists, and future entrepreneurs.

3. Societal R&I (large impact): The estimation of this impact requires the finalization of all GenB activities. Currently, specific questionnaires for evaluating the level of appealing and increased knowledge by each GenB activity are being developed. This information will be used in the next deliverable to estimate the impact of GenB project in children from 4 to 19 y.o.

European population aged between 4 and 19 years.	
AGE	POPULATION
4	4.313.370
5	4.429.315
6	4.502.674
7	4.503.445
8	4.551.025
9	4.509.093
10	4.631.283
11	4.646.542
12	4.799.867
13	4.814.196
14	4.865.231
15	4.766.947
16	4.737.012
17	4.692.335
18	4.692.863
19	4.665.570
Total European Population 4-19 y.o	74.120.768
Total European Population	448.753.523
% European Population 4-19 y.o	16,52%

Figure 2. European population age between 4 and 19 years old.

SOURCE: EUROSTAT 2024 - https://ec.europa.eu/eurostat/databrowser/view/DEMO_PJAN_CUSTOM_11335848/default/table?lang=en.

According to Eurostat (see Figure 2), there are a total of 74.120.768 children from 4 to 19 y.o. in Europe, being the 16.5% of the total population. The GenB societal large impact will be determined by the following variables:

- Children & Youth European population (EUcy)
- Reach level (R): Percentage of children and youth from 4 to 19 y.o. that will be reached during the three years after GenB project conclusion. Being a percentage of the total 74.120.765 children and youth population.

- Level of appealing and engagement (A): The level of appealing of each GenB output that will influence on the children engagement on the activity. This number will be obtained based on the results of the evaluation questionnaires.
- Level of Knowledge increased (K): The educational value of each activity that will influence on promoting behavioural and socio-economic changes to more sustainable ones. This indicator will be obtained based on the results of the evaluation questionnaires.

GenB Social R&I impact =EUcy*R*A*K (of each GenB activity)

10.2. Scientific impact

The expected scientific impact of GenB is related to *“making the information and knowledge available and accessible, facilitating the discussion and mutual learning”*. For this purpose, new approaches and ideas are being explored and generated. In order to make the scientific knowledge more accessible and available, the following scientific content have been carried out during this period:

- Publication and academic results (short-term):
 - GenB Library launched and updated
 - Upload 1.022 contents in the GenB Library
 - Scientific articles: 3 scientific articles written (detailed information could be consulted below)

Castellari, M., Mentini, L., Pocaterra, C., & Jurkiewicz, K. (2024). Addressing environmental challenges through innovative and engaging education approaches: Insights from Horizon Europe projects. In ICERI2024 Proceedings. Retrieved from [in progress].

Mentini, L. (2023). Preparing students to be agents of change through active and experiential learning activities: Examples from Horizon Europe projects. In ICERI2023 Proceedings. Retrieved from [<https://library.iated.org/view/MENTINI2023PRE>].

Pocaterra, C. (2023). Development of new approaches to bring research and research results to the large public through education and engagement. In ICERI2023 Proceedings. Retrieved from [<https://library.iated.org/view/POCATERRA2023DEV>].

10.3. Economic impact

With regards to the economic impact - related to the *Bioeconomy being more prominent on the policy agendas at national, local and regional levels supporting Europe’s economic prosperity and ensuring a fair and just transition*, the main activities contributing to this impact are focused on transforming the GenB educational model into stakeholder-oriented (education communities, Ministries of Education, policy makers) actionable knowledge (T4.2); supporting the modernisation of the governance by making information and knowledge available and accessible to policy makers (T4.3). In the second phase of the project, the following activities are planned: #1 “Our GenB future” Youth2Policy recommendations; #1 set of policy recommendations for Ministries of Education; #1 Ministries of Education (online) requirements

workshop; #1 Ministries of Education (online) recommendations workshop; #8 online mobilization and mutual learning workshops; and #1 factsheet with the GenB educational model. Therefore, the results will be described in the final report, D4.3.

10.4. Environmental impact

The environmental impact of GenB project - *enhancing the protection of the environment and ecosystems addressing the SDG and the global challenges of our planet* will be estimated based on the evaluation questionnaires, specifically considering the question: "I try to apply the knowledge gained (about bioeconomy and sustainability) in the activity, that are being carried out for each GenB output and activity. The environmental impact is closely intertwined with the social, economic, and scientific impacts. For instance, enhancing public awareness about bioeconomy indirectly yields a positive environmental impact. Economically, policymaker awareness regarding bioeconomy significance may lead to policies promoting bioeconomy education for youth, thereby indirectly fostering positive social impact. Lastly, an increased corpus of scientific literature on the subject facilitates broader dissemination of knowledge, thereby indirectly affecting the environment.

The environmental impact assessment of a tangible product, prototype of technology is based on clear and measurable criteria and methodologies, like the amount of material used, CO₂ emissions and waste reduction. In these cases, methodologies like 1) ISO 14040, "Environmental management — Life cycle assessment — Principles and framework" or 2) "Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (ISO 14064-1:2018)" can be applied.

In GenB Project, the environmental impact assessment will be focused on changes on increasing consumer knowledge about bioeconomy to affect to their interests, attitudes, and behaviors, increasing their awareness about the importance of the bioeconomy.

The calculation of the environmental impact of these types of outputs will be presented in D.4.3., when all the activities and assessments will be finished. And will be obtained through the application of social research techniques.

It is important to point out the difference between social and environmental impact. Social assessment will be related with the number of users that GenB project will affect, meanwhile the environmental impact will be related with effects that these changes on consumers' behaviors will have on the environment.

The different methodologies that will be used to estimate the environmental impact are presented below:

1. Pre and post evaluation activities questionnaires to users. To collect information about the knowledge increased, applications on their daily life and changes on their current and future habits.
2. Qualitative feedback from partners and experts, through deep interviews, observations and/or focus groups.

3. Case studies, success stories. Qualitative and deeper analysis about specific user cases when a positive behavioral change has been observed.
4. Follow up surveys with users (For outputs like the educational toolkits)

All this information will be complemented with Calculator Footprint¹, that estimates the consumer footprint and environmental impact based on their behaviours, analysing how a change on their lifestyles can modify their personal impact. This tool analyses the product lifecycle and energy consumption in five specific areas (food, mobility, home, electrical appliance, and goods), and establishes 16 environmental impact indicators related to the use of natural resources. These indicators are the ones adopted by the European Commission to calculate environmental impacts of products and organisations.

¹ <https://calculatuhuella.consumo.gob.es/>

11. Impact assessment

In this section of the impact assessment, the levels of understanding and satisfaction regarding the following GenB activities are analysed:

- Hands-on labs and playful activities (WP2)
- Bioeconomy Village at large scale events (WP2)
- BioArt Gallery (WP2)
- Role-play game on bioeconomy jobs in schools (WP2)
- TEDx pitches (WP2)
- Bioeconomy careers infodays (WP2)
- Educational activities using the toolkits (WP2)
- Informative webinar in partners countries (WP2)

These activities are being analysed exclusively because they are the ones where the questionnaire has been implemented at this stage of the project. In the subsequent project period, the questionnaire will be implemented in more activities.

Considering the different age ranges and the education background, AIJU, PEDAL and APRE decided to assess only the impact of the GenB activities on the final beneficiaries: teachers, students and GenB Ambassadors. For the multipliers, GenB limits the monitoring to the KPIs reached.

The degree of understanding and satisfaction will be assessed through post-activity evaluation questionnaires. Due to the diverse and heterogeneous nature of the activities, AIJU is adapting the evaluation questionnaires considering partners suggestions but always applying a minimum number of questions related to SOLO taxonomy, Bloom Taxonomy and Badau & Badau (2018) to guarantee the comparability of the data. Satisfaction questionnaires may also undergo modifications to enhance their efficiency, facilitating applicability across all partners. The analysis is carrying on as follows:

- **Teachers**, the responsible Partner sends the post-activity questionnaire to the teachers who fill in on their behalf (when the activity is aimed at them) and/or on behalf of their **students depending on the context**.
- **Students of the early and elementary schools**, each Partner assesses the impact through the “Bioeconomical Investigator's Notebook” that AIJU prepared.
- **Students of high schools**, the responsible Partners sends the post-activity questionnaire to the students when the activity is aimed at them.
- **GenB Ambassadors**, we will send the post-activity questionnaire after the activities where they have participated.

In D4.3, corresponding to the end of the project and with all activities already completed, a comprehensive analysis of relevant questions will be conducted.

11.1. Questionnaires for GenB activities

The evaluation questionnaires were constructed based on Solo Taxonomy methodology, Bloom Taxonomy and Badau & Badau (2018) (explained in D4.1), and two main dimensions were highlighted as core in all the activities: understanding and satisfaction. Both were considered key elements to find out how effective each activity was in 1) transmitting ideas and notions about bioeconomy and sustainability, following an informative approach, to the target groups, and 2) creating an enjoyable environment, where the acquisition of knowledge is perceived as useful by the target audience.

Based on Bloom Taxonomy, understanding would be considered as a lower-level thinking dimension, and the next step after recalling the concept. This would be considered as the primary step to acknowledge that the concept has been integrated by the participant, and hence the basic aim has been accomplished. This dimension corresponds to the foundational knowledge coined by Fink and is also identifiable with the unistructural language that is presented in SOLO. In all cases, it refers to the minimum necessary knowledge to understand the concept and build subsequent ideas upon it. The 4-item scale (Nkhoma et al., 2017) is proposed, based on one of the milestones proposed by Bloom's taxonomy, where knowledge improvement is measured.

The items are as follows:

- "The activity increases my knowledge (about bioeconomy and sustainability)"
- "I catch the basic ideas of the knowledge gained about bioeconomy and sustainability in the activity"
- "I try to apply the knowledge gained (about bioeconomy and sustainability) in the activity"
- "I am confident to bring gained (about bioeconomy and sustainability) in the activity"
- "The activity motivates me to integrate the knowledge gained (about bioeconomy and sustainability) in the activity"

The items will be measured with a 5-point Likert scale (Strongly disagree, Disagree, Neutral, Agree, Strongly agree).

In order to measure participants' satisfaction with the activity and based on the scale by Badau & Badau (2018) adapted to this research context, three items are included in the questionnaire related to each educational activity in which participants have taken part in. The items are as follows:

- "I appreciate the attractiveness of this activity" (i.e. if it was fun, entertaining, etc.)
- "I recommend of the activity to my contacts"
- "I am satisfied with this activity"

The items will be measured with a 5-point Likert scale (Strongly disagree, Disagree, Neutral, Agree, Strongly agree).

An example of the paper questionnaire can be consulted in Appendix 2 of this deliverable.

However, due to the heterogeneity of GenB activities, targets, and implementation methods, the questionnaires have been adapted to facilitate feedback collection in various contexts. For instance, it has been identified that the questionnaire may not be optimal for large-scale events where conducting such surveys is challenging. They may be modified to ensure that the analysis at the end of the project is as specific as possible.

11.2. Bioeconomical Investigator's Notebook

In order to streamline the acquisition of responses in activities aimed at the youngest target audience (pre- and early-school, 4-8 years old), AIJU has developed the Bioeconomical Investigator's Notebook (Appendix 2.3).

The tool comprises a notebook containing the questions intended for participants, which they are required to retain throughout the session in order to ultimately receive the bioeconomy expert passport. During the activities, participants filled it in.

At the end of the session, participants have the incentive to return the completed questionnaire, as they receive the Bioeconomy Expert Passport upon delivery.

By crafting this engaging narrative, attention is effectively retained among the participants, thereby enhancing their willingness to respond to the questions.

After being successfully used as evidence in an AIJU Hands-On Lab session and Role-play game session, this questionnaire format will be used whenever possible by the rest of the partners in activities related to the pre- and early school target audience, aged 4-8 years old.

11.3. Partners' feedback

In addition to the data collected from participants, partners' feedback and insights were taken into consideration in the assessment. GenB project partners as implementers of the activities obtain the first-hand experience from conducting the activities. As such, they represent an important source of data, providing valuable insights, lessons learnt, as well as recommendations on specific activities' implementation.

11.4. Progress of results - First Period

11.4.1. Methodological approach

To assess success in each activity across two dimensions: understanding and satisfaction, a comparative table has been constructed with questions related to the scientific scales mentioned earlier. For a proper interpretation of the table, a top2box analysis has been conducted by summing the two highest points on the Likert scale (Agree + Strongly Agree, High + Very High) to obtain the reference value.

Once obtained, the activities with the highest overall level of understanding and satisfaction until the date have been determined.

To understand the analysis, it is necessary to consider that:

- The expression 'n' refers to the number of participants who have satisfactorily completed the questionnaire (n = sample).
- Due to the limitation of 'n' (n = sample), data should be treated from a qualitative approach but have been standardized in percentages to facilitate understanding by the reader.
- It should be noted that data from different targets (children, adults and teachers) are compared, as the main objective is to detect activities that do not have a sufficient level of satisfaction and effectiveness, in order to improve them in time.
- The main objective is not to establish a ranking, but it provides an initial analysis of the situation in a visual manner.

In addition to that, the partners' feedback is used to obtain a qualitative insight into the activities. This analysis provides accuracy and objectivity when assessing the project's scope and outcomes, enabling the identification of trends, patterns, and key metrics for informed decision-making and a more rigorous evaluation of the activity's results.

11.4.2. GenB activities comparison analysis

At this stage, there is a high variability on the number of children interviewed for each activity that will be complemented until the end of the project. For this reason, just activity "Hands-on Lab" and "Role-play game" are shown in the next table, with an overall rating of 74% of the ten analysed variables, this can be considered as a very successful result.

The table shows the two activities ("Hands-on labs" and "Role-play game") with a sufficient sample size to conduct a detailed comparative analysis. Other activities ("Bioeconomy Village," "BioArt Gallery," "TEDx pitches," "Bioeconomy careers infodays," "Educational activities using the toolkits," "informative webinar in partners' countries") have been taken into account to calculate the overall rating of the GenB activities, but at this stage, their sample size is not sufficient to conduct an independent detailed analysis of the activity based only in numbers. However, it should be noted that based on the data obtained, the activities seem to have a good response, but this needs to be confirmed in the next period of the project.

Nonetheless, the following section provides a qualitative analysis of these activities, including the feedback collected by the partners during the activity, with the indications provided by the limited data collected (Figure 3).

	n=60	n=50
	Task 2.1	Task 2.2
DATA SUMMARY	"Hands-on labs" and playful activities	"Role-play game" on bioeconomy jobs in schools
The session has increased my knowledge about bioeconomy	83%	85%
I understand the basic ideas of knowledge taught about bioeconomy	70%	73%
I will try to apply the knowledge learned in my daily life	72%	73%
The activity were interesting and fun	97%	100%
I would recommend similar activity	91%	94%
Do you know or have you heard of the concept of sustainability?	69%	69%
Do you know or have you heard of the concept of bioeconomy?	75%	75%
I am aware of the impact of bioeconomy on the world around us	63%	63%
When I'm older, I would like to work in something related to bioeconomy	46%	46%
I'm interested in learning about bioeconomy	75%	75%
Overall rating per activity	74%	75%
Overall rating of GenB activities	74%	

Figure 3. Rating of GenB activities

11.4.3. General GenB Activities

The data per question will now be analysed by aggregating all participants from the GenB activities. This approach enables to gain a comprehensive understanding of the effectiveness of the activities and to identify both strengths and areas for improvement.

Firstly, it is worth noting that "n" represents the number of people who have answered the question. In this case, three different "n" values can be observed: n=169 with a sample error of +- 7.54%; n=142 with a sample error of +- 8.22%; and n=110 with a sample error of +-9.34%. Therefore, a combined analysis of all questions in a quantitative manner can be conducted.

Table 55 and Figure 4 show the satisfaction results obtained for each statement.

DATA SUMMARY	General GenB Activities
The activity were interesting and fun (n=169)	91%
I would recommend similar activity (n=169)	85%
The session has increased my knowledge about bioeconomy (n=169)	82%
I'm interested in learning about bioeconomy (n=110)	75%
I will try to apply the knowledge learned in my daily life (n=169)	75%
I understand the basic ideas of knowledge taught about bioeconomy (n=169)	74%
Do you know or have you heard of the concept of bioeconomy? (n=142)	71%
Do you know or have you heard of the concept of sustainability? (n=142)	68%
I am aware of the impact of bioeconomy on the world around us (n=110)	63%
When I'm older, I would like to work in something related to bioeconomy (n=110)	46%

Table 55. Data per question for the overall of GenB activities.



Figure 4. Ranking of GenB Activities Questions

The following aspects can be highlighted about GenB activities:

1. With very high level of appeal, they are fun and entertaining activities (91%).
2. With very high/high level of appeal, GenB activities are recommendable (85%) and increase knowledge about bioeconomy (82%).
3. With high level appeal, participants try to apply the knowledge learned in their daily life (75%), are interested in learning more about bioeconomy (75%), understand the basic ideas about bioeconomy (74%), and know or have heard about the concept of bioeconomy (71%).
4. With moderately high level of appeal, participants know or have heard about the concept of sustainability (68%) and are aware of the impact of bioeconomy on the world around us (63%).
5. With moderate level of appeal, participants would like to work on something related to bioeconomy (46%).

Strengths: The activities are fun and interesting, so much so that they have a high percentage of recommendation to others. Participants' first introduction to bioeconomy is satisfactory, with a good understanding of the basic ideas and a feeling of learning.

Areas for improvement: Development of simpler questionnaires to administer and answer to achieve a larger sample size. The data related to working in something related to the bioeconomy may seem low, but within a context where there is competition with professions that are highly aspirational, especially for children (streamers/YouTubers, elite athletes, astronauts, etc.), and in the case of adults, most have their professional careers established in a specific field, making it difficult to change something that is so stable within a higher percentage.

Now, to delve into the results, an analysis by activity is presented below:

11.4.4. Hands-on labs and playful activities

Partners feedback

From a qualitative standpoint, partners have provided their feedback on the Hands-On Lab activity:

- During the activity, it is observed that younger children (7/8 y.o.) enjoy the process of conducting the experiment without delving deeply into why a particular result is

obtained. However, older children (8-9 y.o.), in addition to enjoying the activity, show interest in understanding the reasons behind the results. The older ones grasp the concept of bioeconomy from an economic perspective, offering business ideas and applications for biological products and renewable energies.

Data analysis based on participants responses

The questionnaire for this activity has been completed by n=60 participants, making its results the most reliable, allowing for a qualitative analysis. Within this activity, it stands out that 57/60 (95%) rated it as interesting and fun, 54/60 (90%) would recommend this activity or a similar one, and 50/60 (83%) claim it has increased their knowledge in bioeconomy. On the other hand, what has least stood out within the activity is the motivation to work on something related to bioeconomy in the future 28/60 (47%) and the knowledge of the impact of bioeconomy on the world around us 38/60 (63%).

11.4.5. Bioeconomy Village at large scale events and BioArt Gallery

Partners feedback

Given the nature of a large-scale events, it has been challenging to obtain direct feedback from participants both qualitatively and in terms of the number of responses on the questionnaires. In the next stage, the approach to data collection will be adjusted (simplified) to ensure provision of participants' feedback.

The feedback from partners regarding the activity is as follows:

- The format is successful. It is able to attract audiences from different target groups thanks to the exhibition. However, combining this format with other interactive activities would be ideal. The impact is to provide students with immediate information and tangible materials they can refer to when learning about bioeconomy.
- This format provides participants with very clear notions about the application of bioeconomy in day-to-day life.

Data analysis based on participants responses

The questionnaire for this activity has been completed by n=8 participants, so the analysis is conducted from a qualitative perspective. These two activities were carried out in the same session, so they should be interpreted from a common standpoint. It should be noted that, although the number of respondents is low, the activities have obtained a moderately good overall rating. From a qualitative point of view, is not possible to highlight any specific area, as all activities are within a medium/high attractiveness range of between 50% and 60%.

11.4.6. Role-play game on bioeconomy jobs in schools

Partners feedback

From a qualitative standpoint, partners have provided their feedback on the Role-play game activity:

- The game is engaging and enjoyable. This assessment is related to the scientific literature of Badau & Badau (2018) used for conducting quantitative questionnaires.

- Teaching through gameplay represents a highly effective methodology that promotes participation and experiential learning.
- It would be advisable to clarify the game rules further to enhance its appeal.
- Considering the inclusion of a pairs mode (+2 players) would be beneficial.

Data analysis based on participants responses

This activity has an n=50 participants, providing a qualitative perspective. This activity stands out for being fun and interesting for 50/50 participants (100%) and recommended for others for 47/50 participants (94%). However, only 23/50 (46%) of the participants would like to work on something related to bioeconomy, and 32/50 (64%) are aware of the impact of bioeconomy on the world around us.

11.4.7. TEDx pitches

Partners feedback

From a qualitative standpoint, partners have provided their feedback on the TEDx pitches activity:

- Presentations are essential for the successful operation of this format.
- Providing support to Gen Ambassadors to deliver impactful presentations is crucial.

Data Analysis based on participants responses

This activity has an n=14 participants, so a qualitative analysis will be conducted. In this activity, understanding of basic ideas about bioeconomy (13/14 participants) and the perception of it being a fun and interesting activity (12/14 participants) stand out. However, the activity should focus more on delving into advanced concepts of bioeconomy, as only 8/14 participants have increased their knowledge about bioeconomy.

11.4.8. Bioeconomy careers infodays

Partners feedback

From a qualitative standpoint, partners have provided their feedback on the Bioeconomy careers infodays activity:

- Through the participation of young speakers, the students familiarised with the different sectors of the green jobs.
- Focusing on individuals at critical decision points in their education or career paths is more impactful.
- The probability that the young participants make career choice in bioeconomy fields looks increased based on the information received.
- Younger students showed less engagement during some speakers' presentations, particularly the more technical ones. Students would like to hear about experiences that they found familiar.

Data Analysis based on participants responses

This activity has an n=11, so a qualitative analysis of the data will be conducted. This has been the activity that, adhering to quantitative data, obtained the highest overall rating (10/11 participants). Additionally, the questions asked about bioeconomy have achieved 100%

acceptance. The activity also has a high appeal in relation to interest and fun (9/11 participants) and would also be recommended (9/11 participants).

11.4.9. Educational activities using the toolkits

Partners feedback

From a qualitative standpoint, partners have provided their feedback on the Educational Activities using the toolkits:

- The activity enhances understanding of bioeconomy.
- Teachers grasp how to apply bioeconomy concepts in their curricula to convey knowledge to their pupils.
- These moments are particularly satisfying when teachers are directly presented with material and have the opportunity to delve deeper, discussing and sharing possible teaching applications with their peers.

Data analysis based on participants responses

This activity has an n=15 so a qualitative analysis has been performed. In this activity, participants were asked in the form of a pretest if they knew or had heard of the concept of bioeconomy, to which 9/15 participants responded affirmatively. It is highlighted that 13/15 of the participants believe that the session has increased their knowledge about bioeconomy. 12/15 participants have understood the basic ideas of knowledge taught about bioeconomy, and also 12/15 participants will try to apply the knowledge learned in their daily life.

11.4.10. Informative webinar in partners countries

Partners feedback

From a qualitative standpoint, partners have provided their feedback on the Informative webinar in partners' countries:

- Challenge faced by non-formal and informal educators in their efforts to collaborate with schools.
- Importance of fostering and improving collaborations with formal education institutions and creating specific programs for schools.

Data analysis based on participants responses

With an n=3 for this activity, a qualitative analysis will be undertaken. It is observed that all participants have enhanced their understanding of bioeconomy concepts and aim to integrate them into their daily lives. However, it's important to highlight that the small sample size limits the reliability of the findings. Therefore, a more robust analysis will be conducted in the next period.

12. Best Practice Guide

Some practices have been identified that have increased the effectiveness of impact in GenB activities, resulting in particularly successful outcomes. The final version of the best practices will be shown in D4.3, which coincides with the end of the project.

The current best practices are listed below:

- Engaging in interactive activities helps young people step out of their comfort zones and emerge as leaders.
- Linking activities whenever possible to a notable time of year has proven successful. For example, in a Hands-On Lab, the inclusion of a Christmas angel ornament crafting activity introduced students to the concepts of using bio-based materials, repurposing old materials, and reducing waste. This activity engaged them in a fun holiday-related activity, giving them the opportunity to create something to take home, show their parents, and hang on their Christmas tree. Additionally, some students suggested making large quantities of ornaments to sell at the school's Christmas bazaar, perfectly connecting the event with a bioeconomy activity undertaken by the students.
- Storytelling (professional testimonials) and speaker diversity are essential for inspiration and dispelling misconceptions, conveying the message that bioeconomy is a broad and interdisciplinary field accessible to anyone, not just professionals in biology, biotechnology, and STEM in general.
- Giving young people the right tools to express and communicate bioeconomy in a creative way allows them to retain the content, causing a greater impact on them. Additionally, they will play a dissemination role by sharing this information with other friends and/or family members.
- In large-scale events, delivering presentations that incorporate sensory-stimulating elements such as music and animations, while preventing the session from becoming dull, has proven to be successful in promoting debate and participation among both children and teachers.
- When an experiment is required for a GenB activity, it should be tested before its dissemination to ensure its proper functioning and to guarantee that the activity is safe and successful.
- With the creation of the Bioeconomic Investigator Notebook, AIJU achieved a 100% response rate in sessions where it was proposed for the pre and early school, and elementary school target audiences. It is key to turn unappealing tasks into friendly proposals, with fun narratives that help them engage and stay focused. It is recommended to use this tool to obtain responses in the lowest target group. This tool is useful when dealing with small group activities; it should not be used for large-scale events where tracking activity responses and proposed narrative cannot be managed.

13. Lessons learnt

This section summarizes the main lessons learnt concerning the implementation of the Impact monitoring and assessment strategy presented in D4.1.

Regarding to tracking the progress of the GenB activities, the Excel file created for impact monitoring, has been applied successfully and it was very useful to monitor the GenB project progress. The table provides a good overview of the numbers of materials developed and tested, numbers of events or participants in specific activities. This data is important as it shows the progress towards the societal, as well as scientific impacts made in the first period. As the tool was developed in the initial stage of the project, some adjustments are needed to align the table with the methodology of some task's implementation, developed after the D4.1 was created. Therefore, to further facilitate partners work, different online/virtual meetings will be scheduled by AIJU with WP leaders to update it periodically.

When it comes to the data collection tools created to assess the contribution of specific GenB activities to the expected impacts, it is possible to state the questionnaires developed by AIJU for the evaluation of the different strategies according to the scientific literature were very accurate. However, a need for an adaptation considering the different nature of GenB activities was identified. Based on the partners' feedback, several activities do not allow data collection in the form of longer, albeit methodologically more appropriate, forms. Partners' faced challenges to ensure proper data collection due to time constraints, a dynamic nature of some activities or situations where participants are exposed to numerous stimuli (e.g., in festivals, large-scale events, etc.).

Regarding this issue, the development of the "Bioeconomical Investigator's Notebook" for collecting children's feedback was considered such as success and will be implemented for the evaluation of the next GenB activities, making possible to have information and comparison about the level of appealing and increased knowledge of the different GenB activities.

14. Conclusions and next steps

The objective of this deliverable was to analyse the progress of the impact monitoring and the evaluation strategy of the activities and results of the GenB project.

As explained, D4.2 is an intermediate deliverable between D4.1 and D4.3 and its main objective was to check that all the KPIs described in the DoA, expected to contribute to the achievement of the expected impacts, are being complying with established deadlines. In case any deviation with potential effects on achieving the project's expected impacts and objectives is detected, the timely identification of the issues allows to establish a direct contact with WP leader and project coordinator to apply the mitigation measures need it.

Considering the intermediate results of the project it can be concluded that all the KPIs are being achieved according to the DoA and no issues have been detected in this intermediate evaluation stage. Minor deviations are detected within some parts of WP1 results for which an extension of the task by the end of the project is necessary (detailed explanation can be found in section 4.4. of this deliverable).

The implementation of activities contributing to the Specific Objectives 2, 3, and 4 have been progressing according to plan.

When it comes to the progress towards the GenB impact, the project tasks are being oriented to boost the impact on four different impact areas: 1. Social, 2. Economic, 3. Environmental and 4. Scientific. Although the final impact of GenB project will be presented in D.4.3 when all the outputs and assessments will be finished, giving the opportunity to calculate estimations with accurate data, some estimations have been made for this first stage.

1. **SOCIAL IMPACT**, at this stage of the project, the social impact regarding co-creation with citizens involves more than 50.000 individuals, of which nearly 90% are youngsters. Related to engagement activities, the GenB project has reached over 6.000 young people to assume roles as GenB Ambassadors, activists, and future entrepreneurs. The final impact social estimation will be calculated based on specific information related to the evaluation questionnaires (level of appealing, engagement and educational value of different GenB outputs), considering that the total number of children and youngsters from 4 to 19 y.o. who live in Europe are 74.1 million.
2. **SCIENTIFIC IMPACT**, the main outputs created to promote the scientific impact of GenB project have been the development of the GenB Library and the upload of 1.022 contents. In addition, different GenB outputs have been detected as suitable for its dissemination through scientific articles as is the case of the six educational toolkits tailored to the target beneficiaries.
3. **ECONOMIC IMPACT**, the main activities contributing to this impact are planned in the second phase of the project. Therefore, the results will be described in the final report, D4.3. Regarding GenB project main economic impact will be the promotion of the application and interest on bioeconomy. Giving more importance on how the things are produced instead of other variables like profits and revenues.

4. ENVIRONMENTAL IMPACT, the environmental impact of GenB project will be estimated based on the evaluation questionnaires that are being carried for each GenB output and activity. Meanwhile, the societal impact will estimate the number of children and youth that will change their behaviours, the environmental impact estimation will be based on the consequence of this behavioural change on children and youth.

15. Appendix 1

Figure 5 shows a screenshot of the whole table, considering all variables measured. The embedded Excel file contains the current version of the self-check global table.



KPIs_GenB_PEDAL_a
iju_AB_APRE_.xlsx

Task	Target	Expected Results	KPI	Target groups	Target Countries	Number of target groups reached	Is the KPI achievable/partner (short and	Deadline	Achievement date/Deadline accomplished	OBSERVATIONS	LESSONS LEARNED/FRECO	
1.1 Education contents	WPI	WPI1: Co-creation of innovative approaches	100% satisfaction (on a scale of 1-5) in general	500	users	10 target groups	0	NO	HSPN	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	IT			NO	HSPN	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	SK			NO	PIA	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	PT			NO	LOBA	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	SK			NO	PEDAL	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	BE			NO	EDV	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	PT			NO	ZS	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	ES			NO	ALJ	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	IT			NO	GPLAN	30/04/2024	YES	
		10 comments from at least 5 countries in general	500	users	EL			NO	FIA	30/04/2024	YES	
1.2 GenB resources Library	WPI	WPI2: GenB resources	500	users	20	0	NO	LOBA	30/04/2024	YES		
		#1.1 online library	4	groups	PT		NO	LOBA	30/04/2024	YES		
1.3 Cocreation of innovative approaches	WPI	#1 European Common General Camp	16	Participants	ES	0	NO	HSPN	30/04/2024	YES		
		#1.1 European Common General Camp	4	Participants	SK		NO	SDS	30/04/2024	YES		
		#1.2 European Common General Camp	4	Participants	PT		NO	LOBA	30/04/2024	YES		
		#1.3 European Common General Camp	4	Participants	SK		NO	PEDAL	30/04/2024	YES		
		#1.4 European Common General Camp	4	Participants	BE		NO	EDV	30/04/2024	YES		
		#1.5 European Common General Camp	4	Participants	AT		NO	ZS	30/04/2024	YES		
		#1.6 European Common General Camp	4	Participants	ES		NO	ALJ	30/04/2024	YES		
		#1.7 European Common General Camp	4	Participants	IT		NO	APRE	30/04/2024	YES		
		#1.8 European Common General Camp	4	Participants	IT		NO	GPLAN	30/04/2024	YES		
		#1.9 European Common General Camp	4	Participants	EL		NO	FIA	30/04/2024	YES		
		#1.10 European Common General Camp	4	Participants	EL		NO	HSPN	30/04/2024	YES		
		#2 Four groups	30	Young people	ES, EL, BE	0	NO	ALJ	30/04/2024	YES		
		#2.1 Four groups	20	Young people	ES		NO	ALJ	30/04/2024	YES		
		#2.2 Four groups	10	Young people	EL		NO	GPLAN	30/04/2024	YES		
		#2.3 Four groups	10	Young people	BE		NO	HSPN	30/04/2024	YES		
		#2.4 Four groups	10	Young people	BE		NO	EDV	30/04/2024	YES		
		#3 Living Labs (3 ages, 3 countries), total 27 workshops	60	Participants	AT, IT, SK	0	NO	ZS	30/04/2024	YES		
		#3.1 Living Labs (3 ages, 3 countries), total 9 workshops	60	Participants	AT		NO	ZS	30/04/2024	YES		
		#3.2 Living Labs (3 ages, 3 countries), total 9 workshops	40	Participants	IT		NO	APRE	30/04/2024	YES		

Figure 5 Self-check global table.

16. Appendix 2

Appendix 2.1 shows an example of the paper questionnaire while the figure 6 shows the questionnaire scheduled to be launched online.

Q1.1. Please indicate your opinion about the activity you have performed on a scale from 1 - strongly disagree to 5 - strongly agree.					
[Q1]	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The activity increases my knowledge about bioeconomy	1	2	3	4	5
I catch the basic ideas of the knowledge gained about bioeconomy	1	2	3	4	5
I am confident to bring bioeconomy in my classroom	1	2	3	4	5
The activity motivates me to integrate the knowledge gained about bioeconomy	1	2	3	4	5
I will try to apply the knowledge gained about bioeconomy in the activity	1	2	3	4	5

Q1.2. Please indicate your opinion about the activity you have performed on a scale from 1 - strongly disagree to 5 - strongly agree.					
[Q12]	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The activity was fun and entertaining	1	2	3	4	5
I recommend of the activity to my contacts	1	2	3	4	5
I am satisfied with this activity	1	2	3	4	5

Figure 6. Word Questionnaire

Appendix 2.2 shows an example of the electronic questionnaire (Figure 7).

Q1.1. Please indicate your opinion about the activity you have performed on a scale from 1 - strongly disagree to 5 - strongly agree.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The activity increases my knowledge about bioeconomy	<input type="radio"/>				
I catch the basic ideas of the knowledge taught about bioeconomy	<input type="radio"/>				
I am confident to bring bioeconomy in my classroom	<input type="radio"/>				
The activity motivates me to integrate the knowledge taught about bioeconomy	<input type="radio"/>				
The activity increases my knowledge about the GenB project's tools	<input type="radio"/>				
I catch the basic ideas of the knowledge taught about the GenB tools	<input type="radio"/>				
I am confident to bring GenB tools in my classroom	<input type="radio"/>				

Press the arrow to move to the next screen.

Figure 7. Electronic Questionnaire

Appendix 2.3 shows a visual example of the Bioeconomical Investigator’s Notebook (Figure 8).



Figure 8. Bioeconomical Ivenstigator’s Notebook –Form page (left) and Questionnaire (right)

Appendix 2.4 shows a visual example of the Bioeconomical Expert Passport (Figure 10).



Figure 9. Bioeconomical Expert Passport

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