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GRANT AGREEMENT NUMBER

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A.1 – European Higher Education

ENLIGHT – EUROPEAN UNIVERSITY NETWORK TO PROMOTE EQUITABLE QUALITY OF LIFE,
SUSTAINABILITY, AND GLOBAL ENGAGEMENT THROUGH HIGHER EDUCATION TRANSFORMATION

Deliverable

WP No	Del. Rel. No	Del No	Title (see SygMa list)	Lead beneficiary
WP6	D6.8	D115	Pilot cases' "narratives with numbers" and global report	UPV/EHU

Nature	Dissemination Level	Related to Del. No (if applicable)
Report	Public	D81 D79

Description (short – see SygMa list)

This document presents the results of the three pilot case studies in the form of "narratives with numbers", also named "narratives of change". The three pilot case studies and resulting narratives of change cover three major ENLIGHT action lines: ENLIGHT Challenge-based Education, ENLIGHT Mobility, ENLIGHT Regional Academies. The "narratives of change" build on the strength of both metrics and narratives (i.e. a combination of quantitative data and qualitative information) and follow the first four phases of the ENLIGHT Methodology 2.0 for the Impact Assessment of Higher Education Activities (Deliverable D81), namely: purpose setting, scope of the impact assessment, data collection and analysis, and impact assessment.

Target group

- | | |
|--|--|
| <input checked="" type="checkbox"/> students | <input checked="" type="checkbox"/> researchers |
| <input checked="" type="checkbox"/> teaching staff | <input checked="" type="checkbox"/> administrative staff |

How will the deliverable contribute to the goal of a Task, WP and the overall goals of the project?

Task	6.5 Pilot Stage Impact Assessment
	The pilot case studies have helped refining the first methodological approach and improve the toolkit for impact assessment. Following the different steps of the methodology and tools developed, the results of the three pilot case studies constitute the basis of the first ENLIGHT impact assessment presented in this deliverable. The three pilot cases studies have

	been elaborated in the form of “narrative with numbers” that builds on the strength of both metrics and narratives.
WP	WP6 ENLIGHT Impact The main objective of WP6 is to “ <i>create a comprehensive methodology and tool for measuring the long-term impact of ENLIGHT on people, communities, institutions, and systems at large</i> ”. Through the pilot case studies and resulting “narratives of change” presented in this deliverable, the ENLIGHT Impact Task Force has tested and showcased the value of the new Methodology and Toolkit 2.0 for Impact Assessment.
Project	The ENLIGHT impact assessment presented in this deliverable will be used to strategically plan the following years of ENLIGHT according to the impact generated and new expected impact. Eventually, this will help establishing impact-direct planing and management of ENLIGHT and of HE in general. The overall objective is to adapt and (re)mediate our actions so that they lead to more impact for our learners, academics, support staff, and their socio-economic environment.

What is the place of the deliverable in the Plan-Do-Check-Act cycle ?

Check

Which steps were needed to achieve the deliverables?

If applicable: please provide a Gantt chart or schematic of activities which have led to the actual deliverable.

Tasks	Activity	MILESTONES					
		Nov 20- April 21	May- Oct 21	Nov 21- April 22	May- Oct 22	Nov 22- April 23	May- Oct 22
6.1 ENLIGHT Impact Taskforce & Scope Definition	Establishment of ENLIGHT Impact Task Force	x					
	Scope Definition	x					
6.2 Development of Methodology and Tools for impact Assessment	Methodology 1.0 and Toolkit for HE Impact Assessment			x			
	Methodology 2.0 and Toolkit for HE Impact Assessment						x
6.3 Definition and implementation of pilot cases	Definition of Pilot Case Studies			x			
	Implementation of Pilot Case Studies						
6.4 Exchange and Dissemination	First ENLIGHT Impact Conference					x	
	Constitution and leadership of the FOREU2 Impact Thematic Group				x		
6.5 Pilot stage impact assessment	Pilot Cases' narratives with numbers and global report						x

Document Version Control

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INTRODUCTION

ENLIGHT and Impact

ENLIGHT is one of the 50 European University Alliances selected by the European Commission to promote a more globally competitive and attractive European Education Area and European Research Area. It is composed of 9 public research-intensive universities¹ committed to promote equitable quality of life, sustainability and global engagement through Higher Education transformation. ENLIGHT aims to undertake a *“fundamental transformation of European Higher Education that empowers learners as globally engaged citizens with state-of-the-art knowledge, skills, and innovation potential to tackle major societal transitions and to promote equitable quality of life and sustainability”*. ENLIGHT is supported by the European Commission, through Erasmus+ and Horizon 2020 programmes, as well as national and regional funding.

Impact is at the core of the ENLIGHT mission and one of the alliance’s distinctive features. As such, ENLIGHT seeks to promote an impact-based culture both within and beyond its universities, including the promotion of a model of good practice of impact-directed management and the integration of impact across higher education, research and innovation.

In order to meet this ambition, and in the context of the Erasmus+ funded project, ENLIGHT has defined as Work Package 6 (WP6) main objective the creation of *“a comprehensive methodology and tools for measuring the long-term impact of ENLIGHT on people, communities, institutions, and systems at large in such a way that the addressed and accomplished transformations may be monitored, measured and communicated transparently”*.

Pilot Stage Impact Assessment

In order to test and showcase the first methodological approach and the application of the respective tools (Task 6.2. and respective Deliverables 114 and 81), the ENLIGHT Impact Task Force has defined and implemented several pilot case studies (Task 6.3). **The pilot case studies focus on three key ENLIGHT action lines: ENLIGHT Challenge-based Education, ENLIGHT Mobility, ENLIGHT Regional Academies.**

These action lines have been selected because they are considered to be the most relevant and representative of ENLIGHT potential impact on the transformation of Higher Education (cfr. Deliverable 79, as well as section 1.2 of each case study narrative). In addition, the selection of the pilot case studies has taken into consideration the degree of involvement of affected stakeholders throughout the impact assessment exercise and the data availability for capturing relevant impact-related indicators.

These pilot case studies focus on the different initiatives undertaken across the different ENLIGHT Erasmus + Work Packages and, more specifically, in WP2/ WP3 (Challenge-based

¹ University of the Basque Country, University of Bordeaux, Comenius University Bratislava, University of Galway, Ghent University, University of Göttingen, University of Groningen, University of Tartu and Uppsala University. The University of Bern is joining the ENLIGHT alliance as a 10th university in its next phase (2023-2027).

Education), WP4 (Mobility), and WP5 (Regional Academies). Therefore, the state of advancement of the Methodology and Toolkit 2.0 has been highly interlinked with the state of implementation of other Work Packages' activities.

As proposed in Task 6.5 (pilot stage impact assessment), the results of the pilot case studies are presented in the form of a "**narrative with numbers**", also named "**narratives of change**", that builds on the strengths of both metrics and narratives (i.e. a combination of quantitative data and qualitative information).

The pilot case studies and resulting *narratives of change* follow the first four phases of the ENLIGHT Methodology 2.0 for the Impact Assessment of Higher Education Activities (Deliverable D81), namely: (1) purpose setting, (2) scope of the impact assessment, (3) data collection and analysis, and (4) impact assessment. Therefore, they are structured around the same logic and guiding principles:

1. Introduction.

- 1.1. *What is/what do we understand by the ENLIGHT action line xxx?* Description of the action line objectives and description of the activities carried out so far and related outputs. (Phase 1. Purpose setting)
- 1.2. *Why doing the Impact Assessment of the ENLIGHT action line xxx? What is intended with the Impact Assessment of the ENLIGHT action line xxx?* (Phase 1. Purpose setting)
- 1.3. *Scope of the impact assessment exercise.* Theory of change causal chain of impact and indicators development. (Phase 2. Scope of the Impact Assessment)
- 1.4. *Data collection* (Phase 3. Data collection and analysis)

2. Description of the observed outcomes and of their contribution to the desired impacts. (Phase 3. Data collection and analysis)

For each outcome, there is a table with quantitative and qualitative indicators of change/transformation and the corresponding narrative presenting the observed transformations by type of stakeholder and supported with quantitative and qualitative data/evidence.

3. Impact assessment (Phase 4)

This section highlights the most significant changes/transformations and links them with the related desired impacts as presented at section 1.3. indicating their temporality, intention, reparation capacity, intensity and extent.

The **narratives of change** of the pilot case studies Challenge-based Education, Mobility and Regional Academies are presented in the coming pages of this deliverable (pp 6-86). Following the presentation of the three narratives, we include a **general assessment of the observed**

outcomes and their contribution to the desired impact and identify the **next steps** (pp 87-88).

NARRATIVES OF CHANGE

ENLIGHT CHALLENGE-BASED EDUCATION

1. Introduction

1.1. What is/What do we understand by ENLIGHT Challenge-based Education?

Description of the action line objectives

The action line ENLIGHT Challenge-based Education represents all different models of challenge-based courses, including different organisational and course formats, as well as all supporting and interrelated activities developed in the framework of the ENLIGHT alliance to help implement them.

In ENLIGHT, Challenge-based Education (CBE) is understood as *“collaborative and hands-on teaching and learning approach, prompting students to work with peers, teachers, and experts in their communities and around the world to ask good questions, develop deeper subject area knowledge, accept and solve challenges, and share their experience”*²³. In other words, within CBE, the entire learning experience for students is centered around a real-life *challenge*. The process of finding solutions to this challenge aims to help students not only to develop deeper subject matter expertise but also to develop essential transversal skills such as creativity, collaboration and communication. The approach is highly engaging and multidisciplinary.

The driving engine behind the development of the Challenge-based Learning (CBL) pilot courses is the *ENLIGHT Think Tank*, in which educational experts, developers and academics from the 9 ENLIGHT partner universities have been mobilised around innovative course design, teaching methodology and the actual pilots of challenge-based courses. The ENLIGHT Think Tank is organised in five separate groups around the alliance’s five flagship areas of:

- Health and well-being,
- Digital revolution and impact of digitalization,
- Climate action,
- Energy transition and circular economy,
- Equity.

ENLIGHT Challenge-based Education is structurally connected with ENLIGHT Regional Academies⁴, which represent local/regional quadruple helix structures, bringing together learners, academics, business, policy-makers and civil society players around societal challenges. The ENLIGHT Regional Academies represent the forum for identifying the local/ regional challenges, and as such give input to the ENLIGHT Think Tank for designing the challenge-based learning formats.

Description of the activities carried out so far and related outputs

² Nichols & Cator, 2008.

³ You may frequently come across the term Challenge-based Learning (CBL) being used interchangeably with Challenge-based Education (CBE). The wider resources on CBE may use the term CBL instead of CBE but remain relevant for the larger purpose of designing CBE courses. The ENLIGHT Teaching and Learning team interpret CBE as an umbrella term containing both Challenge-based learning and teaching.

⁴ ENLIGHT Regional Academies is also an action line selected for a similar impact assessment exercise.

ENLIGHT Challenge-based Education is part of Work Package 2 efforts of the ENLIGHT Erasmus+ project. Upon the launch of the project, the **ENLIGHT Think Tank and Core-groups were formed and put into operation**⁵. The Think Tank core groups have identified synergies and selected the “**ENLIGHTable projects**” or pitch ideas for the timely creation of new learning opportunities together with emerging local challenges for the pilot courses⁶. In parallel, the CBE action leaders produced educational guidelines, recommendation and reference tools to facilitate the educational developments and the implementation of the pilot courses⁷, as well as a skills-set and learning outcomes mapping⁸. Together these documents provide the framework for ENLIGHT Challenge-based Learning.

ENLIGHT initially started by focusing on two main course formats: “Living Labs” and “Short Programmes”⁹, as test-beds to seed and develop challenge-based educational opportunities across the network. However, these formats proved to be very similar in the design approach, content and targets. Besides, the funding structure of the course mainly used the Erasmus+ Blended Intensive Programme (BIP) funding instrument. As such, the project team now refers to ENLIGHT Challenge-based Learning pilot course as a common label, knowing that they vary in scope, theme, course design, teaching and learning methodology, mobility experience, etc. **In total, ENLIGHT 39 pilot courses have been launched following the alliance’s proposed quality standards and learning methodology, out of which at least 20 applied a challenge-based learning methodology.** All pilot courses have been listed at the alliance’s joint courses webpage (<https://enlight-eu.org/students/courses>). In parallel, ENLIGHT 7 train-the-trainer sessions around challenge-based education have been implemented to support both academics and doctoral student coaches.

During the second half of the project period (May 2022-October 2023), the ENLIGHT Think Tank focused its efforts on the **reiteration and qualitative improvement of the pilot courses, their transferability to other challenges, and their scalability to reach more learners**. In this process, and in connection with other ENLIGHT Think Tank core groups, a 6th core group focused on the development of innovative challenge-based educational initiatives through the global engagement module (WP3 activities) was established. Efforts have also been deployed to embed the challenge-based formats in integrated curricular tracks between ENLIGHT partners with the support of the stepping stone and competence framework (developed in the context of ENLIGHT WP4) and to develop joint degrees¹⁰.

Based on the experience on ENLIGHT CBL pilot courses, the ENLIGHT WP2 coordination team has also produced guidelines for transfer of practices to other ENLIGHT contexts, including recommendations for future iterations and new pilots and for making them more accessible and sustainable (Deliverable 25).

⁵ Deliverable 15 – Calendar and guidelines for managing the Think Tank core groups.

⁶ Deliverable 21: Map of local challenges, existing expertise, projects, learning opportunities.

⁷ Deliverable 16: Pilot case implementation guidelines – architecture of challenges for Living Labs; criteria for Short Programmes.

⁸ Deliverable 17: Skill-set mapping for pilot cases.

⁹ 15 Living Labs and 5 Short Programmes, one in each flagship area, were planned.

¹⁰ Deliverable 26 presents the ENLIGHT strategy for developing joint programmes.

In parallel, in the view of bridging education needs with research and vice-versa, diversifying ENLIGHT challenge-based approach and further nurture research-based learning, the team has also produced a map of joint research themes and connections towards Horizon Europe (Deliverable 27). The document expresses the research interests of the ENLIGHT Think Tank and provide input for the ENLIGHT RISE Focus Groups, who are responsible for developing research projects and formulating the alliance's strategy towards Horizon Europe.

1.2 Why doing the Impact Assessment of the ENLIGHT Challenge-based Education Action Line? What is intended with the Impact Assessment of the ENLIGHT Challenge-based Education Action Line?

The primary goal of this impact assessment pilot case study¹¹ has been **to demonstrate, test and refine the potential of the ENLIGHT Methodology 1.0 for Impact Assessment and respective tools**. Thanks to the experience of the ENLIGHT Challenge-based Education pilot case study, a refined and simplified Methodology 2.0 for Impact Assessment has been proposed in the form of Deliverable 81.

The ENLIGHT Challenge-based Education has been selected as pilot case study because it is considered as one of the main ENLIGHT action lines with the potential to drive impact on **ENLIGHT learning ecosystem**, but also on the development of the **ENLIGHT competence framework**. In addition, it is strongly linked with the objectives of **multi-stakeholder, multi-scale networks** and of **quality assurance**.

Potential impact on the ENLIGHT Learning Ecosystem because, instead of collating existing courses and programmes as the basis for ENLIGHT curricula, ENLIGHT Challenge-based Education action line has set as ambition the development of its own methodology for research-driven and challenge-based learning. This methodology focuses on sound educational principles constituting a common educational vision in order to build (from scratch) innovative, coherent and relevant challenge-based learning formats. These shared innovative course designs, teaching methodologies and learning outcomes constitute the basis for the development of ENLIGHT challenge-based pilot courses, as well as staff and student training on CBE.

These pilot courses, around open-ended and real-world problems as they emerge in local contexts, and developed in close interaction with local community stakeholders, are focused on knowledge creation and on the development of critical thinking skills, therefore also **contributing to the establishment of ENLIGHT Competence Framework** in consistency with the **Quality Assurance** requirements and principles.

Besides, the ENLIGHT Challenge-based Education action line brings educational experts, developers and academics, as well as learners and local societal stakeholders from across the 9 ENLIGHT universities ecosystems, stimulating thus the **promotion of multi-stakeholder and multi-scale networks**.

1.3 Scope of the impact assessment exercise: ENLIGHT Challenge-based Education

Theory of Change Causal Chain of Impact

The diagram below (figure 1) illustrates the ENLIGHT Challenge-based Education expected outcomes and desired impact, as well as how these desired changes are expected to happen, taking into

¹¹ In addition to this pilot case study, 2 pilot case studies have been carried out to demonstrate, test and refine the potential of the ENLIGHT Methodology 1.0 for Impact Assessment and respective tools. These are the pilot case studies of the Mobility action line and the Regional Academies action line.

consideration its inputs (resources for its implementation), the specific activities carried out by the team (mainly in the context of WP2), and their outputs (the products deriving directly the activities).

The crafting process of the theory of change causal chain of impact has demonstrated to be a never-ending evolving process that can be continuously enriched, as both the action line and the impact assessment exercise evolves and stakeholders' expectations are being integrated.

In the case of ENLIGHT Challenge-based Education, the main stakeholders affected directly and indirectly by the action line are:

- **Learners** (mainly at Bachelor and Master levels);
- **Academics** (Teachers/ Lecturers / Researchers/ PhD coaches);
- **Support staff**, including education developers;
- **Societal stakeholders**: business, research organisations, public authorities, civil society organisations, and society in general.

Learners, academics and support staff involved in the implementation of the Challenge-based Education action line and corresponding CBL pilot courses have been classified as **primary stakeholders**, since they are directly affected and related to this action line. Societal stakeholders have been classified as **secondary stakeholders** since although they do not have a direct relationship with the action line, they may be involved in and affected by it ¹².

The affected stakeholders have been consulted on the action line expected outcomes and desired impact during 2 ENLIGHT CBL pilot courses, more specifically:

- During the Immersive week of the [Interdisciplinary Study of the Climate Neutral City pilot course at Ghent University](#) (4-8 April 2022), where feedback was obtained from 7 out of the 22 consulted CBE experts.
- [AI for non-IT students pilot course](#) at University of Tartu (April 2022), where feedback was obtained from 4 learners out of the 9 consulted learners.

Stakeholders were invited to reflect around 3 questions:

1. **What are the short-term “impacts”**: which short-term changes/effects do you think ENLIGHT Challenge-based Education will actually have on you, your organisation/ university, other stakeholders?
2. **What are your preferred/ desired “impacts”**: which fundamental changes/ transformations/ impact would you like ENLIGHT Challenge-based Education to bring about in the future (you can refer to the long-term impact on individuals, the university, the region, the education system, Europe, global)?
3. What, in your view, would be **evidence** (qualitative or quantitative) that the envisaged changes/impact have effectively been realised?

Besides these consultations, the **ENLIGHT Student Network** has also been consulted on the expected outcomes and desired impact of the ENLIGHT Challenge-based Education action line, which has sent its views in the form of a paper.

¹² Cfr. Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact for further details on stakeholders classification.

For the Challenge-based Education action line (as well as for the Regional Academies and Mobility action lines) the ENLIGHT Impact Task Force has crafted 5 versions of the theory of change diagrams, reflecting both the views of the ENLIGHT CBE action leaders and of the consulted stakeholders. More specifically:

- ToC 1.0 was built taking into consideration project proposal description;
 - ToC 2.0 was built taking into consideration action lines leaders' representatives first inputs;
 - ToC 3.0 was built taking into consideration action line leaders' comments;
 - ToC 4.0 breaks down expected outcomes and desired impact by type of consulted stakeholder;
 - ToC 5.0 merges all stakeholders' expectations and desired impacts into one single diagram, including action leaders' considerations based on the action line most recent developments.
- This was the version used for the elaboration of indicators (cfr. next section).

It is important to note that most of the expected outcomes and desired impacts as formulated by stakeholders are aligned with those previously identified by action leaders, but with a greater level of detail. Nevertheless, there were new ones that were added, such as the expected outcome 3: Learners get easier and better job opportunities.

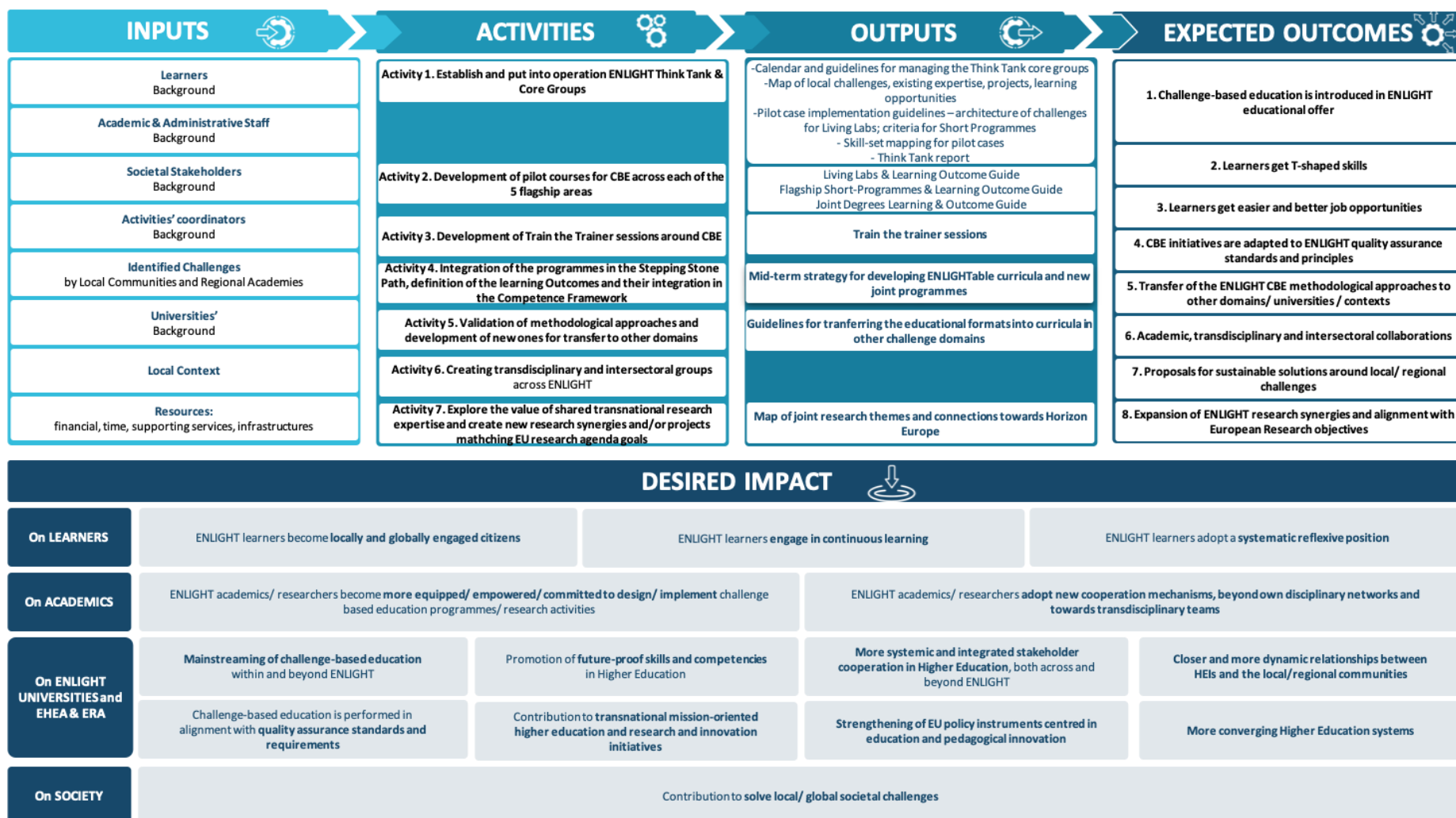


Figure 1: Theory of Change 5.0 of the ENLIGHT Challenge-based Education action line.

Indicators development

The composition of indicators for ENLIGHT pilot case studies was made taking as reference the expected outcomes and the desired impact of the theory of chain (ToC) causal chain of impact. On this basis, the ENLIGHT impact task force has used the relevant:

- ENLIGHT project own indicators;
- ENLIGHT universities' available data;
- Action line specific (performance) indicators;
- Stakeholders' suggestions for evidence.

The proposed indicators are both of quantitative and qualitative nature. They have all been consulted and contrasted with the ENLIGHT Challenge-based Education action leaders on both their relevance (*are the proposed indicators capturing well the expected/ desired changes? Are any others that should be taken into account?*), on the viability and on the means of collecting data for the identified indicators in the given timeframe (up to 14 July 2023).

Table 1 illustrates the final list of indicators, highlighting their links with the expected outcome and the means of collection. The table also distinguishes between those indicators which data has been collected during the project life-time from those indicators for which data will be collected at a later stage. In the last case, these are indicators that cannot be used in the short-time as some of the activities are still ongoing and/ or the expected changes can only be observed in the medium to long-term, beyond the duration of the pilot case study.

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	COLLECTION DATE/ COMMENT
2.1. Challenge-based education is introduced in ENLIGHT educational offer 2.1.1 Development and implementation of new teaching approaches and modalities in HE, including: - the consideration of global themes and challenges, sustainability, transdisciplinarity, cross-cultural approaches to problems, inter-cultural experience, flexibility, collaboration, innovation & creativity - the consideration of the labour market needs 2.1.2 Educational developers and mentors/ teachers are... - informed about, inspired by, intending to implement new ideas about challenge-based education in their courses - able to think of real-life challenges to be included in their courses 2.1.3. Learners are able to work on real-life complex problems and challenges, in an international and intercultural setting, and	2.1.1a)	Quantitative	Nº of ENLIGHT CBL pilot courses	Project indicator	July 23
	2.1.1 e)	Quantitative/ Qualitative	Nº/ % of ENLIGHT CBE learner responders considering that (1) global themes and challenges (2) sustainability (3) transdisciplinarity (4) cross-cultural approaches to problems (5) inter-cultural experience (6) flexibility (7) collaboration (8) innovation & creativity have been taken into consideration in the educational programmes they have participated in.	Survey – CBE questionnaire	July 23
	2.1.1 f)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics considering that (1) global themes and challenges (2) sustainability (3) transdisciplinarity (4) cross-cultural approaches to problems (5) inter-cultural experience (6) flexibility (7) collaboration (8) innovation & creativity have been taken into consideration in the educational programmes they have participated in.	Survey – CBE questionnaire	July 23
	2.1.1 g)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT support staff considering that (1) global themes and challenges (2) sustainability (3) transdisciplinarity (4) cross-cultural approaches to problems (5) inter-cultural experience (6) flexibility (7) collaboration (8) innovation & creativity have been taken into consideration in the educational programmes they have participated in.	Survey – CBE questionnaire	July 23
	2.1.1 h)	Quantitative/ Qualitative	Nº/ % of ENLIGHT CBE learners, academics and support staff responders considering that labour market skills needs have been taken consideration in the pilot courses they have participated in.	Survey – CBE questionnaire	July 23
	2.1.2 a)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff considering that they feel inspired and intending to implement new ideas about ENLIGHT CBE in their future courses.	Survey – CBE questionnaire	July 23
	2.1.2 b)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff intending to share ENLIGHT CBE experiences with other education developers teachers/ mentors.	Survey – CBE questionnaire	July 23
	2.1.2 c)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff stating being able to think of real-life challenges to be included in their future courses.	Survey – CBE questionnaire	July 23
	2.1.2 d)	Quantitative/ Qualitative	% of learners, academics and support staff considering having contributed to solving local, regional and/or global challenges (for example, by deepening the knowledge, extending and/or stimulating the debate)	Survey – CBE questionnaire	July 23

<p>together with external stakeholders</p> <p>2.1.4. Society/External stakeholders can (likely) benefit from the learners' proposed solutions</p>	2.1.3 a)	Quantitative/Qualitative	Nº/ % of ENLIGHT CBE learner responders considering that after their participation in ENLIGHT CBE pilot course they are able to work: (1) on real-life complex problems and challenges (2) in an international and intercultural setting (3) in a transdisciplinary setting (4) together with external stakeholders	Survey – CBE questionnaire	July 23
	2.1.3 b) (=6.3.2)	Quantitative	Nº of learners participating in ENLIGHT CBE pilot courses with the involvement of regional stakeholders.	Project partners data	July 23
	2.1.3 c) (link to 6.3.6 a)	Qualitative	ENLIGHT CBE Learners' opinion on the added value of the ENLIGHT CBE pilot courses.	Survey – CBE questionnaire	July 23
	2.1.3 d) (link to 6.3.6 b)	Qualitative	Academics' opinion on the added value of the ENLIGHT CBE pilot courses.	Survey – CBE questionnaire	July 23
	2.1.3 e) (link to 6.3.6 c)	Qualitative	Support Staff opinion on the added value of the ENLIGHT CBE pilot courses.	Survey – CBE questionnaire	July 23
	2.1.4	Quantitative/Qualitative	Nº of societal stakeholders participating in CBE pilot courses stating they can likely benefit from the learners' proposed solutions	Survey – CBE questionnaire	July 23
<p>2.2. Learners get T-shaped skills</p> <p>2.2.1. Learners with deeper disciplinary skills</p> <p>2.2.2. Learners with a wider skills-set, transversal and multidisciplinary skills</p>	2.2.1	Quantitative	% of ENLIGHT CBE learners experiencing enhanced knowledge skills	Project indicator	July 23
	2.2.2	Quantitative/Qualitative	% of ENLIGHT CBE learners acknowledging having a wider skills-set than before attending ENLIGHT CBE pilot course	Survey – CBE questionnaire	July 23
	2.2.3	Qualitative	Improvement rates of T-shaped skills	Specific course evaluations and satisfaction surveys	July 23
2.3. Learners get easier and better job opportunities	2.3	Quantitative/Qualitative	Nº/ % of ENLIGHT CBE learner responders considering they (1) identify easier a job opportunity, (2) get easier a job opportunity, (3) get a better job opportunity after attending a CBE education course/ programme	Survey – CBE questionnaire Survey	July 23
2.4. CBE pilot courses are adapted to ENLIGHT quality assurance standards and principles	2.4.1	Quantitative	Nº of ENLIGHT universities adopting the ENLIGHT QA as best practice	Project indicator	July 23
	2.4.2	Quantitative	Nº of ENLIGHT CBE courses adopting the ENLIGHT QA principles	Project partners data	July 23
2.5. Transfer of the ENLIGHT CBE methodological approaches to other domains/ universities / contexts	2.1.2 a)	Quantitative/Qualitative	Nº/ % of involved ENLIGHT academics and support staff considering that they feel inspired and intending to implement new ideas about ENLIGHT CBE in their future courses.	Survey – CBE questionnaire	July 23
	2.1.2 b)	Quantitative/Qualitative	Nº/ % of involved ENLIGHT academics and support staff intending to share ENLIGHT CBE experiences with other education developers teachers/ mentors.	Survey – CBE questionnaire	July 23
	2.1.2 c)	Quantitative/Qualitative	Nº/ % of involved ENLIGHT academics and support staff stating being able to think of real-life challenges to be included in their future courses.	Survey – CBE questionnaire	July 23
<p>2.6. Academic, Transdisciplinary and Intersectoral Collaborations</p> <p>2.6.1. New collaborations among/between students, academics across the ENLIGHT Network</p> <p>2.6.2. New transdisciplinary collaborations among/ between students, academics across the ENLIGHT Network</p> <p>2.6.3. Increased and enhanced cooperation with local stakeholders, including business</p>	2.6.1 a)	Quantitative/Qualitative	Nº of new collaborations established among learners across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	July 23
	2.6.1 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established among learners across the ENLIGHT community as result of the CBE programme	Survey – CBE questionnaire	July 23
	2.6.2 a)	Quantitative/Qualitative	Nº of new collaborations established among academics across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	July 23
	2.6.2 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established among academics across the ENLIGHT community as result of the CBE programme	Survey – CBE questionnaire	July 23
	2.6.3 a)	Quantitative/Qualitative	Nº of new collaborations established between learners and academics across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	July 23
	2.6.3 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established between learners and academics across the ENLIGHT community as result of the CBE programme	Survey – CBE questionnaire	July 23
	2.6.4 a)	Quantitative/Qualitative	Nº of new collaborations established between academics and non-academics across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	July 23
	2.6.4 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established between academics and non-academics across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	July 23
	2.6.5 a)	Quantitative/Qualitative	Nº of new collaborations established between support staff and other experts across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	July 23
	2.6.5 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established between support staff and other experts across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	July 23

	2.6.6 a) (=6.1.3 a)	Quantitative	Nº of individuals from societal stakeholder organisations (business, policy making, civil society) participating in the ENLIGHT CBE pilot courses	Indicator build-upon project indicators	To be captured at a later stage
	2.6.6 b) (=6.1.3 b)	Quantitative	Nº of societal stakeholder organisations (business, policy making, civil society organisations) participating in the ENLIGHT CBE pilot courses	Indicator build-upon project indicators	July 23
	2.6.5 c) (6.1.10)	Qualitative	4-helix players' opinion on their collaboration with other players in the context of their participation in ENLIGHT CBE	Survey – CBE questionnaire	July 23
2.7. Proposals for sustainable Solutions around local/ regional challenges	2.7.1 a) (=6.5.1 a)	Quantitative	Nº of proposed solutions to the local/regional challenges	Project indicator	July 23
	2.7.1 b) (=6.5.1 b)	Qualitative	Areas and type of solutions proposed	Project partners data	July 23
	2.1.2 d)	Quantitative/Qualitative	% of learners, academics and support staff considering having contributed to solving local, regional and/or global challenges (for example, by deepening the knowledge, extending and/or stimulating the debate)	Survey – CBE questionnaire	July 23
	2.1.4	Quantitative/Qualitative	Nº of societal stakeholders participating in CBE pilot courses stating they can likely benefit from the learners' proposed solutions	Survey – CBE questionnaire	July 23
2.8. Expansion of ENLIGHT research synergies and alignment with European Research objectives	2.8.1	Quantitative	Nº of research& innovation projects launched as result of ENLIGHT CBE pilot courses	Project indicator	To be captured at a later stage
	2.8.2	Quantitative	Nº of spin-off initiatives launched as result of ENLIGHT CBE education programmes	Project indicator	To be captured at a later stage
	2.8.3	Quantitative	Nº of publications launched as result of ENLIGHT CBE education programmes	Project partners data	To be captured at a later stage
	2.8.4	Quantitative	Nº of patents launched as result of ENLIGHT CBE education programmes	Project partners data	To be captured at a later stage

Table 1. Indicators dashboard for the ENLIGHT Challenge-based Education action line.

1.4 Data Collection: ENLIGHT Challenge-based Education

Data for ENLIGHT project indicators, for indicators built-upon project indicators and coming from ENLIGHT partner universities has been continuously captured and monitored since the launch of the ENLIGHT Erasmus+ project in November 2020. ENLIGHT Challenge-based Education action leaders have been asked to provide all available data for these indicators by the 14th July 2023. Given the strong links between ENLIGHT Challenge-based Education and Regional Academies action lines, the leaders of this second action line have also been consulted and have provided data on indicators that are of common interest to the two action lines.

As regards the data collected in the form of a survey, ENLIGHT has run a general **Impact Survey** from the 19th June to the 14th July 2023 through the EUSurvey platform under **one single link**: <https://ec.europa.eu/eusurvey/runner/ENLIGHTimpact>. The ENLIGHT Impact Survey included questions related to the Challenge-based Education, the Regional Academies, and to the Mobility action lines. As such, it was sent to:

- **ENLIGHT learners** participating in a) one or more ENLIGHT education modules, courses and/or programmes; b) one or more ENLIGHT “mobility experience”; AND/OR c) one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.
- **ENLIGHT academics** (teacher, lecturer, researcher,...) a) involved in one or more ENLIGHT Challenge Based Learning (CBL) pilot course, as teachers, lecturers, mentors, coordinators, developers, promoters...; b) participating in one or more ENLIGHT “mobility experience”; AND/OR c) participating in one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.
- **ENLIGHT support staff** (e.g. project manager, educational developer, mobility officer,...) a) involved in one or more ENLIGHT Challenge Based Learning (CBL) pilot course; b) participating in one or more ENLIGHT “mobility experience”; c) involved in the design and/or

implementation of ENLIGHT “mobility” related activities; AND/OR d) participating in one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.

- **Members of the ENLIGHT local/regional ecosystem** (business, research organisations, public authorities, civil society organisations,...) involved in a) one or more ENLIGHT Challenge Based Learning (CBL) pilot course; AND/OR b) one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.

In total, 218 individuals answered the ENLIGHT Impact Survey, whilst **214 individuals consented to share their responses with the ENLIGHT impact team**. Therefore, only these 214 responses have been taken into consideration.

Responders were asked specific questions depending on their specific profile (learner, academic, support staff of societal stakeholder) and involvement in one or more ENLIGHT action lines (Regional Academies, Challenge-based Education and Mobility). All questions were optional and the majority of these were asking a grade response from 0 to 5 (**where 0 represents “not at all” and 5 “very much”**). These questions were complemented by free text (optional) responses.

As regards the **ENLIGHT Challenge-based Education action line** specifically, a total of 117 responses were collected from the following stakeholders.

Stakeholder	Nº of responses	Sub-type	Nº of responses
ENLIGHT Learners participating in a CBL pilot course	66	Bachelor student	16
		Master student	32
		PhD student	16
		Lifelong Learner	1
		Other	1
ENLIGHT Academics involved in a CBL pilot course as teacher, lecturer, mentor, coordinator, developer or promoter	32	Researcher	4
		Teacher	6
		Both	21
		No answer	1
ENLIGHT Support Staff involved in a CBL pilot course as educational developer, coordinator, organizer or promoter	16	-	16
Member of the ENLIGHT local/regional ecosystem participating in a CBL pilot course	3	Research organisation	1
		Other	2
TOTAL	117	-	117

Table 2. Number of responses to the ENLIGHT Impact Survey – Challenge-based Education action line questionnaire, by type of stakeholder.

In relation to the Regional Academies action line, which also included questions relevant to the ENLIGHT Challenge-based Education, a total of 52 responses were collected from the following stakeholders.

Stakeholder	Nº of responses	Sub-type	Nº of responses
ENLIGHT Learners	7	Master student	4
		PhD student	3
ENLIGHT Academics	18	Researcher	6
		Teacher	1
		Both	10
		No answer	1
ENLIGHT Support Staff	22	-	22
Member of the ENLIGHT local/regional ecosystem	5	Business	1
		Public authority	1
		Research organisation	1
		Other	2
TOTAL	52	-	52

Table 3. Number of responses to the ENLIGHT Impact Survey – Regional Academies action line questionnaire by type of stakeholder.

It is important to highlight that for the Challenge-based Education pilot case study, the ENLIGHT Impact team has also taken into consideration the **conclusions of the WP2 study that led to the Guidelines for Transfer of Practices to other ENLIGHT contexts (Deliverable 25)**, including the different testimonials of the consulted stakeholders. The testimonials and conclusions that are considered as relevant to the identified expected outcomes will be clearly identified in the narrative below.

In addition, in order to analyse the effects of ENLIGHT CBL pilot courses on learners' skills (outcome 2.2), we have used data of **two courses assessments and related satisfaction surveys**, which were carried out by the educational teams responsible for the specific course design. These are the course evaluations of the pilot courses [Innovation Game](#) (18/08/2022 – 02/09/2022) and the [Designing Research on Different Dimensions of Equity](#) (September 2022). In the case of the Innovation Game course, 19 out of the 24 learner participants (79%) responded to the satisfaction survey; whilst in the case of the Designing Research on Different Dimension of Equity, 4 out of 16 have responded (25%).

2. Description of the Observed Outcomes and of their Contribution to the Desired Impacts

Outcome 1: Challenge-based education is introduced in ENLIGHT educational offer

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ¹³
2.1. Challenge-based education is introduced in ENLIGHT educational offer 2.1.1 Development and implementation of new teaching approaches and modalities in HE, including: - the consideration of global themes and challenges, sustainability, transdisciplinarity, cross-cultural approaches to problems, inter-cultural experience, flexibility, collaboration, innovation & creativity - the consideration of the labour market needs 2.1.2 Educational developers and mentors/ teachers are... - informed about, inspired by, intending to implement new ideas about challenge-based education in their courses - able to think of real-life challenges to be included in their courses 2.1.3. Learners are able to work on real-life complex problems and challenges, in an international and intercultural setting, and	2.1.1 a)	Quantitative	Nº of ENLIGHT CBL pilot courses	Project indicator	39 ENLIGHT pilot courses. At least 20 applying a CBL methodology
	2.1.1 e)	Quantitative/ Qualitative	Nº/ % of ENLIGHT CBE learner responders considering that (1) global themes and challenges (2) sustainability (3) transdisciplinarity (4) cross-cultural approaches to problems (5) inter-cultural experience (6) flexibility (7) collaboration (8) innovation & creativity have been taken into consideration in the educational programmes they have participated in.	Survey – CBE questionnaire	- On <i>global themes and challenges</i> : 63 out of 66 (95%) learners responded = or> to 3 out of 5. Average response: 4,38/5 - On <i>sustainability</i> : 51 out of 66 (77%) learners responded = or> to 3 out of 5. Average response: 3,65/5 - On <i>transdisciplinarity</i> : 63 out of 66 (95%) learners responded = or> to 3 out of 5. Average response: 4,24/5 - On <i>cross-cultural approaches to problems</i> : 58 out of 66 (88%) learners responded = or> to 3 out of 5. Average response: 4,11/5 - On <i>intercultural experience</i> : 64 out of 66 (97%) learners responded = or> to 3 out of 5. Average response: 4,35/5 - On <i>flexibility</i> : 59 out of 66 (89%) learners responded = or> to 3 out of 5. Average response: 3,92/5 - On <i>collaboration</i> : 63 out of 66 (95%) learners responded = or> to 3 out of 5. Average response: 4,36/5 - On <i>innovation & creativity</i> : 60 out of 66 (91%) learners responded = or> to 3 out of 5. Average response: 4,02/5
	2.1.1 f)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics considering that 1) global themes and challenges (2) sustainability (3) transdisciplinarity (4) cross-cultural approaches to problems (5) inter-cultural experience (6) flexibility (7) collaboration (8) innovation & creativity have been taken into	Survey – CBE questionnaire	- On <i>global themes and challenges</i> : 31 out of 32 (97%) academics responded = or> to 3 out of 5. Average response: 4,19/5 - On <i>sustainability</i> : 24 out of 32 (75%) academics responded = or> to 3 out of 5. Average response: 3,34/5 - On <i>transdisciplinarity</i> : 30 out of 32 (94%) academics responded = or> to 3 out of 5. Average response: 3,94/5

¹³ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

<p>together with external stakeholders</p> <p>2.1.4. Society/External stakeholders can (likely) benefit from the learners' proposed solutions</p>			consideration in the educational programmes they have participated in.		<p>-On <i>cross-cultural approaches to problems</i>: 28 out of 32 (88%) academics responded = or> to 3 out of 5. Average response: 3,66/5</p> <p>- On <i>intercultural experience</i>: 30 out of 32 (94%) academics responded = or> to 3 out of 5. Average response: 3,94/5</p> <p>- On <i>flexibility</i>: 25 out of 32 (78%) academics responded = or> to 3 out of 5. Average response: 3,38/5</p> <p>- On <i>collaboration</i>: 30 out of 32 (94%) academics responded = or> to 3 out of 5. Average response: 4,13/5</p> <p>- On <i>innovation & creativity</i>: 30 out of 32 (94%) academics responded = or> to 3 out of 5. Average response: 3,94/5</p>
	2.1.1 g)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT support staff considering that 1) global themes and challenges (2) sustainability (3) transdisciplinarity (4) cross-cultural approaches to problems (5) inter-cultural experience (6) flexibility (7) collaboration (8) innovation & creativity have been taken into consideration in the educational programmes they have participated in.	Survey – CBE questionnaire	<p>- On <i>global themes and challenges</i>: all (100%) support staff responded = or> to 3 out of 5. Average response: 4,31/5</p> <p>- On <i>sustainability</i>: 15 out of 16 (94%) support staff responded = or> to 3 out of 5. Average response: 3,69/5</p> <p>- On <i>transdisciplinarity</i>: all (100%) support staff responded = or> to 3 out of 5. Average response: 4,25/5</p> <p>-On <i>cross-cultural approaches to problems</i>: 15 out of 16 (94%) support staff responded = or> to 3 out of 5. Average response: 3,94/5</p> <p>- On <i>intercultural experience</i>: 15 out of 16 (94%) support staff responded = or> to 3 out of 5. Average response: 4,19/5</p> <p>- On <i>flexibility</i>: 15 out of 16 (94%) support staff responded = or> to 3 out of 5. Average response: 3,56/5</p> <p>- On <i>collaboration</i>: all (100%) support staff responded = or> to 3 out of 5. Average response: 4,38/5</p> <p>- On <i>innovation & creativity</i>: all (100%) support staff responded = or> to 3 out of 5. Average response: 4/5</p>
	2.1.1 h)	Quantitative/ Qualitative	Nº/ % of ENLIGHT CBE learners, academics and support staff responders considering that labour market skills needs have been taken consideration in the pilot courses they have participated in.	Survey – CBE questionnaire	<p>- 46 out of 66 (70%) learners responded = or> to 3, out of 5. Average response: 3,33/5</p> <p>- 29 out of 32 (91%) academics responded = or> to 3, out of 5. Average response: 3,63/5</p> <p>- All 16 (100%) support staff responded = or> to 3, out of 5. Average response: 3,94/5</p>
	2.1.2 a)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff considering that they feel inspired and intending to implement new ideas about ENLIGHT CBE in their future courses.	Survey – CBE questionnaire	<p>- 27 out of 32 (84%) academics responded = or> to 3, out of 5. Average response: 3,50/5</p> <p>-14 out of 16 (88%) support staff responded = or> to 3, out of 5. Average response: 3,81/5</p>
	2.1.2 b)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff intending to share ENLIGHT CBE experiences with other education developers teachers/ mentors.	Survey – CBE questionnaire	<p>- 28 out of 32 (88%) academics responded = or> to 3, out of 5. Average response: 3,81/5</p> <p>-14 out of 16 (88%) support staff responded = or> to 3, out of 5. Average response: 3,81/5</p>
	2.1.2 c)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff stating being able to think of real-life challenges to be included in their future courses.	Survey – CBE questionnaire	<p>- 31 out of 32 (97%) academics responded = or> to 3, out of 5. Average response: 4,00/5</p> <p>-14 out of 16 (88%) support staff responded = or> to 3, out of 5. Average response: 3,75/5</p>
	2.1.2 d)	Quantitative/ Qualitative	% of learners, academics and support staff considering having contributed to solving local, regional and/or global challenges (for example, by deepening the knowledge, extending and/or stimulating the debate)	Survey – CBE questionnaire	<p>- 41 out of 66 (62%) learners responded = or> to 3, out of 5. Average response: 2,94/5</p> <p>- 27 out of 32 (84%) academics responded = or> to 3, out of 5. Average response: 3,09/5</p> <p>-9 out of 16 (56%) support staff responded = or> to 3, out of 5. Average response: 2,75/5</p>
	2.1.3 a)	Quantitative/ Qualitative	Nº/ % of ENLIGHT CBE learner responders considering that after their participation in ENLIGHT CBE pilot course they are able to work: (1) on real-life complex problems and challenges (2) in an international and	Survey – CBE questionnaire	<p>- On <i>real-life complex problems and challenges</i>: 57 out of 66 (86%) learners responded = or> to 3 out of 5. Average response: 3,73/5</p> <p>- On <i>an international and intercultural setting</i>: 65 out of 66 (98%) learners responded = or> to 3 out of 5. Average response: 4,36/5</p>

			intercultural setting (3) in a transdisciplinary setting (4) together with external stakeholders		<p>- On transdisciplinary setting: 65 out of 66 (98%) learners responded = or> to 3 out of 5. Average response: 4,27/5</p> <p>- On together with external stakeholders: 54 out of 66 (82%) learners responded = or> to 3 out of 5. Average response: 3,56/5</p>
	2.1.3 b) (=6.3.2)	Quantitative	Nº of learners participating in ENLIGHT CBE pilot courses with the involvement of regional stakeholders.	Project partners data	470
	2.1.3 c) (link to 6.3.6 a)	Qualitative	ENLIGHT CBE Learners' opinion on the added value of the ENLIGHT CBE pilot courses.	Survey – CBE questionnaire	<p>(One quote selected per course)</p> <p>Learner of the ENLIVE course: <i>"It is an incredible program to discover new cultures, learn each others backgrounds and skills and create a network of people we feel we can count on."</i></p> <p>Learner of the Teaching for Global Citizenship course: <i>"Meeting student teachers from other countries and getting an insight into the education system of other European countries and the challenges they face has been the biggest benefit of the ENLIGHT seminar."</i></p> <p>Learner of the Dealing with Climate Change: From Global to Local Perspectives course: <i>"Overallly good, as it has given me the opportunity to know people and professors from diverse universities and disciplines."</i></p> <p>Learners of the Engaging with Climate Change: Local views of challenges course: <i>"I have learned to adapt to working with people from different backgrounds and disciplines and to collaborate and be prepared for different situations."</i></p> <p>Learner of the Climate Neutral City course: <i>"I enjoyed meeting people with different academic and cultral backgrounds. It was interesting to learn tools with which you can help group work. The setting in which also experts from the city came to talk to us about the area really was interesting to gather information quickly on the topic."</i></p> <p>Learner of the Regional Innovation Systems in sustainable development course: <i>"I really enjoyed my experience with ENLIGHT Educational module/ mobility because of its transdisciplinary approach to topic and the possibility to work together in a multinational team with different backgrounds. It was a great idea to establish this cooperation between universities and i think it is really beneficial to both academics and students of these aligned universities."</i></p> <p>Learner of the AI for non-IT students course: <i>"This program has provided me with significant educational, social, and cultural benefits. Not only did it enhance my knowledge in my field of interest, but it also gave me valuable insights into how educational institutions in other countries approach similar topics. Additionally, the program facilitated interactions with students from diverse backgrounds and nationalities, which expanded my perspectives and allowed me to learn from their experiences."</i></p> <p>Learner of the Urban Mining Blended Course: <i>"We are pushed out of our comfort zone and challenged to reflect on complex problems with students from very different disciplines and backgrounds. Very enriching personally."</i></p>
	2.1.3 d) (link to 6.3.6 b)	Qualitative	Academics' opinion on the added value of the ENLIGHT CBE pilot courses.	Survey – CBE questionnaire	Academic involved in the Dealing with Climate Change: From Global to Local Perspectives course: <i>"Challenge Based Learning is suited for some topics but not all. For us it seemed that CBL is"</i>

					<p><i>not ideally suited for climate change adaptation as treated from a social science perspective."</i></p> <p>Academic involved in the Dealing with Climate Change and in the Engaging with Climate Change courses: <i>"While the interdisciplinarity and international character are added values, cumbersome ERASMUS+ bureaucracy and the uncertainty of these courses in the educational programs make them rather undesirable."</i></p> <p>Academic involved in Urban Mining Blended Course: <i>"I'm not sure if we can speak about added value ... very low level"</i>.</p>
	2.1.3 e) (link to 6.3.6 c)	Qualitative	Support Staff opinion on the added value of the ENLIGHT CBE pilot courses.	Survey – CBE questionnaire	<p>Support staff involved in Intercultural Communication course: <i>"thematically opening up existing modules, adding international component, enhancing intercultural skills and collaborative working, i.e. addressing 21st century skills"</i></p> <p>Support staff involved in the AI for non-IT students course: <i>"Contribution from several universities, ie different competences that complement each other."</i></p> <p>Support Staff involved in Urban Mining, Sustainable and Innovative Student Housing Courses: <i>"CBL is a truly innovative teaching approach. Through its interdisciplinary and collaborative approach, it links disciplinary knowledge with real-world issues and the challenges of tomorrow, enabling students to grasp their complexity and become agents of change. ENLIGHT CBL Pilote Courses added value is real and varied:</i></p> <ul style="list-style-type: none"> - enabling administrative staff to develop new skills in terms of course design, active teaching, BIP implementation and integration into programmes - enabling students to develop cross-disciplinary and intercultural skills, to discover mobility and to feel that they are part of the world of today and tomorrow - open up the university to other institutions, associations and the private sector and strengthen partnerships - create a European network of experts working together to innovate teaching methods!
	2.1.4	Quantitative/Qualitative	Nº of societal stakeholders participating in CBE pilot courses stating they can likely benefit from the learners' proposed solutions	Survey – CBE questionnaire	All 3 (100%) societal stakeholders responded = or> to 3, out of 5. Average response: 4,67/5

Table 4. Indicators for outcome 1: Challenge-based education is introduced in ENLIGHT educational offer

2.1.1 Development and implementation of new teaching approaches and modalities in Higher Education

ENLIGHT efforts during its first three years have been centred around the development, testing and refinement of its learning methodology and framework for challenge-based teaching and learning. **ENLIGHT challenge-based education framework has been introduced in the alliance's educational offer thanks to the launch of pilot courses**, which follow ENLIGHT's proposed quality standards and learning methodology. In total, ENLIGHT 39 pilot courses have been launched following the alliance's proposed quality standards and learning methodology, out of which at least 20 applied a challenge-based learning methodology. All ENLIGHT CBL pilot courses have been listed at the alliance's joint courses webpage (<https://enlight-eu.org/students/courses>). The course pilots are different in nature, as they include different learning formats (intensive programmes, winter/ summer schools or living labs) and can be either "build from scratch" or adapted to align with ENLIGHT's CBL principles and

standards. Accompanying this process, ENLIGHT 7 train-the-trainer sessions around challenge-based education have also been implemented to support both academics and doctoral student coaches.

The development and implementation of ENLIGHT challenge-based education through its pilot courses included **the integration of key innovative principles in ENLIGHT educational offer**, such as the consideration of:

1. **global themes and challenges,**
2. **sustainability,**
3. **transdisciplinarity,**
4. **cross-cultural approaches to problems,**
5. **intercultural experience,**
6. **flexibility,**
7. **collaboration, and**
8. **innovation & creativity**

The inclusion of these major innovative principles in the ENLIGHT educational offer has been recognised by the great majority of the stakeholders responding to the ENLIGHT impact survey related questions, such the learners participating a CBL pilot course, academics (teachers, lecturers, mentors) and support staff (educational developers, coordinators, organisers and/or promoters) involved in the implementation of a CBL pilot course. As demonstrated below, **the consideration of *global themes and challenges, collaboration, intercultural experience and transdisciplinarity* have been identified in general as the principles with higher punctuation level; and the consideration of *sustainability, flexibility and innovation & creativity* the ones with a lower punctuation level.**

More specifically, in the case of the 66 **learners** responding to the survey CBL related questions, the percentage of positive responses (equal or superior to 3) varies between 97% for the consideration of *intercultural experience* in CBL pilot courses and 77% for the consideration of *sustainability*. The average response being higher for the consideration of ***global themes and challenges* (4,38), *collaboration* (4,36) and *intercultural experience* (4,35)** principles; and lower for the consideration of the principles of ***sustainability* (3,65), *flexibility* (3,92) and *innovation & creativity* (4,02).**

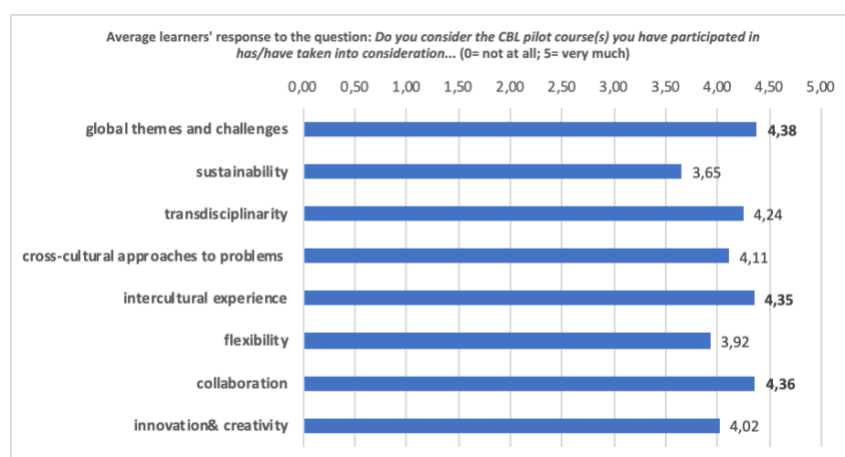


Figure 2. Average learners' response to the question "Do you consider the CBL pilot course(s) you have participated in has/have taken into consideration: global themes and challenges, sustainability, transdisciplinarity, cross-cultural approaches to problems, intercultural experience, flexibility, collaboration, innovation & creativity".

In their (optional) qualitative feedback on these specific questions, learners have particularly **highlighted the intercultural experience and the transdisciplinarity** principles of the CBL programmes they participated in:

*I participated in the ENLIVE which is a part of the ENLIGHT programme. I see it is a good programme cause it is a cultural exchange program among students from different universities and I **learn some new cultures and new things from this.***

*The program I took part in centered around the emerging field of AI and its interdisciplinary nature. It not only deepened my understanding of the complexities inherent in AI, but also emphasized the **importance of critical thinking and a multidisciplinary approach when dealing with this topic.***

These testimonies are confirmed by the majority of learners' statements on the added value of the CBE pilot courses:

*"It is an incredible program to **discover new cultures, learn each others backgrounds and skills and create a network of people** we feel we can count on."*

*"**Meeting student teachers from other countries and getting an insight into the education system of other European countries and the challenges they face** has been the biggest benefit of the ENLIGHT seminar."*

*"Overallly good, as it has **given me the opportunity to know people and professors from diverse universities and disciplines.**"*

*"I have learned to **adapt to working with people from different backgrounds and disciplines** and to **collaborate and be prepared for different situations.***

*"I enjoyed meeting people with different academic and cultral backgrounds. It was interesting to learn tools with which you can help group work. **The setting in which also experts from the city came to talk to us about the area really was interesting to gather information quickly on the topic.**"*

*"I really enjoyed my experience with ENLIGHT Educational module/ mobility because of its **transdisciplinary approach** to topic and the **possibility to work together in a multinational team with different backgrounds.** It was a great idea to establish this cooperation between universities and i think it is really beneficial to both academics and students of these aligned universities."*

*"This program has provided me with **significant educational, social, and cultural benefits.** Not only did it enhance my **knowledge in my field of interest, but it also gave me valuable insights into how educational institutions in other countries approach similar topics.** Additionally, the **program facilitated interactions with students from diverse backgrounds and nationalities, which expanded my perspectives and allowed me to learn from their experiences.**"*

*"We are pushed out of our comfort zone and **challenged to reflect on complex problems with students from very different disciplines and backgrounds.** Very enriching personally."*

In the case of the 32 **academic responders** involved in an ENLIGHT CBL pilot course(s), a very similar pattern has been observed. The percentage of positive responses (equal or superior to 3) varies

between 97% for the consideration of *global themes and challenges* and 75% for the consideration of *sustainability* in CBL pilot courses. Like learner responders, the average response being higher for the consideration of ***global themes and challenges*** (4,19), and ***collaboration*** (4,13) principles; and lower for the consideration of the principles of ***sustainability*** (3,34) and ***flexibility*** (3,38).

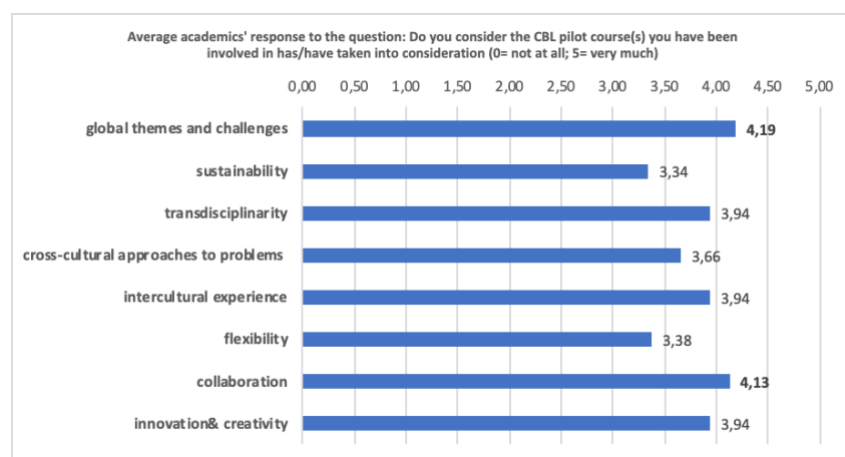


Figure 3. Average academics' response to the question "Do you consider the CBL pilot course(s) you have participated in has/have taken into consideration: global themes and challenges, sustainability, transdisciplinarity, cross-cultural approaches to problems, intercultural experience, flexibility, collaboration, innovation & creativity".

This positive pattern contrasts, however, with the statements of the academic staff involved in one or more CBL pilot course(s) on the added value of these courses. More concretely, these statements show the need to adapt better the courses to the challenges' specifics and to tackle bureaucracy hurdles.

"Challenge Based Learning is suited for some topics but not all. For us it seemed that CBL is not ideally suited for climate change adaptation as treated from a social science perspective."

"While the interdisciplinarity and international character are added values, cumbersome ERASMUS+ bureaucracy and the uncertainty of these courses in the educational programs make them rather undesirable."

"I'm not sure if we can speak about added value ... very low level".

As regards the 16 ENLIGHT **support staff** responding to the survey, and despite providing a more favourable assessment than academics, a similar trend repeats. All responders have responded 3 or more to the principles of *global themes and challenges*, *transdisciplinarity*, *collaboration* and *innovation & creativity*; and 15 out of 16 responders (94%) have responded positively to the remaining principles. The average response is higher for the principles of *collaboration* (4,38), *global themes and challenges* (4,31) and *transdisciplinarity* (4,25); and lower for the principles of *flexibility* (3,56), *sustainability* (3,69), and *cross-cultural approaches to problems* (3,94).

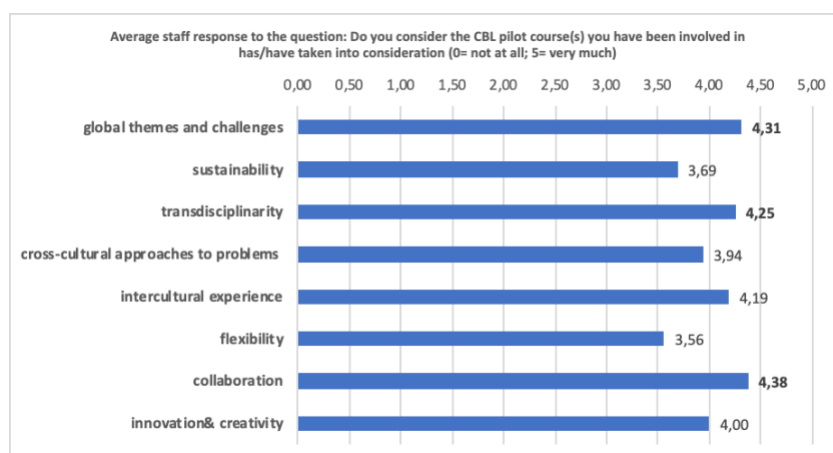


Figure 4. Average support staff' response to the question "Do you consider the CBL pilot course(s) you have participated in has/have taken into consideration: global themes and challenges, sustainability, transdisciplinarity, cross-cultural approaches to problems, intercultural experience, flexibility, collaboration, innovation & creativity".

In their statements about the added value of the CBL pilot courses they were involved in, support staff have highlighted the following:

"Thematically opening up existing modules, adding international component, enhancing intercultural skills and collaborative working, i.e. addressing 21st century skills"

"Contribution from several universities, ie different competences that complement each other"

"CBL is a truly innovative teaching approach. Through its interdisciplinary and collaborative approach, it links disciplinary knowledge with real-world issues and the challenges of tomorrow, enabling students to grasp their complexity and become agents of change. ENLIGHT CBL Pilote Courses added value is real and varied:

- enabling administrative staff to develop new skills in terms of course design, active teaching, BIP implementation and integration into programmes
- enabling students to develop cross-disciplinary and intercultural skills, to discover mobility and to feel that they are part of the world of today and tomorrow
- open up the university to other institutions, associations and the private sector and strengthen partnerships
- create a European network of experts working together to innovate teaching methods!"

Another major expected outcome highlighted by the learners during the definition of the impact assessment scope concerns the consideration of labour market skills needs in ENLIGHT challenge-based education. According to the impact survey results, one can say that **ENLIGHT has managed to respond to the expectation of addressing labour market skills needs in its CBL pilot courses**. In fact, 70% of the learners, 91% of the academics and 100% of support staff responders answered positively (equal or superior to 3, out of 5) to the question "Do you consider ENLIGHT CBL pilot courses you have participated/been involved in have taken into consideration labour market skills needs", with an average response varying from 3,33 for the learners and 3,94 for the staff responders.

2.1.2 CBE in the future educational offer

ENLIGHT efforts in the context of the Challenge-based Education action line has also **brought about a change in the way academics and support staff foresee addressing this innovative educational approach in the future**. Both the majority of ENLIGHT academics and support staff responding to the survey admit that after their involvement in a CBL pilot course(s) they:

- **feel inspired and intend to implement new ideas about ENLIGHT challenge-based education in future courses** (academics and support staff percentage of positive responses is 84% and 88% respectively),
- **intend to share ENLIGHT CBE experiences with other experts** (88% of both academics and support staff have responded positively to the related question), and
- **state being able to think of real-life challenges to be included in their future courses** (academics and support staff percentage of positive responses is 97% and 88% respectively).

In fact, as the ENLIGHT Deliverable 25 study¹⁴ highlights, ***“being part of a European university alliance encourages the sharing of innovative pedagogy and instill change locally (...)”*** (p.17). A concrete example of this transformation are the changes in the configuration and the expected outcomes of the [Innovation Games](#) pilot course. *“Initially, the course largely emphasized the entrepreneurial aspect and the development of the economic model for the solutions chosen by students. However, considering the content-rich nature of the course, with pedagogical content and theories demanding assimilation, it appeared more appropriate for the coordination team to sideline the economic model and concentrate on the fundamental reflection around the challenge, which imbues the challenge with greater depth (...). By integrating the course into the ENLIGHT programme, the goal is now to leave space and time for a reflective approach around the identified challenge, to master the “design thinking” and “game design” tools developed for this course, and to achieve better social dynamics within student teams in general.”*

Besides, ***“testing the CBL approach encourages (...) the exchange of practices between educational developers. In some home universities with no prior support structure dedicated to innovative course design, this experimentation leads to the upscaling of profiles of administrative staff who gained competencies in course design”***. As pointed out by an educational developer in the context of the same study (p.18):

“For us, it was the first time to organize such course. There is no clear framework on how to create such a blended course. Now this framework exists. I feel more secure, with more ideas how you can design and make content stronger. I gained more maturity.”

It is, however, worth noting a comment of an academic answering to the impact survey who raises the attention to the importance of a favourable framework at the home university:

“There is no fertile ground at university x to apply CBE and I am at a loss how to implement it outside of my own classes.”

2.1.3 CBE effects on learners’ abilities

On learners, the ENLIGHT CBE action line has given to **470 learners the opportunity and the experience to work around a real-life problem together with societal stakeholders**. 59 non-academic players have been involved in ENLIGHT CBL pilot courses. Besides, the CBE action line had also an important effect on learners’ ability to work in the future. According to the 66 learner responders to the impact survey, **after their participation in an ENLIGHT CBL pilot course, they feel they are able to work:**

¹⁴ Deliverable 25: Guidelines for transfer of practices to other ENLIGHT contexts.

- on real-life complex problems and challenges;
- in an international and intercultural setting;
- in a transdisciplinary setting; and
- together with external stakeholders.

The percentage of positive responses varying from 82% (for the ability to work with “external stakeholders”) to 98% (for the abilities to work in “an international and intercultural setting” and in a “transdisciplinary setting”). These effects on learners’ feeling on the ability to work are complemented and confirmed by the related effects on their specific skills, as highlighted in the section Outcome 2: Learners get T-shaped skills.

2.1.4 CBE contribution to society

Looking at the **effects of ENLIGHT CBE action line on society**, the majority of the consulted learners, academics and support staff also feel they **have contributed to the solving of local, regional and/or global challenges**, for example, by deepening the knowledge, extending and or/stimulating the debate in the context of ENLIGHT Challenge-based Education. The percentage of positive responses is higher in the case of academic stakeholders (84%), followed by learners (62%) and support staff (56%), with an average response level of 3,09, 2,94 and 2,75 respectively.

Societal stakeholders responding to the CBE action line related question are also of the view they **can likely or very likely benefit from the solutions proposed by the learners** in the context of the CBL pilot courses. The 3 societal stakeholder respondents have answered 4 or 5 (scale of 0 to 5) to the related question with an average response level of 4,67.

Summary of the observed outcomes

- **ENLIGHT challenge-based education framework was introduced in the alliance’s educational offer** thanks to the launch of pilot courses, following ENLIGHT’s proposed quality standards and learning methodology.
- **ENLIGHT has introduced key innovative principles in its educational offer**, such as the consideration of global themes and challenges, sustainability, transdisciplinarity, cross-cultural approaches to problems, intercultural experience, flexibility, collaboration, and innovation & creativity.
- Looking into the future, **academics and support staff** feel inspired and intend to implement new ideas about ENLIGHT challenge-based education in future courses, intend to share ENLIGHT CBE experiences with other experts, state being able to think of real-life challenges to be included in their future courses.
- After their participation in ENLIGHT CBL pilot courses, **learners** feel they are able to work on real on real-life complex problems and challenges; in an international and intercultural setting; in a transdisciplinary setting; and together with external stakeholders.
- The majority of the involved learners, academics and support staff feel they have **contributed to the solving of local, regional and/or global challenges**, and societal stakeholders are of the view they **can benefit from the solutions proposed by the learners**.

Outcome 2: Learners get T-shaped skills

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ¹⁵
2.2. Learners get T-shaped skills 2.2.1. Learners with deeper disciplinary skills 2.2.2. Learners with a wider skills-set, transversal and multidisciplinary skills	2.2.1	Quantitative	% of ENLIGHT CBE learners experiencing enhanced knowledge skills	Project indicator	100%
	2.2.2	Quantitative/Qualitative	% of ENLIGHT CBE learners acknowledging having a wider skills-set than before attending ENLIGHT CBE pilot course	Survey – CBE questionnaire	58 out 66 (88%) learners responded = or> to 3, out of 5. Average response: 3,77/5
	2.2.3	Qualitative	Improvement rates of T-shaped skills	Specific course evaluations and satisfaction surveys	The detailed results of the satisfaction surveys are confidential data. For the purposes of this narrative we have captured the most relevant information included in the surveys.

Table 5. Indicators for outcome 2: Learners get T-shaped skills.

In connection with the opportunities and experiences offered to learners by ENLIGHT Challenge-based Education action line, as well as its effects on their ability to work around real-life problems and in international and transdisciplinary settings (cfr. section 2.1.3. above), this action line has had an **effect on the specific skills-set of the learners participating in a CBL pilot course**. This include both **disciplinary skills and transversal and multidisciplinary skills**.

According to the CBE action line leaders, **all learners have experienced enhanced knowledge skills** after their participation in one or more of the 39 pilot courses. And, according to the ENLIGHT Impact Survey, **58 out of the 66 learner responders (88%) consider they have a “wider skills-set than before attending ENLIGHT CBE pilot course”**, with an average response of 3,77. Confirming this finding, it is important to highlight learner responders’ (optional) statements.

*“By delving into the program's curriculum, I gained valuable insights into the intricate aspects of AI and how it is rapidly shaping various industries and aspects of our lives. The program equipped me with the **knowledge and skills necessary to navigate the challenges and opportunities presented by AI advancements**.”*

“I have acquired to work in group and to improve my performance in front of others. For example, to talk about the social media campaign’s project for my group. In order to move forward in our project, I prefer to be a follower. That means I let my peers present their ideas, their opinions freely. And, as an individual in the group, I also show my perspective but I will not ignore their issues and I will find the common ideas among us to get the final results. I think it will all be ok if we try to understand each other and find the positive points of the partners.”

“This course introduced me some tools that helps us to create posters for Instagram and some other platforms as well. For me that's are new experiences and knowledge”.

More specifically, and in the difficulty of making an extensive analysis of all **learners’ skills improvement** after their participation in the 39 pilot courses, data of two courses assessments and related satisfaction surveys have been taken into consideration. These are the course evaluations of the pilot courses [Innovation Game](#) (18/08/2022 – 02/09/2022) and the [Designing Research on Different Dimensions of Equity](#) (September 2022).

In the case of the **Innovation Game course**, the following learning outcomes have been determined:
“After completing the course the participant should be able to:

¹⁵ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

- **apply principles of the innovation process** on identification, formulation and solving of problems;
- **develop effective and creative models of team work** based on the understanding of how the ability to solve problems and achieve goals is affected by team composition and leadership;
- **value how serious games can be applied in innovative processes in the healthcare system**, and in strengthening people's resilience to achieve and maintain health;
- articulate **how serious games can be used to improve learning and as novel pedagogic tools** in education;
- **interpret, critically evaluate and communicate relevant scientific information** in both speech and writing."

According to the course survey, **18 of the 19 learner responders (95%) feel they have achieved the [above mentioned] course goals to a high or very high extent.** In their statements, learners highlight in particular the **team-work related competencies**:

"I learned a lot from the teachers and also from my fellow students"

"Achieving my personal goals to create something meaningful and useful for improving the overall quality of life not just a product for money or digital trash to satisfy my curiosity"

"I think I've learned the basics of beginning the process of developing a game for some certain health challenge, making prototypes and analyzing the marketing field. I have worked in a lot of groups before this, but I still learned a lot about group dynamics too. "

"The lectures are helpful but it's really the group project that makes it click. Everything that was confusing at first made a lot of sense after we got to apply it ourselves."

On the specific **disciplinary skills**, 18 of the 19 learner responders (95%) also state the course provided them with **knowledge on how gamification can be used to solve challenges in the health sector to a high or very high degree.** As acknowledged by some of the learner participants:

"Because of the presentations of the professors, extras and because of presentations of my classmates I have learned a lot about this."

"By working with gamifying interventions, I feel like I have learned this "

"I will definitely think different about problems i will encounter in my future as a health care worker."

"The lectures and the group project gave me the chance to know that gamification can be implemented on health area (...)"

"I have got a lot of ideas, and now I got some practical base for them."

"It really is a little revelation all of its own."

As additional **transversal skill**, 18 of the 19 learner responders (95%) also consider their **ability to communicate orally** was developed **to a high or very high extent.**

"Expressing my opinion / presenting something in front of others isn't my strongest side and this course has definitely helped to improve that."

"(...) We developed our skills and we helped others to develop others' communication."

"I've gotten a lot more confident presenting and pitching."

"The workshops and the group work itself was very inspiring. I am going home with a lot of skills."

"I twice more talkative than usual"

*"I can't say for sure that my technical communication skills have improved. I can, however, say that I feel a lot more confident about communicating after taking this course (working in a friendly and awesome group for two weeks really did wonders). Confidence is not *exactly* a communication skill, but it matter so much that I still think it warrants the rating I gave."*

In the case of the course **Designing Research on Different Dimensions of Equity**, the analysis of the course survey results shows that it has provided them with a ***"learning experience that would not have been possible otherwise"*** (average response is 3,75). It also shows the course effects on learners' transversal skills. More specifically, they consider the course:

- **sparked their interest in the different cultural backgrounds of other group members** (average response 3,5);
- **taught them something about living and/ or studying in another European country that they didn't know before** (average response 3,75);
- **challenged them to look beyond their own discipline** (average response 3,5);
- **helped them to further develop communicative competences** (average response 3,75).¹⁶

Summary of the observed outcomes

- **Learners have experienced enhanced knowledge skills** after their participation in one or more of ENLIGHT pilot courses.

- Likewise, learners consider **having acquired a wider skills-set than before attending ENLIGHT pilot course**. This includes both **transversal and multidisciplinary skills**, such as team work, communication skills, and intercultural competences,

- After their participation in ENLIGHT CBL pilot courses, learners feel they **are able to work on real on real-life complex problems and challenges; in an international and intercultural setting; in a transdisciplinary setting; and together with external stakeholders**.

Outcome 3: Learners Get Easier and Better Job Opportunities

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ¹⁷
2.3. Learners get easier and better job opportunities	2.3	Quantitative/ Qualitative	Nº/ % of ENLIGHT CBE learner responders considering they (1) identify easier a job opportunity, (2) get easier a job opportunity, (3) get a better job opportunity after attending a CBE education course/ programme	Survey – CBE questionnaire	(1) identifying easier a job opportunity 44 out 66 (67%) learners responded = or> to 3, out of 5. Average response: 3,03/5 (2) getting easier a job opportunity

¹⁶ 1 = strongly disagree and 5= strongly agree

¹⁷ In the ENLIGHT Impact Survey 0 represents "not at all" and 5 "very much".













					<p>49 out 66 (74%) learners responded = or> to 3, out of 5. Average response: 3,06/5</p> <p>(3) getting a better job opportunity</p> <p>48 out 66 (73%) learners responded = or> to 3, out of 5. Average response: 3,12/5</p>
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Table 6. Indicators for outcome 3: Learners get easier and better job opportunities.

In alignment with the expectation of considering labour market skills needs in ENLIGHT Challenge-based Education (cfr. section 2.1.1), learners also highlighted their expectation that this action line **helps them in getting easier and better job opportunities**. According to the impact survey results, one can say that ENLIGHT has managed to respond to these expectations, as the majority of the learner responders consider that after their participation in an ENLIGHT pilot course(s) **they could/expect to:**

- **identify easier a job opportunity** (67% of learners responded = or> to 3 out of 5)
- **get easier a job opportunity** (74% of learners responded = or> to 3 out of 5)
- **get a better job opportunity** (73% of learners responded = or> to 3 out of 5)

This positive assessment is confirmed by the learner responders' statements.

*"For what I think is its gives me **a one step ahead chance than previous that's only**. Not completely **helps me to get a job but it supports to get a job**. I have something to showcase I worked with internationally."*

*"Attending this program helped me realize the vast amount of knowledge that still awaits exploration in the field of AI. However, I am confident **that participating in this program will greatly benefit my future career prospects**."*

However, as one learner highlighted, **there is no evidence of the actual impact related to the getting of the actual job**: "It might look good on a CV but I haven't noticed any particular impact it had yet".

Summary of the observed outcomes

- After participating in an ENLIGHT pilot course, **learners can/expect to identify easier, get easier and get a better job opportunity**.

Outcome 4: CBE Initiatives are Adapted to ENLIGHT Quality Assurance Standards and Principles

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23
2.4. CBE pilot courses are adapted to ENLIGHT quality assurance standards and principles	2.4.1	Quantitative	Nº of ENLIGHT universities adopting the ENLIGHT QA as best practice	Project indicator	9
	2.4.2	Quantitative	Nº of ENLIGHT pilot courses adopting the ENLIGHT QA principles	Project partners data	39

Table 7. Indicators for outcome 4: CBE initiatives are adapted to ENLIGHT Quality Assurance Standards and Principles.

ENLIGHT pursues an **in-depth quality-driven approach for its educational development**. For that purpose, and as highlighted in section 1.1., the Challenge-based Education team (Work Package 2) has produced educational guidelines, recommendations and reference tools to facilitate the implementation of the pilot courses, as well as a skills-set and learning outcomes mapping. Complementing the ENLIGHT framework for challenge-based learning, the ENLIGHT Quality Assurance officers (gathered in the framework of Work Package 1) have prepared a Quality Assurance

Handbook¹⁸, which defines a set of common principles for the joint ENLIGHT Quality Approach. The Handbook is fruit of a previous analysis of the nine ENLIGHT Quality Assurance systems¹⁹ which as revealed common ground to proceed towards the establishment of a commonly agreed Quality Approach. The resulting ENLIGHT Quality Assurance Handbook rather than proposing separate ENLIGHT principles, uses the framework for European Standards and Guidelines (ESG) for Quality Assurance, accompanying it with examples of good practices across the alliance.

Against this backdrop, it has been observed that all **ENLIGHT 39 pilot courses have been launched following the alliance's proposed quality standards and learning methodology**, including the 20 pilot courses that applied a challenge-based learning methodology.

Besides, all **9 ENLIGHT partner universities are guaranteeing the quality of their education offer, including CBL pilot courses, by means of a performant Quality Assurance System**. It has been observed that all partner Quality Assurance systems are compliant with the European Standards and Guidelines, despite a wide and diverse application of these principles across the partner universities²⁰.

Summary of the observed outcomes

- All ENLIGHT 39 pilot courses followed the alliance's proposed quality standards and learning methodology.
- All 9 ENLIGHT partner universities are guaranteeing the quality of their education offer, including CBL pilot courses, by means of a performant Quality Assurance System.

Outcome 5: Transfer of the ENLIGHT CBE Methodological Approaches to Other Domains, Universities and Contexts

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ²¹
2.5. Transfer of the ENLIGHT CBE methodological approaches to other domains/ universities / contexts	2.1.2 a)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff considering that they feel inspired and intending to implement new ideas about ENLIGHT CBE in their future courses.	Survey – CBE questionnaire	- 27 out of 32 (84%) academics responded = or> to 3, out of 5. Average response: 3,50/5 -14 out of 16 (88%) support staff responded = or> to 3, out of 5. Average response: 3,81/5
	2.1.2 b)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff intending to share ENLIGHT CBE experiences with other education developers teachers/ mentors.	Survey – CBE questionnaire	- 28 out of 32 (88%) academics responded = or> to 3, out of 5. Average response: 3,81/5 -14 out of 16 (88%) support staff responded = or> to 3, out of 5. Average response: 3,81/5
	2.1.2 c)	Quantitative/ Qualitative	Nº/ % of involved ENLIGHT academics and support staff stating being able to think of real-life challenges to be included in their future courses.	Survey – CBE questionnaire	- 31 out of 32 (97%) academics responded = or> to 3, out of 5. Average response: 4,00/5 -14 out of 16 (88%) support staff responded = or> to 3, out of 5. Average response: 3,75/5

¹⁸ Deliverable 100: Common principles for the joint ENLIGHT Quality Approach.

¹⁹ Deliverable 11: Analysis and Roadmap for a joint ENLIGHT Quality Approach.

²⁰ Idem.

²¹ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

Table 8. Indicators for outcome 5: Transfer of the ENLIGHT CBE methodological approaches to other domains, universities and contexts.

In alignment with the observed effects of the Challenge-based Education action line on ENLIGHT educational offer (cfr. outcome 1 section), this action line is also **supporting the scale-up and transfer of CBE innovative methodological approaches across the alliance**, through the reiteration of CBL pilot courses and their scalability to reach more learners. However, **there is still little evidence on the transfer of these innovative approaches to other ENLIGHT flagship areas, universities and contexts.**

However, as previously mentioned (cfr. 2.1.2), both the majority of ENLIGHT academics and support staff responding to the ENLIGHT impact survey admit that after their involvement in a CBL pilot course(s) they:

- **feel inspired and intend to implement new ideas about ENLIGHT challenge-based education in future courses** (academics and support staff percentage of positive responses is 84% and 88% respectively),
- **intend to share ENLIGHT CBE experiences with other experts** (88% of both academics and support staff have responded positively to the related question), and
- **state being able to think of real-life challenges to be included in their future courses** (academics and support staff percentage of positive responses is 97% and 88% respectively).

As pointed out by an educational developer in the context of the ENLIGHT Deliverable 25 study (p.18)²²: *“For us, it was the first time to organize such course. There is no clear framework on how to create such a blended course. Now this framework exists. I feel more secure, with more ideas how you can design and make content stronger. I gained more maturity.”* This analysis shows thus the strong potential for scalability and transferability.

To further support the transfer of CBE innovative methodological approaches, the same study highlights and gives evidence of the benefits of iterative course design in ENLIGHT, as well as the challenges associated with it and recommendations for tackling these. In this context, it is also worth noting a comment of an academic answering to the impact survey who raises the attention to the importance of a favourable framework at the home university: *“There is no fertile ground at university x to apply CBE and I am at a loss how to implement it outside of my own classes.”*

Summary of the observed outcomes

- There is **little evidence on the transfer of CBE methodological approaches to other ENLIGHT flagship areas, universities and contexts.**
- However, academics and support staff feel inspired and intend to implement new ideas about ENLIGHT challenge-based education in future courses, intend to share ENLIGHT CBE experiences with other experts, and state being able to think of real-life challenges to be included in their future courses.

Outcome 6: Academic, Transdisciplinary and Intersectoral Collaborations

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ²³
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²² Deliverable 25: Guidelines for transfer of practices to other ENLIGHT contexts.

²³ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

<p>2.6. Academic, Transdisciplinary and Intersectoral Collaborations</p> <p><i>2.6.1. New collaborations among/between students, academics across the ENLIGHT Network</i></p> <p><i>2.6.2. New transdisciplinary collaborations among/ between students, academics across the ENLIGHT Network</i></p> <p><i>2.6.3. Increased and enhanced cooperation with local stakeholders, including business</i></p>	2.6.1 a)	Quantitative/Qualitative	Nº of new collaborations established among learners across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	39 out of 66 (59%) learners responded “yes” to the question “Thanks to ENLIGHT education modules, courses and/or programmes, I have established a new collaboration with a learner/ learners from another ENLIGHT university.”
	2.6.1 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established among learners across the ENLIGHT community as result of the CBE programme	Survey – CBE questionnaire	36 out of the 39 new learners’ collaborations are transdisciplinary (92%)
	2.6.2 a)	Quantitative/Qualitative	Nº of new collaborations established among academics across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	20 out of 32 (63%) academics responded “yes” to the question “Thanks to ENLIGHT education modules, courses and/or programmes, I have established a new collaboration with a academic/ academics from another ENLIGHT university.”
	2.6.2 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established among academics across the ENLIGHT community as result of the CBE programme	Survey – CBE questionnaire	13 out of the 20 new academic collaborations are transdisciplinary (65%)
	2.6.3 a)	Quantitative/Qualitative	Nº of new collaborations established between learners and academics across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	23 out of 66 (35%) learners responded “yes” to the question “Thanks to ENLIGHT education modules, courses and/or programmes, I have established a new collaboration with a academic/ academics from another ENLIGHT university.” 7 out of 32 (22%) academics responded “yes” to the question “Thanks to ENLIGHT education modules, courses and/or programmes, I have established a new collaboration with a learner/ learners from another ENLIGHT university.”
	2.6.3 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established between learners and academics across the ENLIGHT community as result of the CBE programme	Survey – CBE questionnaire	22 out of the 23 new collaborations between learners and academics identified by learners are transdisciplinary (96%). 6 out of the 7 new collaborations between learners and academics identified by academics are transdisciplinary (86%).
	2.6.4 a)	Quantitative/Qualitative	Nº of new collaborations established between academics and non-academics across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	2 out of 32 (6%) academics responded “yes” to the question “Thanks to ENLIGHT education modules, courses and/or programmes, I have established a new collaboration with a learner/ learners from another ENLIGHT university.”
	2.6.4 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established between academics and non-academics across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	The 2 new collaborations between academics and non-academics are transdisciplinary.
	2.6.5 a)	Quantitative/Qualitative	Nº of new collaborations established between support staff and other experts across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	8 out of 16 (50%) support staff responded “yes” to the question “Thanks to ENLIGHT education modules, courses and/or programmes, I have established a new collaboration with other experts from another ENLIGHT university.”
	2.6.5 b)	Quantitative/Qualitative	Nº of new transdisciplinary collaborations established between support staff and other experts across the ENLIGHT community as result of the ENLIGHT CBE programme	Survey – CBE questionnaire	2 out of the 8 new collaborations between support staff and other experts are transdisciplinary.

	2.6.6 b) (=6.1.3 b)	Quantitative	Nº of societal stakeholder organisations (business, policy making, civil society organisations) participating in the ENLIGHT CBE pilot courses	Indicator build-upon project indicators	59
	2.6.5 c) (6.1.10)	Qualitative	4-helix players' opinion on their collaboration with other players in the context of their participation in ENLIGHT CBE	Survey – CBE questionnaire	<p>Quotes:</p> <p>From a learner: "Yes, this gives me the opportunity to know little bit of Bordeaux university and France. I really happy about that."</p> <p>From a learner: "Thanks to the ENLIGHTprogramme, I have established a new collaboration with learners from another ENLIGHT university for asking the questions."</p> <p>From an academic: "I plan to profit of ENLIGHT to set up a collaboration with X Univ."</p> <p>From an academic: "I expect to gain students to participate in our PhD or research projects".</p> <p>From an academic: "I have reached out to several people from x, y, z, and w, but everyone seems to be so drowning in their own tasks that collaboration is not possible."</p> <p>From support staff: "collaboration lasted only for the duration of the training"</p> <p>From societal stakeholders: "Good" & "great supporting materials, effective online learning path, great online collaboration"</p>

Table 9. Indicators for outcome 6: Academic, transdisciplinary and intersectoral collaborations.

Data collected through both the ENLIGHT Impact Survey and the study leading to Deliverable 25²⁴, shows that **academic, transdisciplinary and intersectoral collaborations have emerged across the ENLIGHT Alliance** as result of the Challenge-based Education action line.

These new academic collaborations have been established:

- **among learners from different ENLIGHT universities** (59% of learner responders admit having established a new collaboration with a learner/learners from other ENLIGHT university),
- **among academics from different ENLIGHT universities** (63% of academic responders admit having established a new collaboration with a learner/learners from other ENLIGHT university),
- **between learners and academics from different ENLIGHT universities** (35% of learner responders admit having established a new collaboration with an academic/academics from other ENLIGHT university, and 22% of academic responders admit having established a new collaboration with a learner/learners from other ENLIGHT university), and
- **between support staff and other experts from different ENLIGHT universities** (50% of support staff responders admit having established a new collaboration with other experts from other ENLIGHT university).

With the exception of the new collaborations established between support staff and other experts, the **great majority of these collaborations are of transdisciplinary nature** (cfr. table 9).

On their opinion about these new collaborations, it is worth highlighting the following statements:

²⁴ Deliverable 25: Guidelines for transfer of practices to other ENLIGHT contexts.

(from a learner) *“Thanks to the ENLIGHT programme, I have established a new collaboration with learners from another ENLIGHT university for asking the questions.”*

(from an academic) *““I plan to profit of ENLIGHT to set up a collaboration with X Univ.”*

These positive assessments are confirmed by testimonies captured in the framework of the Deliverable 25 study (p11). For example, from an academic: *“I think the benefit of this module to academics and the partners in ENLIGHT like ourselves is primarily from coming together to meet up with colleagues from similar background, learn from mutual experiences, identify opportunities for doing research together and ultimately, you know, make new friendships”.*

In a more critical note, an academic also stated that in the context of the ENLIGHT Impact Survey *“I have reached out to several people from X, Y, Z, and W, but everyone seems to be so drowning in their own tasks that collaboration is not possible.”*; and a member of the support staff referred to that the *““collaboration lasted only for the duration of the training”.*

In addition to triggering new academic collaborations, ENLIGHT Challenge-based Education action line also led to the **establishment and/or consolidation of intersectorial collaborations between the academia and other members of the quadruple-helix ecosystem**. 59 external stakeholder organisations have been involved in the 39 pilot courses. However, only 2 out of the 32 (6%) consulted academics recognised having established a new collaboration with a non-academic from another ENLIGHT community. These 2 new collaborations have been identified as being transdisciplinary.

A good example of this intersectorial collaboration across the ENLIGHT network is the participation of the chief innovation officer from the municipality of Bratislava (Comenius University Bratislava Regional Academy) in the [Summer School on Equity and Sustainability Transitions](#) at the University of Galway (University of Galway Regional Academy).

When asked about their opinion on their collaboration with other players in the context of their participation in ENLIGHT challenge-based learning, societal stakeholders identify it as “Good” and “(...) Great online collaboration”.

Summary of the observed outcomes

- **New academic collaborations have been established** as result of the CBE action line, including among learners, academics, and between learners and academics. The majority of these new collaborations are of transdisciplinary nature.
- **Intersectorial collaborations between the academia and other members of the quadruple-helix ecosystem have established and/or consolidated.**

Outcome 7: Proposals for Sustainable Solutions around Local/ Regional Challenges

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ²⁵
	2.7.1 a) (=6.5.1 a)	Quantitative	Nº of proposed solutions to the local/regional challenges	Project indicator	27

²⁵ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

2.7. Proposals for sustainable Solutions around local/ regional challenges	2.7.1 b) (=6.5.1 b)	Qualitative	Areas and type of solutions proposed	Project partners data	In the areas related to Women Leadership in Global Health; Innovation Gaming, and Climate Neutral Cities, Climate Change Mitigation.
	2.1.2 d)	Quantitative/ Qualitative	% of learners, academics and support staff considering having contributed to solving local, regional and/or global challenges (for example, by deepening the knowledge, extending and/or stimulating the debate)	Survey – CBE questionnaire	- 41 out of 66 (62%) learners responded = or> to 3, out of 5. Average response: 2,94/5 - 27 out of 32 (84%) academics responded = or> to 3, out of 5. Average response: 3,09/5 - 9 out of 16 (56%) support staff responded = or> to 3, out of 5. Average response: 2,75/5
	2.1.4	Quantitative/ Qualitative	Nº of societal stakeholders participating in CBE pilot courses stating they can likely benefit from the learners' proposed solutions	Survey – CBE questionnaire	All 3 (100%) societal stakeholders responded = or> to 3, out of 5. Average response: 4,67/5

Table 10. Indicators for outcome 7: Proposals for sustainable solutions around local/regional challenges.

ENLIGHT Challenge-based Education action is driven by the ambition of better preparing the learners for the challenges they likely to encounter in society. For that purpose, the learning experience is centred around a real-life challenge that is delineated by the learners themselves. Learners are involved in the process of finding solutions to these challenges, and through this process develop subject matter expertise and transversal skills.

As previously highlighted (cfr. section 2.1.3), the majority of the **consulted learners, academics and support staff feel they have contributed to the solving of local, regional and/or global challenges**, for example, by deepening the knowledge, extending and or/stimulating the debate in the context of ENLIGHT Challenge-based Education. The percentage of positive responses is higher in the case of academic stakeholders (84%), followed by learners (62%) and support staff (56%), with an average response level of 3,09, 2,94 and 2,75 respectively.

In fact, at least **27 innovative solutions have been identified and proposed to tackle the societal challenges addressed in the context of the CBL pilot courses**. For instance, innovative solutions have been proposed to tackle the challenges related to Climate Neutral Cities in the framework of the CBL pilot course [Climate Neutral City Blended Intensive Course \(BIP\)](#). Similarly, innovation solutions have also been proposed in the context of the [Mentorship Programme Empowering Young Women Leaders in Global Health](#) and of the [Sustainable and Experimental Student Housing Living Lab](#).

Societal stakeholders responding to the CBE action line related questions are also of the view they **can likely or very likely benefit from the solutions proposed by the learners** in the context of the CBL pilot courses. The 3 societal stakeholder responders have answered 4 or 5 to the related question with an average response level of 4,67.

Summary of the observed outcomes

- At least 27 innovative solutions have been identified and proposed to tackle the societal challenges addressed in the context of the CBL pilot courses
- The majority of the involved learners, academics and support staff feel they have **contributed to the solving of local, regional and/or global challenges**
- Societal stakeholders are of the view they **can benefit from the solutions proposed by the learners**.

Outcome 8: Expansion of ENLIGHT Research Synergies and Alignment with European Research objectives

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ²⁶
2.8. Expansion of ENLIGHT research synergies and alignment with European Research objectives	2.8.1	Quantitative	Nº of research& innovation projects launched as result of ENLIGHT CBE pilot courses	Project indicator	0 - To be captured at a later stage
	2.8.2	Quantitative	Nº of spin-off initiatives launched as result of ENLIGHT CBE education programmes	Project indicator	0 - To be captured at a later stage
	2.8.3	Quantitative	Nº of publications launched as result of ENLIGHT CBE education programmes	Project partners data	0 - To be captured at a later stage
	2.8.4	Quantitative	Nº of patents launched as result of ENLIGHT CBE education programmes	Project partners data	0 - To be captured at a later stage

Table 11. Indicators for outcome 8: Expansion of ENLIGHT research synergies and alignment with European research objectives.

To the date of the drafting of the present document there is **no evidence for the indicators identified to capture the effects of the CBE action line on the expansion of ENLIGHT research synergies and alignment with European Research objectives.**

However, from the analysis of the qualitative feedback related to the establishment of new academic collaborations (cfr. outcome 6 section for further details), **it is possible to deduce that these new collaborations are going beyond teaching and include (or will include) research-related purposes**, which shows that efforts are going on the direction of this expected outcome. In this context, it is worth the mentioning the following academics' statements:

"I expect to gain students to participate in our PhD or research projects".

*"I easily found colleagues with similar interest among the core group, we were able to develop the course together, because we do this topic/ research, and overlook human relationships. The contact was very easy, you don't have to think strategically how to communicate an issue. It's a good opportunity to work with colleagues. Once we have the 3rd edition in place, **we could start to think further and build research projects from that, and PhD collaborations.** A long term objective could be to extend this course to a joint programme, although we need a gradual approach to have a good knowledge, and we need institutional support."*

Summary of the observed outcomes

- There is no evidence on the effects of the CBE action line on the expansion of ENLIGHT research synergies and alignment with European Research objectives.
- However, **it is possible to deduce that the new collaborations established are going beyond teaching and include (or will include) research-related purposes.**

3. Impact Assessment

From the analysis above one can state that the ENLIGHT Challenge-based Education action line is bringing about change and **have met at least 7 out of the 8 expected outcomes**, as it has not possible to capture clear evidence for outcome "Expansion of ENLIGHT Research Synergies and Alignment with European Research objectives". However, the nature of these changes varies in some cases in terms of their "temporality", "intention", "repair capacity", "intensity", and "extension" as defined in

²⁶ In the ENLIGHT Impact Survey 0 represents "not at all" and 5 "very much".

Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact ²⁷. The table below makes the assessment of the observed changes by outcome area.

OUTCOME	TEMPORALITY	INTENTION	REPAIR CAPACITY	INTENSITY	EXTENSION
2.1. Challenge-based education is introduced in ENLIGHT educational offer	Primary: immediate incidence on stakeholders. Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Significant: there is abundant evidence to demonstrate this outcome.	Partial: effects on delimited geographical spaces
2.2. Learners get T-shaped skills	Primary: immediate incidence on stakeholders. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Significant: there is abundant evidence to demonstrate this outcome.	Partial: effects on delimited geographical spaces
2.3. Learners get easier and better job opportunities	Primary: immediate incidence on stakeholders. Permanent: effects remain after the end of the project.	Indirect impact: not a direct result from the action.	Irreversible	Minor: there is little evidence to demonstrate this outcome.	Extensive: effects cannot be delimited in a specific geographical space
2.4. CBE pilot courses are adapted to ENLIGHT quality assurance standards and principles	Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Significant: there is abundant evidence to demonstrate this outcome.	Partial: effects on delimited geographical spaces
2.5. Transfer of the ENLIGHT CBE methodological approaches to other domains/ universities / contexts	Primary: immediate incidence on stakeholders. Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Minor: there is little evidence to demonstrate this outcome.	Extensive: effects cannot be delimited in a specific geographical space
2.6. Academic, Transdisciplinary and Intersectoral Collaborations	Primary: immediate incidence on stakeholders. Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Moderate: there is sufficient evidence to demonstrate this outcome.	Partial: effects on delimited geographical spaces
2.7. Proposals for sustainable Solutions around local/ regional challenges	Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Indirect impact: not a direct result from the action.	Irreversible	Moderate: there is sufficient evidence to demonstrate this outcome.	Extensive: effects cannot be delimited in a specific geographical space
2.8. Expansion of ENLIGHT research synergies and alignment with European Research objectives	Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Indirect impact: not a direct result from the action.	Irreversible	Null: not enough evidence to demonstrate the change	Partial: effects on delimited geographical spaces

Table 12. Assessment of the observed outcomes in function of their “temporality”, “intention”, “repair capacity”, “intensity”, and “extension”.

²⁷ For the full description of the different types of impact, please consult Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact.

The general assessment of the changes and effects brought by the ENLIGHT Challenge-based Education action line show that they are permanent, can be partial or extensive and in most of the cases irreversible. Their intensity varies in function of the observed outcome, from null to significant.

The ENLIGHT Challenge-based Education action line, associated with the efforts of other ENLIGHT activities and external determinants, will be contributing to bring about further changes (impact) on:

- **Learners**, who are in the path to become globally engaged citizens and empowered for a professional environment focusing on transversal skills, interdisciplinary and intersectoral collaborations (as impact derived mainly from outcomes 1: *challenge-based education is introduced in ENLIGHT educational offer*, 2: *learners get T-shaped skills*, and 6: *academic, transdisciplinary and intersectoral collaborations*).
- **Academics**, who are more equipped and empowered to design and implement challenge-based education programmes, to adopt new cooperation mechanisms beyond own disciplinary networks and towards transdisciplinary teams (as impact derived mainly from outcomes 1: *challenge-based education is introduced in ENLIGHT educational offer*, and 6: *academic, transdisciplinary and intersectoral collaborations*).
- **ENLIGHT Alliance, its universities, and the European Higher Education Areas**, where CBE is mainstreamed in accordance with quality assurance standards and requirements, future-proof skills and competencies are promoted, there is more systemic and integrated stakeholder cooperation, closer and more dynamic relationships between HEIs and the local/regional communities, transnational mission-oriented Higher Education and more converging Higher Education systems (as impact derived mainly from outcomes: 1: *challenge-based education is introduced in ENLIGHT educational offer*; 2: *learners get T-shaped skills*; 4: *CBE initiatives are adapted to ENLIGHT QA standards and principles*; 5: *transfer of ENLIGHT CBE methodological approaches to other domains/ universities/ contexts*; 6: *academic, transdisciplinary and intersectoral collaborations*).
- **Society**, with innovative solutions to their local/ global societal challenges (as impact derived mainly from outcome 7: *proposals for sustainable solutions around local/regional challenges*).

ENLIGHT MOBILITY: Increased, Flexible, Inclusive and Green Mobility

1. Introduction

1.1. What is/What do we understand by ENLIGHT Mobility?

Description of the action line objectives

The main objective of the ENLIGHT Mobility action line is to develop an overarching structural and technical framework for **increased, flexible, inclusive and green mobility**, providing the conditions and the tools for flexible learning and teaching that lead to the establishment of an open and integrated space, i.e. a European University System. In this European University system, the objective is to enable the free movement of students, academics and support staff, sharing the available resources and gradually integrating more teaching and learning processes.

In this sense, ENLIGHT has focused its efforts in developing the technical tools for enabling **more and better flexible learning opportunities so to reach and exchange more (lifelong) learners across the ENLIGHT universities to benefit from an international learning experience**. The basis for this has been the *ENLIGHT stepping-stone path*, which intends to offer learners a flexible combination of physical, blended and online mobility opportunities, and an overarching *Competence Framework* defining both the desired components and learning outcomes of the ENLIGHT curricula and the modalities for receiving recognition for the international learning experiences. At the same time, in order to foster an open and integrated learning environment, ENLIGHT is progressively creating an *interconnected digital campus*, a technical system that connects the different existing partners structures and gives full access to each other's learning environments.

Specific attention has been given to the **inclusion of underrepresented groups**²⁸ in higher education and more specifically in ENLIGHT international mobility, with the objective of removing any barriers that hold students and staff back from engaging in an international learning experience. Likewise, ENLIGHT aims to raise mobility levels whilst keeping the **effects of climate-neutrality and supporting sustainability in higher education**.

In the context of the ENLIGHT Mobility action line, **we understand and use the concept of ENLIGHT mobility as all international learning experience at another ENLIGHT university of both students and**

²⁸ For the purposes of the present pilot case study, we refer to vulnerable, disadvantaged and/or underrepresented learner in the sense used at Annex II to the Rome Communiqué (2020) Glossary of Terms http://ehea.info/Upload/Rome_Ministerial_Communique_Annex_II.pdf, where it is stated that a "(...) group of learners is **underrepresented** in relation to certain characteristics (e.g. gender, age, nationality, geographic origin, socio-economic background, ethnic minorities) if its share among the students is lower than the share of a comparable group in the total population. (...) **Disadvantaged students** often face specific challenges compared to their peers in higher education. This can take many forms (e.g. disability, low family income, little or no family support, orphan, many school moves, mental health, pregnancy, having less time to study because one has to earn one's living by working or having caring duties). **Vulnerable students** may be at risk of disadvantage and in addition have special (protection) needs. For example, because they suffer from an illness (including mental health) or have a disability, because they are minors, because their residence permit depends on the success of their studies (and thus also on decisions made by individual teachers), because they are at risk of being discriminated against. These learners are vulnerable in the sense that they may not be able to ensure their personal well-being, or that they may not be able to protect themselves from harm or exploitation and need additional support or attention.

staff (academic and non-academic staff). **We take into consideration: online learning; virtual exchange (embedded in a physical course); blended learning; physical mobility, within ENLIGHT and funded by the budget of the Alliance or through other mobility schemes.**

Description of the activities carried out so far and related outputs

The ENLIGHT Mobility action line is part of Work Package 4 - Connect efforts of the ENLIGHT Erasmus+ project. ENLIGHT WP4 first year has been focused on the development of a framework for flexible learning paths in the form of the **ENLIGHT stepping-stone path**, with the intention of offering learners a combination of physical, blended and online mobility opportunities with a low-hurdle entry-point. The stepping stone path consists of several components: *internationalization at home* via physical, virtual, and blended teacher exchange online learning; *short-term mobility* (summer/winter schools, intensive programmes); *semester exchanges* via embedded mobility windows; *vertical degree mobility* between institutions, based on automatic recognition. A pilot design for the stepping-stone path has been developed together with clear objectives and functionalities for the five flagship areas of ENLIGHT²⁹, including for Bachelor, Master and PhD curricula³⁰. The pilot has been tested in selected Bachelor and Master programmes identified by each ENLIGHT university to implement the stepping-stone components and their curricular embedding.

To create the possibility to students and staff to be mobile between all partner universities a **Multilateral Exchange Agreement** was also signed by all ENLIGHT partner universities. Apart from ensuring mobility flows in ENLIGHT on all levels and throughout all disciplines, the agreement also provides for different forms of mobility, and more specifically short-term mobility and virtual/blended mobility (BIP), next to the classic Erasmus+ semester exchange.

In alignment with the stepping-stone path, WP4 team also developed an overarching **Competence Framework**³¹ defining the learning outcomes of the ENLIGHT curricula (both disciplinary and knowledge focused skills but also transversal competencies), ENLIGHT educational approaches (including challenge-based education, transdisciplinary, collaboration with societal stakeholders, research-oriented teaching, etc), and its operationalisation in different ENLIGHT learning formats (ENLIGHT regular courses, Short Programmes, Living Lab Projects, Micro-credential programmes, Joint programmes), as well as the criteria for designing these ENLIGHT learning formats. The framework is based on the principles of mutual recognition, as defined in the ENLIGHT quality assurance handbook³². In the process towards the development of the Competence Framework, a mapping of desired learning outcomes has been designed³³ in coordination with the education development in WP2 and WP3 around challenge-based education. Furthermore, at the time of drafting this narrative, WP4 team is about to publish a document with the modalities for ENLIGHT portfolio certification (deliverable 54) and for micro-credentials (deliverable 55).

In the process of developing the technical conditions for seamless and flexible mobility and the interconnected digital campus as highlighted above, the WP4 team has first carried out a preparatory

²⁹ Health and well-being, Digital revolution and impact of digitalization, Climate action, Energy transition and circular economy, and Equity.

³⁰ Deliverable 119: Pilot Catalogue of Flexible Mobility Schemes.

³¹ Deliverable 110. A synopsis of the ENLIGHT Competence Framework is available at: <https://enlight-eu.org/for-educators/enlight-competence-framework>

³² Deliverable 100: Common principles for the joint ENLIGHT Quality Approach

³³ Deliverable 53: Mapping of desired components and learning outcomes of the ENLIGHT curricula.

analysis and process review within the alliance (deliverable 67)³⁴. The basis of the ENLIGHT interconnected digital campus is the [ENLIGHT Course Catalogue](https://courses.enlight-eu.org/)³⁵ that makes the ENLIGHT course offer visible for learners and teachers and enable course registration for ENLIGHT partner universities' course offer. Rather than developing a new stand-alone system, it was decided to use existing technologies and build interfaces to create full access to each Universities' learning environments. In this process, ENLIGHT has designed the DXL (Data Exchange Layer) (deliverable 68) and developed the API (Application Programming Interface) for the interconnected course catalogue (deliverable 69).

As part of ENLIGHT efforts on inclusion of underrepresented groups in international mobility, and in cooperation with the ENLIGHT Student Network, the **counselling services of all partner were connected** to join forces with the objective to provide tailored adequate support³⁶. A **communication strategy**³⁷ was also elaborated to reach each specific target groups of students, and **success stories and good practices**³⁸ were presented in order to set and manage expectations around challenges and the facilitation options. A **scholarship strategy**³⁹ targeted at these groups is being currently designed and expected to be published by the end of October 2023.

In parallel, ENLIGHT has **mobilized and connected the responsible Green Offices** of all ENLIGHT partners⁴⁰ to work on sustainable solutions to harmonize internationalization with sustainability and reduce the carbon footprint of travel. The ENLIGHT Green Office network has been working on the integration of green mobility and **sustainable mobility incentives** in connection with the stepping stone path and in cooperation with the ENLIGHT Student Network (cfr. Deliverable 61). As a first step action towards implementing a joint green travel policy, ENLIGHT has agreed on a **reforestation strategy**⁴¹. It has also developed and promoted a **carbon calculator** enabling students/staff to find ways to offset emissions generated by mobility through alternative lifestyle choices⁴²; prepared a **catalogue of sustainable living** for each ENLIGHT university host town⁴³; and developed a **communication strategy on sustainable travel and living solutions** in the ENLIGHT partner universities⁴⁴.

These "green mobility" related initiatives have been carried out in fully alignment with the **ENLIGHT Sustainability Engagement** endorsed by the 9 ENLIGHT rectors for joining forces in the areas of governance, research, education, transfer and operations and estate to address major societal challenges.

³⁴ Deliverable 67: Analysis of partner processes

³⁵ Available at this page: <https://courses.enlight-eu.org/>

³⁶ Deliverable 56: Pooling of counselling services with regard to access for underrepresented groups.

³⁷ Deliverable 57: Communication strategy on inclusive mobility.

³⁸ Deliverable 58: Pilot of success stories.

³⁹ Deliverable 59: Scholarship strategy.

⁴⁰ Deliverable 60: Pooling of green offices.

⁴¹ Deliverable 63: Support strategy for carbon sequestration and offsetting: what universities need to know about standards, programmes and projects.

⁴² Deliverable 64: Carbon calculator.

⁴³ Deliverable 65: Catalogue of sustainable living.

⁴⁴ Deliverable 66: Communication strategy on sustainable travel and living.

1.2 Why doing the Impact Assessment of the ENLIGHT Mobility Action Line? What is intended with the Impact Assessment of the ENLIGHT Mobility Action Line?

The primary goal of this impact assessment pilot case study⁴⁵ has been **to demonstrate, test and refine the potential of the ENLIGHT Methodology 1.0 for Impact Assessment and respective tools**. Thanks to the experience of the ENLIGHT Challenge-based Education pilot case study, a refined and simplified Methodology 2.0 for Impact Assessment has been proposed in the form of Deliverable 81.

The ENLIGHT Mobility action line has been selected as pilot case study because it is considered as one of the main ENLIGHT action lines with the potential to drive impact on **ENLIGHT Learning Ecosystem** and on the **ENLIGHT Competence Framework**, in connection with the Alliance's objectives of **Quality Assurance**. In this context, it is worth highlighting WP4 efforts in promoting flexible learning paths along the ENLIGHT stepping-stone path, in designing its Competence Framework, and in developing the Course Catalogue as previously detailed (cfr. 1.1). Likewise, the Mobility action line is a clear condition to the establishment of an **open and integrated space for learning and teaching in a European University System**.

As demonstrated above, through the Mobility action line, ENLIGHT is also providing support to students and staff from underrepresented groups and in promoting green mobility and sustainability schemes to reduce the effects of increased mobility levels, in alignment with **EU values and policy priorities**.

1.3 Scope of the impact assessment exercise: ENLIGHT Mobility Theory of Change Causal Chain of Impact

The diagram below (figure 1) illustrates the ENLIGHT Mobility action line expected outcomes and desired impact, as well as how these desired changes are expected to happen, taking into consideration its inputs (resources for its implementation), the specific activities carried out by the WP4 team, and their outputs (the products deriving directly the activities).

The crafting process of the theory of change causal chain of impact has demonstrated to be a never-ending evolving process that can be continuously enriched, as both the action line and the impact assessment exercise evolves and stakeholders' expectations are being integrated.

In the case of ENLIGHT Mobility, the main stakeholders affected directly and indirectly by the action line are:

- **Learners** participating in an ENLIGHT mobility experience⁴⁶;
- **Academics** (Teachers/ Lecturers / Researchers/ PhD Mentors) participating in an ENLIGHT mobility experience;

⁴⁵ In parallel to this pilot case study, 2 pilot case studies have been carried out to demonstrate, test and refine the potential of the ENLIGHT Methodology 1.0 for Impact Assessment and respective tools. These are the pilot case studies of the Challenge-based Education and the Regional Academies action lines.

⁴⁶ As previously highlighted, we understand ENLIGHT mobility experience as all international learning experience at another ENLIGHT university of both students and staff (researchers, academics, and non-academic staff). We take into consideration: online learning; virtual exchange (embedded in a physical course); blended learning; physical mobility, within ENLIGHT and funded by the budget of the Alliance or through other mobility schemes.

- **Support staff** participating in an ENLIGHT mobility experience;
- **Support staff** participating in the design and/or implementation of ENLIGHT Mobility related activities (e.g. mobility officers).
- **Societal stakeholders:** business, research organisations, public authorities, civil society organisations, and society in general.

Learners, academics and support staff participating in an ENLIGHT mobility experience, as well as support staff involved in the design and/or implementation of ENLIGHT mobility related activities have been classified as **primary stakeholders**, since they are directly affected by and related to this action line. Societal stakeholders have been classified as **secondary stakeholders** since although they do not have a direct relationship with the action line, they may be affected by the increase/ decrease of mobility figures, and/or the promotion of inclusive and green mobility.⁴⁷

The ENLIGHT Impact Task Force has consulted university staff (both academics and support staff) on the action line expected outcomes and desired impact through the online survey *ENLIGHT Impact Consultation Flexible, Inclusive and Green Mobility*, available at <https://ec.europa.eu/eusurvey/runner/ENLIGHTMobility> and run from 24/05/23 to 03/06/23. Stakeholders were invited to respond 3 open questions:

4. **Desired Impact (the Dream):** which fundamental changes/transformation/ impact would you like ENLIGHT Mobility to bring about in the future?
5. **Expected Outcomes (the Achievements):** which short-term changes/ effects do you think ENLIGHT Mobility will actually have on you, on your university, on the community/society?
6. **Evidence:** what, in your view, would be evidence (qualitative or quantitative) that the envisaged changes have effectively been realized?

Even if only 4 responses were received to the survey, they were extremely rich in content, details and new insights.

In parallel, the **ENLIGHT Student Network** has also been consulted on the expected outcomes and desired impact of the Mobility action line, which has sent its views in the form of a paper.

For the Mobility action line (as well as for the Challenge-based Education and Regional Academies action lines) the ENLIGHT Impact Task Force has crafted 5 versions of the theory of change diagrams, reflecting both the views of the ENLIGHT Mobility action leaders and of the consulted stakeholders. More specifically:

- ToC 1.0 was built taking into consideration project proposal description;
- ToC 2.0 was built taking into consideration action lines leaders' representatives first inputs;
- ToC 3.0 was built taking into consideration action line leaders' comments;
- ToC 4.0 breaks down expected outcomes and desired impact by type of consulted stakeholder;
- ToC 5.0 merges all stakeholders' expectations and desired impacts into one single diagram, including action leaders' considerations based on the action line most recent developments. This was the version used for the elaboration of indicators (cfr. next section).

It is important to note that most of the expected outcomes and desired impacts as formulated by stakeholders are aligned with those previously identified by action leaders, but with a greater level of

⁴⁷ Cfr. Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact for further details on stakeholders classification.

detail. Nevertheless, there were new ones that were added, such as the expected *undesired* outcomes “more administrative hurdles for staff” and “more bureaucracy, internal requests and bugs to deal with”. It was also interesting to note that the staff consultation responses didn’t include any specific views on the “inclusivity” dimension of the ENLIGHT Mobility action line.

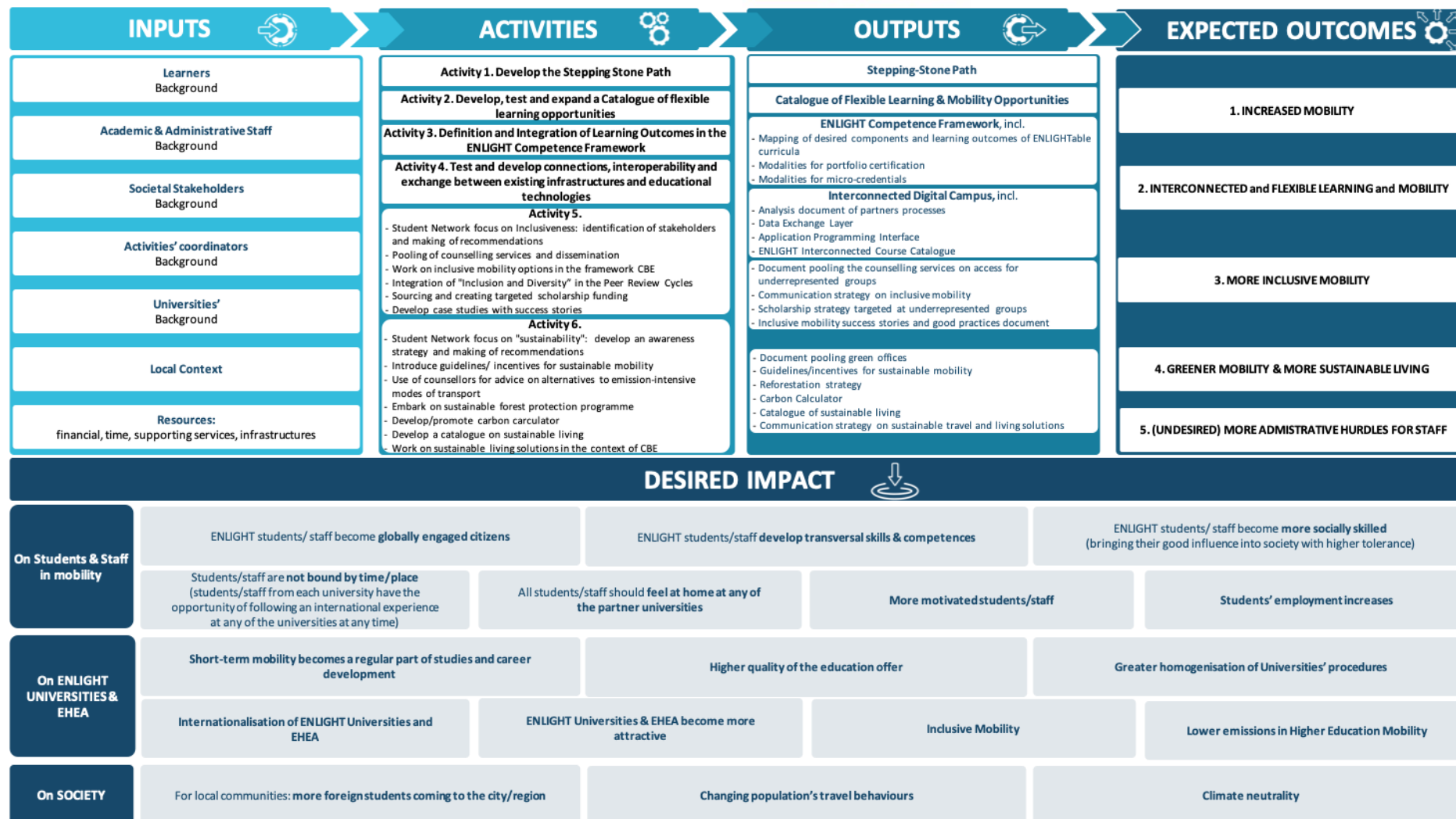


Figure 1. Theory of Change 5.0 of the ENLIGHT Mobility action line.

Indicators development

The composition of indicators for ENLIGHT pilot case studies was made taking as reference the expected outcomes and the desired impact of the theory of chain (ToC) causal chain of impact. On this basis, the ENLIGHT impact task force has used the relevant:

- ENLIGHT project own indicators;
- ENLIGHT universities' available data;
- Action line specific (performance) indicators;
- Stakeholders' suggestions for evidence.

The proposed indicators are both of quantitative and qualitative nature. They have all been consulted and contrasted with the ENLIGHT Mobility action leaders on both their relevance (*are the proposed indicators capturing well the expected/ desired changes? Are any others that should be taken into account?*), on the viability and on the means of collecting data for the identified indicators in the given timeframe (up to 14 July 2023).

The table below illustrates the final list of indicators, highlighting their links with the expected outcome and the means of collection. The table also distinguishes between those indicators which data has been collected during the project life-time from those indicators for which data will be collected at a later stage. In the last case, these are indicators that cannot be used in the short-time as some of the activities are still ongoing and/ or the expected changes can only be observed in the medium to long-term, beyond the duration of the pilot case study. Some of the indicators not collected were also thought in the perspective of contrasting ENLIGHT Mobility action line effects with the effects of other (non ENLIGHT) Mobility actions. However, the establishment of that contrast group, which should have the same characteristics of the ENLIGHT Mobility control group was not possible to constitute during the project-lifetime.

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	COLLECTION DATE/ COMMENT
5.1. INCREASED Mobility <i>5.1.1. More options for learning</i> - large variety of high quality courses - more learning opportunities that are tailored to the specific needs of learners <i>5.1.2. Multiple international learning opportunities for staff (academics and non-academics)</i> - More opportunities to do thesis at any university or co-supervision possibilities between partnering universities - More possibilities of co-working with people in other universities <i>5.1.3. More students and staff activated</i> - More students and staff going in mobility - Students/staff increasingly aware and encouraged to undertake more substantial international learning experiences	5.1.1 a)	Quantitative	Nº of online lectures, courses, seminars, conferences organised in the context of ENLIGHT	Indicator build-upon project indicators	July 23
	5.1.1 b)	Quantitative	Nº of virtual exchanges (embedded in a physical course) organised in the context of ENLIGHT	Indicator build-upon project indicators	To be captured at a later stage
	5.1.1 c)	Quantitative	Nº of blended learning opportunities developed in the framework of ENLIGHT	Indicator build-upon project indicators	July 23
	5.1.1 d)	Quantitative	Nº of physical mobility opportunities	Project indicator	July 23
	5.1.1 e) (= 2.1.1 a))	Quantitative	Nº of ENLIGHT CBL pilot courses	Project indicator	July 23
	5.1.1 f)	Quantitative	Nº of Erasmus Mundus Joint Master programmes developed in the context of ENLIGHT	Project indicator	July 23
	5.1.1 g)	Quantitative	Nº of Joint/double degrees developed in the context of ENLIGHT	Project indicator	July 23
	5.1.2 a)	Quantitative	Nº of ENLIGHT Doctoral seminars	Project indicator	July 23
	5.1.2 b)	Quantitative	Nº of co-supervised thesis developed in the context of ENLIGHT	Project partners data	To be captured at a later stage
	5.1.2 c)	Quantitative	Nº of online ENLIGHT project-related events	Indicator build-upon project indicators	July 23
	5.1.2 d)	Quantitative	Nº of physical ENLIGHT project-related events	Indicator build-upon project indicators	July 23
	5.1.2 e)	Quantitative	Nº of exchange opportunities in teacher education	Project indicator	July 23
	5.1.3 a)	Quantitative	Nº of mobilities within ENLIGHT - Students	Project indicator	July 23
	5.1.3 b)	Quantitative	Nº of mobilities within ENLIGHT - Staff (academics and non-academics)	Project indicator	July 23
	5.1.3 c)	Quantitative/Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT stating	Survey	July 23

			they are encouraged to undertake other mobility experience		
	5.1.3 d)	Quantitative/ Qualitative	% of students and staff (academics and non-academics) participating in a mobility experience not developed in the context of ENLIGHT, stating they are encouraged to undertake other mobility experience	Survey	To be captured at a later stage
5.2. INTERCONNECTED and FLEXIBLE LEARNING & MOBILITY <i>5.2.1. More flexible learning paths, catalogued and visualised</i> <i>5.2.2. Easier way of searching courses</i> <i>5.2.3. Students are able to create a unique mobility experience, based on their own needs/ abilities</i> <i>5.2.4. (for students) Seamless application process</i> <i>5.2.5. Students collect and accumulate the outcomes of ENLIGHT learning experiences in a digital and transportable portfolio</i> <i>5.2.6. Easier Automatic Recognition Processes: minimised administrative hurdles in credits transfer/ recognition</i> <i>5.2.7. For staff in mobility: saving time, with less longer stays abroad and back/forth travelling</i> <i>5.2.8. For Universities: better and simplified internal mobility processes; clear and smooth workflows</i>	5.2.1 a)	Quantitative	Nº of courses catalogued in the course catalogue	Platform statistics	July 23
	5.2.1 b)	Quantitative	Nº of visits to the course catalogue	Platform statistics	July 23
	5.2.1 c)	Quantitative	Nº of individual visitors to the course catalogue	Platform statistics	July 23
	5.2.2	Quantitative/ Qualitative	% of students having participated in a mobility within ENLIGHT acknowledging: - knowing the course catalogue platform - it was easy to identify the courses modules they were looking for in the platform - it was easy to get the information they were looking for - it was easy to apply to a course through the platform	Survey	July 23. Last element to be captured at a later stage.
	5.2.3 (= 5.3.3)	Quantitative/ Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT acknowledging it was adapted to their own specific needs and challenges	Survey	July 23
	5.2.4	Quantitative	Nº of credits emitted / accumulated through ENLIGHT catalogue	Platform statistics	To be captured at a later stage
	5.2.5	Quantitative/ Qualitative	% of students having participated in a mobility within ENLIGHT acknowledging this learning experience has been recognised in a digital badge	Survey	July 23
	5.2.6	Quantitative/ Qualitative	% of students having participated in a mobility within ENLIGHT acknowledging they faced administrative hurdles during the credit transfer/ recognition process	Survey	July 23
	5.2.8 (=5.5.1)	Quantitative/ Qualitative	% of support staff involved in the implementation of the ENLIGHT mobility-related actions stating that the ENLIGHT flexible and interconnected learning and mobility processes have become more streamlined	Survey	July 23
	5.3.1	Quantitative/ Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT considering that ENLIGHT takes into consideration diversity and inclusion in the mobility programmes	Survey	July 23
5.3. MORE INCLUSIVE MOBILITY <i>5.3.1. Increased awareness about diversity and inclusion as key element within mobility programmes (among students and staff)</i> <i>5.3.2. Increased awareness about mobility possibilities among underrepresented groups</i> <i>5.3.3. Mobility options are "more" customized to the needs of all community members (mobility should take into consideration the unique challenges faced by students when undertaking mobility)</i> <i>5.3.4. Increased mobility of underrepresented groups</i> <i>5.3.5. Wider scope of participants (including those underrepresented in international learning) in mobility</i>	5.3.2 a)	Quantitative/ Qualitative	% of students a staff (academics and non-academics) having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented group acknowledging they are aware of other ENLIGHT mobility opportunities	Survey	July 23
	5.3.2 b)	Quantitative/ Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented group acknowledging they are aware of other ENLIGHT mobility opportunities and would likely subscribe to it/them in the future.	Survey	July 23
	5.3.3 (=5.2.3)	Quantitative/ Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT acknowledging it was adapted to their own specific needs and challenges	Survey	July 23
	5.3.4. 5.3.5 a)	Quantitative/ Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented group	Survey	July 23
	5.3.5 b)	Quantitative/ Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented group having successfully completed their experience	Survey	July 23
	5.3.5 c)	Quantitative/ Qualitative	Difference in successful completion rates between students having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented and those not.	Survey	July 23
	5.4.1 a)	Quantitative	Nº of "green" mobile students	Project indicator	To be captured at a later stage
5.4. GREENER MOBILITY & MORE SUSTAINABLE LIVING					

<p>5.4.1. Increased awareness among academics, staff and students about sustainability and the impact of mobility travelling</p> <p>5.4.2. New ways/ model of engaging in international mobility without expanding the carbon footprint</p> <p>5.4.3. staying climate-neutral despite mobility increase</p>	5.4.1 b)	Quantitative/ Qualitative	% of students and staff (academics and non-academics) participating in a physical/blended mobility within ENLIGHT acknowledging taking sustainability into account in their travel and accommodation options.	Survey	July 23
	5.4.2 a)	Quantitative	% of virtual students' mobilities compared to the overall aggregated mobilities (virtual, physical and blended) funded by ENLIGHT budget.	Indicator build-upon project indicators	-
	5.4.2 b)	Quantitative	% of virtual and blended students' mobilities compared to the overall aggregated mobilities (virtual, physical and blended) funded by ENLIGHT budget.	Indicator build-upon project indicators	-
	5.4.3 a)	Quantitative	Nº of carbon emissions (Co2) due to mobility within ENLIGHT - students <u>and</u> staff (blended and physical)	Project indicator	To be captured at a later stage
	5.4.3 b)	Quantitative	Average Carbon emissions by ENLIGHT international learning experience (virtual, blended and physical)	Indicator build-upon project indicators	To be captured at a later stage
<p>5.5. Undesired outcomes More administrative hurdles for staff, including more bureaucracy, internal requests and bugs to deal with</p>	5.5.1 (=5.2.8)	Quantitative/ Qualitative	% of support staff involved in the implementation of the ENLIGHT mobility-related actions stating that the ENLIGHT flexible and interconnected learning and mobility processes have become more streamlined	Survey	July 23
	5.5.2	Quantitative/ Qualitative	Nº of <u>extra</u> petitions staff involved in the implementation of the ENLIGHT mobility-related actions state having to deal with in comparison to other mobility-related programmes.	Survey	July 23
	5.5.3	Quantitative/ Qualitative	Nº of <u>extra</u> digital bugs staff involved in the implementation of the ENLIGHT mobility-related actions state having to deal with in comparison to other mobility-related programmes.	Survey	July 23

Table 1. Indicators dashboard for the ENLIGHT Mobility action line.

1.4 Data Collection: ENLIGHT Mobility

Data for ENLIGHT project indicators, for indicators built-upon project indicators and coming from ENLIGHT partner universities has been continuously captured and monitored since the launch of the ENLIGHT Erasmus+ project in November 2020. ENLIGHT Mobility action leaders have been asked to provide all available data for these indicators by the **14th July 2023**. **Given this deadline, project data for the mobilities taking place during the academic year 2022-2023, as well during the first months of the academic year 2023-2024, were not fully integrated.**

As regards the data collected in the form of a survey, ENLIGHT has run a general **Impact Survey** from the 19th June to the 14th July 2023 through the EUSurvey platform under **one single link**: <https://ec.europa.eu/eusurvey/runner/ENLIGHTimpact>. The ENLIGHT Impact Survey included questions related to the Challenge-based Education, the Regional Academies, and to the Mobility action lines. As such, it was sent to:

- **ENLIGHT learners** participating in a) one or more ENLIGHT education modules, courses and/or programmes; b) one or more ENLIGHT “mobility experience”; AND/OR c) one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.
- **ENLIGHT academics** (teacher, lecturer, researcher,...) a) involved in one or more ENLIGHT Challenge Based Learning (CBL) pilot course, as teachers, lecturers, mentors, coordinators, developers, promoters...; b) participating in one or more ENLIGHT “mobility experience”; AND/OR c) participating in one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.
- **ENLIGHT support staff** (e.g. project manager, educational developer, mobility officer,...) a) involved in one or more ENLIGHT Challenge Based Learning (CBL) pilot course; b) participating in one or more ENLIGHT “mobility experience”; c) involved in the design and/or implementation of ENLIGHT “mobility” related activities; AND/OR d) participating in one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.

- **Members of the ENLIGHT local/regional ecosystem** (business, research organisations, public authorities, civil society organisations,...) involved in a) one or more ENLIGHT Challenge Based Learning (CBL) pilot course; AND/OR b) one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.

In total, 218 individuals answered the ENLIGHT Impact Survey, whilst **214 individuals consented to share their responses with the ENLIGHT impact team**. Therefore, only these 214 responses have been taken into consideration.

Responders were asked specific questions depending on their specific profile (learner, academic, support staff of societal stakeholder) and involvement in one or more ENLIGHT action lines (Regional Academies, Challenge-based Education and Mobility). All questions were optional and the majority of these were asking a grade response from 0 to 5 (**where 0 represents “not at all” and 5 “very much”**). These questions were complemented by free text (optional) responses.

As regards the **ENLIGHT Mobility action line** specifically, a total of 98 responses were collected from the following stakeholders:

Stakeholder	Nº of responses	Sub-type	Nº of responses
ENLIGHT Learners in mobility	46	Bachelor student	9
		Master student	28
		PhD student	7
		Other	2
ENLIGHT Academics in mobility	17	Researcher	4
		Teacher	2
		Both	10
		No answer	1
ENLIGHT Support Staff in mobility	22	-	22
ENLIGHT Support Staff participating in the design and/or implementation of ENLIGHT mobility related activities	13	-	13
TOTAL	98	-	98

Table 2. Number of responses to the ENLIGHT Impact Survey – Mobility action line questionnaire, by type of stakeholder.

2. Description of the Observed Outcomes and of their Contribution to the Desired Impacts

Outcome 1: Increased Mobility

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ⁴⁸
5.1. INCREASED Mobility 5.1.1. More options for learning - large variety of high quality courses - more learning opportunities that are tailored to the specific needs of learners 5.1.2. Multiple international learning opportunities for staff (academics and non-academics)	5.1.1 a)	Quantitative	Nº of online lectures, courses, seminars, conferences organised in the context of ENLIGHT	Indicator build-upon project indicators	98
	5.1.1 c)	Quantitative	Nº of blended learning opportunities developed in the framework of ENLIGHT	Indicator build-upon project indicators	32
	5.1.1 d)	Quantitative	Nº of physical mobility opportunities	Project indicator	40
	5.1.1 e) (= 2.1.1 a))	Quantitative	Nº of ENLIGHT CBL pilot courses	Project indicator	39 ENLIGHT pilot courses. At least 20 applying a CBL methodology
	5.1.1 e)	Quantitative	Nº of Erasmus Mundus Joint Master programmes developed in the context of ENLIGHT	Project indicator	0 developed in the context of ENLIGHT. 3 under discussion

⁴⁸ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

<p>- More opportunities to do thesis at any university or co-supervision possibilities between partnering universities</p> <p>- More possibilities of co-working with people in other universities</p> <p>5.1.3. More students and staff activated</p> <p>- More students and staff going in mobility</p> <p>- Students/staff increasingly aware and encouraged to undertake more substantial international learning experiences</p>	5.1.1 f)	Quantitative	Nº of Joint/double degrees developed in the context of ENLIGHT	Project indicator	0
	5.1.2 a)	Quantitative	Nº of ENLIGHT Doctoral seminars	Project indicator	5
	5.1.2 c)	Quantitative	Nº of online ENLIGHT project-related events	Indicator build-upon project indicators	59
	5.1.2 d)	Quantitative	Nº of physical ENLIGHT project-related events	Indicator build-upon project indicators	26
	5.1.2 e)	Quantitative	Nº of exchange opportunities in teacher education	Project indicator	5
	5.1.3 a)	Quantitative	Nº of mobilities <u>within</u> ENLIGHT - Students	Project indicator	4380
	5.1.3 b)	Quantitative	Nº of mobilities <u>within</u> ENLIGHT - Staff (academics and non-academics)	Project indicator	4134
	5.1.3 c)	Quantitative/Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT stating they are encouraged to undertake other mobility experience	Survey	<p>- 45 out of 46 (98%) learners responded = or> to 3, out of 5. Average response: 4,46/5</p> <p>- All (100%) academics responded = or> to 3, out of 5. Average response: 4,41/5</p> <p>- 21 out of 22 (95%) support staff responded = or> to 3, out of 5. Average response: 4,41/5</p>

Table 3. Indicators for outcome 1: Increased Mobility

ENLIGHT has focused its first years' efforts in building-up the capacity and structures to enhance and improve the modalities for international learning and mobility. As outcome, ENLIGHT learners, academics, and support staff have been given access to an **increased number of international learning opportunities** at ENLIGHT partner universities.

Learners, in particular, have been given access to **more, more diverse and more flexible options for international learning**. Physical, online and blended courses, both short term and longer term, have been functionally embedded in course design and procedures within ENLIGHT. In the case of staff (academics and non-academics) **more possibilities of learning, co-working and interacting with peers from other ENLIGHT partner universities** have also been given to them.

As evidence, up to July 2023, ENLIGHT has given to its learners and staff (academics and non-academics) different international mobility opportunities, in the following forms:

- **Online international learning experience.** In total, ENLIGHT partners organised **98 online events in the context of the alliance, including lectures, courses, seminars, workshops and conferences**. Out of this figure, **59 were online ENLIGHT project-related events** (e.g. ENLIGHT webinars discussing Diversity; ENLIGHT Lectures on Climate Change, etc.). The other 39 online opportunities are mainly education and training opportunities, such as summer schools, education programmes, courses, etc..
- **Blended international learning experience.** In total, there were 32 blended learning opportunities developed mainly in the framework of the 39 ENLIGHT pilot courses, for example, in the framework of the AI for non-IT or the Interdisciplinary Study of the Climate Neutral City CBL pilot courses (cfr. Narrative of Change Challenge-based Education for further details).
- **Physically international learning experience.** In total, there were 40 physical mobility opportunities, including both 26 ENLIGHT project-related events (e.g. Teaching and Learning Conferences, the European Dialogues, the ENLIGHT Impact Conference), but also education

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and training courses, summer schools, etc. Physical mobilities developed specifically in the form of ENLIGHT Erasmus Mundus Joint Master programmes and joint/double degrees between the ENLIGHT partners were not possible since these programmes have not taken place up to date.

The increased number and more diverse and flexible forms of international mobility have resulted in a **high number of learners and staff** (academic and non-academic staff) **activated to undertake this type of experiences**.

According to data collected in July 2023, there were **4380 student mobilities** (at bachelor, master, doctorate levels) **between ENLIGHT partner universities**⁴⁹: 488 in the academic year 2020-2021; 2204 in the academic year 2021-2022; and 1684 in the academic year 2022-2023. These figures represent an increase of 352% from 2020-2021 to 2021-2022 on ENLIGHT student mobilities, but a decrease of 24% from 2021-2022 to 2022-2023.

As regards ENLIGHT staff mobility there was a total number of **4134 staff mobilities ENLIGHT partner universities**: 1437 in the academic year 2020-2021; 1743 in the academic year 2021-2022; and 957 in the academic year 2022-2023. This represents an increase of approximately 21% between 2020-2021 and 2021-2022, and a decrease from 45% from 2022-2023.

Whilst the significant increase of student and staff mobilities from 2020-2021 to 2021-2022 can be understood as due to the low baseline, related to the global pandemic and first year of operation of the ENLIGHT Alliance as such, the decrease from 2021-2022 to 2022-2023 can be understood as related to the absence of updated data to capture all the mobilities in 2022-2023 at the time of preparing this narrative (cfr. section 1.4 on data collection).

The positive trends are confirmed by the learners, academics and support staff responses to the ENLIGHT Impact Survey, who in great majority state being **encouraged to undertake another international learning experience after their participation in ENLIGHT mobility**: 98% of the 46 learner responders, all 17 academic responders (100%), and 95% of the 22 support staff responders answered positively to the related question. These are some of the free text optional comments of the consulted stakeholders:

(Support staff participating in a ENLIGHT mobility experience) *"It was extremely useful to discuss the challenges that we all face and potential solutions. **The shared experience was very positive.**"*

(Support staff participating in a ENLIGHT mobility experience) *"The meeting with the representatives from the Social Sciences/ Political Science was particularly useful, and we **made plans to follow up at the Teaching and Learning Conference 2023 in Bordeaux**"*.

In a more critical note, concerning EU regulatory barriers, an ENLIGHT academic stated:

"In our course the international experience was excellent. However, some of the EU regulations caused many problems. Particularly the BIP regulation that there must be at least 15 mobile students in order to get the funding doesn't work. There are always students who drop out in the last moment but we have invested a lot of work to make the on-site week happen. We request the EU to change this regulation".

⁴⁹ We recall that by ENLIGHT mobility experience we understand *"all international learning experience at another ENLIGHT university of both students and staff (researchers, academics, and non-academic staff). We take into consideration: online learning; virtual exchange (embedded in a physical course); blended learning; physical mobility, within ENLIGHT and funded by the budget of the Alliance or through other mobility schemes"*.

Summary of the observed outcomes

-ENLIGHT learners, academics, and support staff have been given access to an **increased number of international learning opportunities** at ENLIGHT partner universities. Learners have been given access to more, more diverse and more flexible options for international learning. Staff (academics and non-academics) have been given more possibilities of learning, co-working and interacting with peers from other ENLIGHT partner universities.

- **There is a high number of learners and staff (academic and non-academic staff) activated to undertake this type of international mobility experiences.** Figures have considerably increased from 2020-2021 to 2021-2022, whilst the absence of updated data for 2022-2023 do not allow to confirm this trend.

- Learners, academics and support staff are **encouraged to undertake another international learning experience after their participation in an ENLIGHT mobility.**

Outcome 2: Interconnected and Flexible Learning and Mobility

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ⁵⁰
5.2. INTERCONNECTED and FLEXIBLE LEARNING & MOBILITY 5.2.1. More flexible learning paths, catalogued and visualised 5.2.2. Easier way of searching courses 5.2.3. Students are able to create a unique mobility experience, based on their own needs/abilities 5.2.4. (for students) Seamless application process 5.2.5. Students collect and accumulate the outcomes of ENLIGHT learning experiences in a digital and transportable portfolio 5.2.6. Easier Automatic Recognition Processes: minimised administrative hurdles in credits transfer/ recognition 5.2.7. For staff in mobility: saving time, with less longer stays abroad and back/forth travelling 5.2.8. For Universities: better and simplified internal mobility processes; clear and smooth workflows	5.2.1 a)	Quantitative	Nº of courses catalogued in the course catalogue	Platform statistics	11.458
	5.2.1 b)	Quantitative	Nº of visits to the course catalogue	Platform statistics	16.455
	5.2.1 c)	Quantitative	Nº of individual visitors to the course catalogue	Platform statistics	7.491
	5.2.2	Quantitative/Qualitative	% of students having participated in a mobility within ENLIGHT acknowledging: - knowing the course catalogue platform - it was easy to identify the courses modules they were looking for in the platform - it was easy to get the information they were looking for - it was easy to apply to a course through the platform	Survey	30% of the consulted learners acknowledge knowing the course catalogue platform , whilst 9% possibly, 59% no, and 2% didn't respond. 89% of the consulted learners acknowledging knowing or possibly knowing the course catalogue also acknowledge it was easy to identify the courses they were looking for 89% of the consulted learners acknowledging knowing or possibly knowing the course catalogue also acknowledge it was easy to get the information they were looking for
	5.2.3 (= 5.3.3)	Quantitative/Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT acknowledging it was adapted to their own specific needs and challenges	Survey	43 out of 46 (93%) learners responded = or> to 3, out of 5. Average response: 4,04/5 16 out of 17 (94%) academics responded = or> to 3, out of 5. Average response: 3,94/5 19 out of 22 (86%) support staff responded = or> to 3, out of 5. Average response: 3,68/5
	5.2.5	Quantitative/Qualitative	% of students having participated in a mobility within ENLIGHT acknowledging this learning experience has been recognised in a digital badge	Survey	24% of learners responded "yes"; 61% "don't know"; 11% "no"; 2% "not applicable"; 2% didn't answer.
	5.2.6	Quantitative/Qualitative	% of students having participated in a mobility within ENLIGHT acknowledging	Survey	26 out of 46 (58%) learners responded <3, out of 5. Average response: 1,98

⁵⁰ In the ENLIGHT Impact Survey 0 represents "not at all" and 5 "very much".

			they faced administrative hurdles during the credit transfer/ recognition process		
	5.2.8 (=5.5.1)	Quantitative/ Qualitative	% of support staff involved in the implementation of the ENLIGHT mobility-related actions stating that the ENLIGHT flexible and interconnected learning and mobility processes have become more streamlined	Survey	8 out of 13 (62%) support staff responded = or> to 3, out of 5. Average response: 2,85

Table 4. Indicators for outcome 2: Interconnected and Flexible Learning and Mobility.

In connection with the increased number of international learning opportunities, ENLIGHT is offering **more flexible learning paths**, combining physical, blended and virtual mobility opportunities, both short and long-term (cfr. detailed figures in the section above). These flexible learning opportunities are **catalogued and visualised** at two different pages of the ENLIGHT general website. ENLIGHT learning opportunities jointly offered by at least 3 ENLIGHT partner universities (2 for virtual courses) are available here: <https://enlight-eu.org/students/courses> ; and the courses offered by one individual ENLIGHT university are available at the **ENLIGHT Course Catalogue**, which is available here: <https://courses.enlight-eu.org> . On 3 July 2023, there were **11.458 ENLIGHT courses catalogued** in the course catalogue. On the same date, the course catalogue had a total of **16.455 visits** from **7.491 individual visitors**.

However, only 39% of the Impact Survey learners participating in a ENLIGHT mobility experience (18 out 46) state knowing or possibly knowing the ENLIGHT Course Catalogue. Out of these 18 responses, 16 learners (89%) acknowledged it was easy to identify the courses/ modules they were looking for in the Catalogue, as well as to get the information they were looking for. This demonstrates that **even if the Course Catalogue is not yet widely known within the community of ENLIGHT learners in mobility, it meets the expectations of making it easy to find ENLIGHT partners' courses and getting relevant information in a single platform**.

Concerning the recognition process of ENLIGHT learners' mobility experience, **the majority of learner responders (61%) state do not knowing if it has been recognized in a digital badge**; whilst only 24% learners responded "yes", which as an evidence that this process is not yet widely spread across ENLIGHT partner universities. More generically, on ENLIGHT learners' views on the (potential) administrative hurdles during the credit transfer/ recognition process, **the majority of learner responders (58%) consider there were none/ low/ very low administrative hurdles**, the average response being 1,98 (where 0= not at all; and 5= very much). In this context, it is however worth highlighting the critical observations of some learner responders, who have mainly pointed out the long time this process has taken:

"Everything took long and I still have not received the announced individual feedback."

"Process took quite long, but the support from both universities were good."

"There was a delay in receiving the verified certificate from the host institution and there was an even bigger delay in having this added as an additional/optional module to my credit transcript."

"As it was organized by my home university XX, I didn't have any issues but I do know that my peers from other universities, faced quite some issues, eg. with the digital badge."

"The communication between the partner universities (and the time it took for them to answer important questions etc.) could have been better."

"Issue of the transcript of records took a long time."

"I have some uncertainty regarding the transferability of my credits."

"I cannot get my confirmation of participation from the University XX for the whole semester."

“I feel like there was a lot of administration involved in applying for and receiving the funding, since you had to prefund yourself, and be payed back by your group, which in turn had to be paid back by Enlight funding. Additionally, for receiving the funding it was required to write another report, on top of the reports that already had to be written for the summer school itself.”

On the side of support staff involved in the implementation of ENLIGHT mobility-related actions, there is also a general view that **ENLIGHT flexible and interconnected learning and mobility processes have become more streamlined** (62% of support staff responders responded positively to the related question, with an average response level of 2,85). In their comments on this issue, support staff involved in the implementation of ENLIGHT mobility-related actions show slightly divergent points of view. On the one side, there are those responders who say *“they [the processes] seem to have become more complicated (too much bureaucracy, lack of compatibility of different online tools)”*; on the other side those who say *“Yes, the ability to find courses has been greatly increased but there is still a lot of work to do”*.

Overall, and despite the more critical observations, the majority of ENLIGHT learners, academics and support staff having participated in an ENLIGHT international mobility experience responding to the Impact Survey are of the view that it was **adapted to their own specific needs and challenges** (93% of positive learner responses; 94% of academics; 86% of support staff).

Summary of the observed outcomes

- ENLIGHT flexible learning opportunities are **catalogued and visualized** though the ENLIGHT website. Even if the Course Catalogue is not yet widely known within the community of ENLIGHT learners in mobility, it meets the expectations of **making it easy to find ENLIGHT partners' courses and getting relevant information in a single platform**.
- Generally, there is an **easy credit transfer/ recognition process with none, low or very low administrative hurdles**. However, it is important to take note of some concerns related to the **long time these processes take**.
- Generally, **ENLIGHT learning and mobility processes is considered to have become more streamlined**.
- ENLIGHT international mobility is **adapted to the specific needs and challenges of ENLIGHT learners, academics and support staff**.

Outcome 3: More Inclusive Mobility

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ⁵¹
5.3. MORE INCLUSIVE MOBILITY 5.3.1. Increased awareness about diversity and inclusion as key element within mobility programmes (among students and staff)	5.3.1	Quantitative/ Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT considering that ENLIGHT takes into consideration diversity and inclusion in the mobility programmes	Survey	42 out of 46 (91%) learners responded = or> to 3, out of 5. Average response: 4,09/5 16 out of 17 (94%) academics responded = or> to 3, out of 5. Average response: 3,88/5 16 out of 22 (73%) support staff responded = or> to 3, out of 5. Average response: 3,36/5

⁵¹ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

<p>5.3.2. Increased awareness about mobility possibilities among underrepresented groups</p> <p>5.3.3. Mobility options are "more" customized to the needs of all community members (mobility should take into consideration the unique challenges faced by students when undertaking mobility)</p> <p>5.3.4. Increased mobility of underrepresented groups</p> <p>5.3.5. Wider scope of participants (including those underrepresented in international learning) in mobility</p>	5.3.2 a)	Quantitative/Qualitative	% of students a staff (academics and non-academics) having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented group acknowledging they are aware of other ENLIGHT mobility opportunities	Survey	6 out 10 (60%) learners considering being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group acknowledge they are aware / possibly aware of other ENLIGHT mobility opportunities 2 out 3 (67%) of academics considering being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group acknowledge they are aware / possibly aware of other ENLIGHT mobility opportunities 5 out 6 (83%) of support staff considering being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group acknowledge they are aware / possibly aware of other ENLIGHT mobility opportunities
	5.3.2 b)	Quantitative/Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented group acknowledging they are aware of other ENLIGHT mobility opportunities and would likely subscribe to it/them in the future.	Survey	9 out 10 (90%) learners considering being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group consider subscribing/possibly subscribing to other ENLIGHT mobility opportunities in the future All 3 (100%) academics considering being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group consider subscribing/possibly subscribing to other ENLIGHT mobility opportunities in the future All 6 (100%) support staff considering being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group consider subscribing/possibly subscribing to other ENLIGHT mobility opportunities in the future
	5.3.3 (=5.2.3)	Quantitative/Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT acknowledging it was adapted to their own specific needs and challenges	Survey	43 out of 46 (93%) learners responded = or> to 3, out of 5. Average response: 4,04/5 16 out of 17 (94%) academics responded = or> to 3, out of 5. Average response: 3,94/5 19 out of 22 (86%) support staff responded = or> to 3, out of 5. Average response: 3,68/5
	5.3.4. 5.3.5 a)	Quantitative/Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented group	Survey	10 out 46 (22%) learners consider being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group 3 out 17 (18%) academics consider being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group 6 out 22 (28%) support staff consider being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group
	5.3.5 b)	Quantitative/Qualitative	% of students and staff (academics and non-academics) having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented group having successfully completed their experience	Survey	All 10 (100%) learners considering being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group state having (or possibly having) successfully completed their ENLIGHT mobility experience. All 3 (100%) academics considering being (or possibly being) from a vulnerable/ disadvantage and/or underrepresented group state having (or possibly having) successfully completed their ENLIGHT mobility experience. 4 out 6 (67%) support staff considering being (or possibly being) from a vulnerable/ disadvantage and/or

					underrepresented group state having (or possibly having) successfully completed their ENLIGHT mobility experience.
	5.3.5 c)	Quantitative/ Qualitative	Difference in successful completion rates between students/staff having participated in a mobility within ENLIGHT considering being from a vulnerable, disadvantage and/or underrepresented and those not.	Survey	<p>0 difference between learners, since all 32 learners (100%) acknowledging <u>not being</u> from a vulnerable/ disadvantage and/or underrepresented group state having (or possibly having) successfully completed their ENLIGHT mobility experience.</p> <p>14 percentage points difference between academics, since only 12 out of 14 (86%) of academics acknowledging <u>not being</u> from a vulnerable/ disadvantage and/or underrepresented group state having (or possibly having) successfully completed their ENLIGHT mobility experience.</p> <p>-21 percentage points difference between support, since 14 out of 16 (88%) of support staff acknowledging <u>not being</u> from a vulnerable/ disadvantage and/or underrepresented group state having (or possibly having) successfully completed their ENLIGHT mobility experience.</p>

Table 5. Indicators for outcome 3: More Inclusive Mobility.

The inclusion of underrepresented, disadvantaged and vulnerable groups⁵² in higher education, and more specifically in ENLIGHT international mobility, has been a key priority of ENLIGHT in general and the Mobility action line leaders in particular (cfr. section 1 for a description of the activities undertaken in this context).

In fact, the large majority of the consulted stakeholders (learners, academics and support staff participating in an ENLIGHT international mobility experience) **do recognise that ENLIGHT takes into consideration diversity and inclusion in its mobility programmes** (the % of positive responses vary from 94% from academics to 73% from support staff). Likewise, as previously highlighted, they are also of the view that the mobility experience they participated in was **adapted to their own specific needs and challenges** (93% of positive learner responses; 94% of academics; 86% of support staff).

In the impossibility of quantifying the exact figures (and percentages) of ENLIGHT learners, academics and support staff participating in ENLIGHT international mobility coming from a vulnerable, disadvantaged and/or underrepresented groups, the Impact Survey allowed the impact task force to identify the percentage of responders who themselves consider pertaining to this group. According to the Survey results, approximately **22% of learners, 18% of academics and 28% of support staff**

⁵² For the purposes of the present pilot case study, we refer to vulnerable, disadvantaged and/or underrepresented learner in the sense used at Annex II to the Rome Communiqué (2020) Glossary of Terms http://ehea.info/Upload/Rome_Ministerial_Communique_Annex_II.pdf, where it is stated that a "(...) group of learners is **underrepresented** in relation to certain characteristics (e.g. gender, age, nationality, geographic origin, socio-economic background, ethnic minorities) if its share among the students is lower than the share of a comparable group in the total population. (...) **Disadvantaged students** often face specific challenges compared to their peers in higher education. This can take many forms (e.g. disability, low family income, little or no family support, orphan, many school moves, mental health, pregnancy, having less time to study because one has to earn one's living by working or having caring duties). **Vulnerable students** may be at risk of disadvantage and in addition have special (protection) needs. For example, because they suffer from an illness (including mental health) or have a disability, because they are minors, because their residence permit depends on the success of their studies (and thus also on decisions made by individual teachers), because they are at risk of being discriminated against. These learners are vulnerable in the sense that they may not be able to ensure their personal well-being, or that they may not be able to protect themselves from harm or exploitation and need additional support or attention.

participating in an ENLIGHT international mobility experience consider being from a vulnerable, disadvantaged and/or underrepresented group.

Important to note is also the fact that these **specific stakeholders are/have become aware of other ENLIGHT mobility opportunities** (60% of learners, 67% of academics and 83% of support staff from vulnerable, disadvantaged and/or underrepresented groups) and **do consider to subscribe to other ENLIGHT mobility opportunities in the future** (90% of learners, 100% of academics and 100% of support staff from vulnerable, disadvantaged and/or underrepresented groups). This demonstrates that ENLIGHT efforts as regards the inclusion of vulnerable, disadvantaged and/or underrepresented groups in its mobility programmes **are expected to remain on time**.

When assessing the difference in successful completion rates between learners/ staff participating in ENLIGHT international mobility experience considering being from a vulnerable, disadvantaged and/or underrepresented group and those not, it is relevant to highlight that:

- **There is no difference between learners from the two groups.** All have successfully completed their ENLIGHT mobility experience.
- **On the side of academics, all those coming from a vulnerable, disadvantaged and/or underrepresented group have successfully completed their ENLIGHT mobility experience,** whilst only 86% academics not pertaining to this group have successfully done so; a 14-percentage points difference.
- **On the side of support staff, there is an opposite order.** Whereas 67% of support staff coming from a vulnerable, disadvantaged and/or underrepresented group have successfully completed their ENLIGHT mobility experience, 88% of support not coming from this group has successfully completed it; a minus 21-percentage points difference.⁵³

Summary of the observed outcomes

- **ENLIGHT is recognized to take into consideration diversity and inclusion in its mobility programmes.**
- **ENLIGHT international mobility is considered to be adapted to the specific needs and challenges of ENLIGHT learners, academics and support staff.**
- **From the ENLIGHT Impact Survey it is possible to deduce ENLIGHT mobilises learners (22%), academics (18%) and support staff (28%) from vulnerable, disadvantaged and/or underrepresented groups.**
- **With the exception of support staff, learners and academics from vulnerable, disadvantaged and/or underrepresented groups have all successfully completed their ENLIGHT mobility experience.**

⁵³ A word of caution should, however, be added to this assessment, as the data for the calculation of the success rates is using as basis very low absolute numbers.

Outcome 4: Greener Mobility and More Sustainable Living

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23
5.4. GREENER MOBILITY & MORE SUSTAINABLE LIVING 5.4.1. Increased awareness among academics, staff and students about sustainability and the impact of mobility travelling 5.4.2. New ways/ model of engaging in international mobility without expanding the carbon footprint 5.4.3. staying climate-neutral despite mobility increase	5.4.1 b)	Quantitative/ Qualitative	% of students and staff (academics and non-academics) participating in a physical/blended mobility within ENLIGHT acknowledging taking sustainability into account in their travel and accommodation options.	Survey	39 out of 46 (85%) learners responded = or> to 3, out of 5. Average response: 3,67/5 All (100%) academics responded = or> to 3, out of 5. Average response: 3,47/5 16 out of 22 (73%) support staff responded = or> to 3, out of 5. Average response: 3,43/5
	5.4.2 a)	Quantitative	% of virtual students' mobilities compared to the overall aggregated mobilities (virtual, physical and blended) funded by ENLIGHT budget.	Indicator build-upon project indicators	2020-2021 academic year: 83% (407/498) 2021-2022 academic year: 21% (471/2204) 2022-2023 academic year: 26% (430/1684)
	5.4.2 b)	Quantitative	% of virtual and blended students' mobilities compared to the overall aggregated mobilities (virtual, physical and blended) funded by ENLIGHT budget.	Indicator build-upon project indicators	2020-2021 academic year: 83% (407/498) 2021-2022 academic year: 69% (1511/2204) 2022-2023 academic year: 65% (1093/1684)

Table 6. Indicators for outcome 4: Greener Mobility and More Sustainable Living.

Sustainability is at the core of the ENLIGHT alliance mission, and one of its major objectives is to conciliate increased international mobility (cfr. outcome 1: Increased Mobility) with environmental protection and limited travel carbon footprint.

The effects of ENLIGHT efforts in the area of sustainability (cfr. section 1) are recognised by the responders of the ENLIGHT Impact Survey participating in an international mobility experience. According to the Survey results, **85% of learners, 100% of academics and 73% of support staff have taken sustainability into account in their travel and accommodation options.** The stakeholders' observations on these matters give evidence of the efforts undertaken in this area, but also of the difficulties and the costs of choosing more sustainable travel options, mainly time-loss, as well the importance of further reducing the number of physical mobilities and choosing central locations as destinations.

From a learner: ***"It's sustainable because online course and it reduces lot of expenses and flexibility"***.

From a member of the support staff: ***"I chose not to fly but to take a boat. There was no additional compensation for my choice of transport."***

From a member of the support staff ***"(...) It's very difficult to travel sustainably from Estonia without significant time loss, for example."***

From an academic: ***"Serving vegetarian food during ENLIGHT events is a great initiative. But there is a lot of flying: In-person meetings are crucial, but ENLIGHT should promote more sustainable travel by train and ferries etc, even if this takes more time. Promoting sustainable universities should mean slower pace of work and less flying. This needs commitment from the"***

University, it cannot be left to individual students, lecturers and other staff to make this happen. (It is also a work load issue)".

From a learner: ***"I do think sustainability is largely taken into account in the content of the ENLIGHT initiatives, but there is a lack in sustainability considerations when it comes to the mobility itself. For instance, a lot of people fly to the initiatives, whereas that is not always necessary and definitely not always the most sustainable transport option.***

From a learner: We had to travel by plane to reach the location (Ireland), otherwise it would not be very feasible. However, a more central location could have been chosen such as Brussels, to be reached by the different university participants.

In fact, a way ENLIGHT has been promoting as an alternative to international physical mobility and a way to reduce Co2 emissions has been the **organisation and offering of virtual or blended mobility experiences**. However, evidence shows that **the % of virtual student mobilities among all student mobilities within ENLIGHT partner universities has decreased** from 2020-2021 (83%) to 2021-2022 (50%), which is understood as the consequence of the global pandemic that has affected the overall Higher Education mobility in 2020-2021 and the retour to the "normal" patterns in 2021-2022. In 2022-2023 this % is of 26% but, as already mentioned, the figures are not fully complete (cfr. section 1.4. on data collection). A similar pattern has been observed through the analysis of the % of virtual and blended student mobilities compared to the overall student mobilities in ENLIGHT (83% in 2020-2021; 69% in 2021-2022; 65% in 2022-2023).

Summary of the observed outcomes

-According to mobility stakeholders, **ENLIGHT has taken sustainability into account in their travel and accommodation options**. However, they also highlight the difficulties and the costs of choosing more sustainable travel options.

- Despite ENLIGHT efforts to reduce the carbon footprint of ENLIGHT student mobility through the offering of virtual and blended mobility options, there is no evidence of these effects as the % of virtual and blended mobilities has been decreasing over the last years. The 2020-2021 pandemic and the difficulties to capture all mobility figures for 2022-2023 should be taken into consideration in the assessment of those effects.

Outcome 5: (Undesired) More Administrative Hurdles for Staff

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ⁵⁴
5.5. Undesired outcomes <i>More administrative hurdles for staff, including more bureaucracy, internal requests and bugs to deal with</i>	5.5.1 (=5.2.8)	Quantitative/ Qualitative	% of support staff involved in the implementation of the ENLIGHT mobility-related actions stating that the ENLIGHT flexible and interconnected learning and mobility processes have become more streamlined	Survey	8 out of 13 (62%) support staff responded = or> to 3, out of 5. Average response: 2,85
	5.5.2	Quantitative/ Qualitative	Nº of extra petitions staff involved in the implementation of the ENLIGHT mobility-related actions state having to deal with in comparison to other mobility-related programmes.	Survey	Average response: 33 extra petitions (in a scale from 0-100)

⁵⁴ In the ENLIGHT Impact Survey 0 represents "not at all" and 5 "very much".

	5.5.3	Quantitative/ Qualitative	Nº of extra digital bugs staff involved in the implementation of the ENLIGHT mobility-related actions state having to deal with in comparison to other mobility-related programmes.	Survey	Average response: 27 extra digital petitions (in a scale from 0-100)
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Table 7. Indicators for outcome 5: More Administrative Hurdles for Staff.

During the consultation on the expected outcomes and desired impact of the ENLIGHT Mobility action line, support staff have raised the attention to the potential undesired effects of increased, flexible, inclusive and green mobility, namely the creation of more administrative hurdles for staff with *“more internal requests/ bugs to deal with”*. The results of the ENLIGHT Impact Survey show these effects are real, but minor.

In fact, as previously highlighted (cfr. outcome 2 section), support staff responders involved in the implementation of ENLIGHT mobility-related actions share a general view **ENLIGHT flexible and interconnected learning and mobility processes have become more streamlined** (62% of support staff responders responded positively to the related question, with an average response level of 2,85). In this line, a support staff member mentioned *“Yes, the ability to find courses has been greatly increased but there is still a lot of work to do”*. But another support staff member made the following observation *“they [the processes] seem to have become more complicated (too much bureaucracy, lack of compatibility of different online tools)”*.

On the specific questions related to the number of **extra petitions** and **digital bugs** ENLIGHT support staff had to deal with in comparison to other mobility-related programmes the figures are relatively low: with a response of 33 extra petitions and 27 extra digital bugs on average (scale 0-100). In their optional qualitative observations, a support staff responder mentioned *“I think it might be even less, compared to other initiatives”*.

Summary of the observed outcomes

- There is a general perception that **ENLIGHT flexible and interconnected learning and mobility processes have become more streamlined** among support staff involved in the implementation of ENLIGHT mobility-related actions.
- They recognise, however, they have **more extra petitions and digital bugs** to deal with compared to other mobility-related programmes.

3. Impact Assessment

From the analysis above one can state that the ENLIGHT Mobility action line is bringing about change and **have met all expected outcomes, desired and undesired**. However, the nature of these changes varies in some cases in terms of their “temporality”, “intention”, “repair capacity”, “intensity”, and “extension” as defined in Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact ⁵⁵. The table below makes the assessment of the observed changes by outcome area.

OUTCOME	TEMPORALITY	INTENTION	REPAIR CAPACITY	INTENSITY	EXTENSION
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⁵⁵ For the full description of the different types of impact, please consult Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact.

5.1. Increased Mobility	<p>Primary: immediate incidence on stakeholders.</p> <p>Cumulative: effects are increased/ extended to different areas, if the action is continued in time.</p> <p>Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities.</p> <p>Permanent: effects remain after the end of the project.</p>	<p>Direct impact: direct interaction between the action line and the transformation observed. It was intentional.</p>	Irreversible	<p>Significant: abundant evidence to demonstrate the changes from 2020-2021 to 2021-2022 academic years</p> <p>Null: not enough evidence to demonstrate the changes from 2021-2022 to 2022-2023 academic years</p>	<p>Partial: effects on delimited geographical spaces</p>
5.2. Interconnected and Flexible Learning and Mobility	<p>Primary: immediate incidence on stakeholders.</p> <p>Cumulative: effects are increased/ extended to different areas, if the action is continued in time.</p> <p>Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities.</p> <p>Temporary: effects can be stopped if the action terminates.</p>	<p>Direct impact: direct interaction between the action line and the transformation observed. It was intentional.</p>	Reversible	<p>Moderate: sufficient evidence to demonstrate the changes, given the number of courses catalogued and the % of responders consider there were none/low/very low administrative hurdles.</p>	<p>Partial: effects on delimited geographical spaces</p>
5.3. More Inclusive Mobility	<p>Primary: immediate incidence on stakeholders.</p> <p>Cumulative: effects are increased/ extended to different areas, if the action is continued in time.</p> <p>Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities.</p> <p>Permanent: effects remain after the end of the project.</p>	<p>Direct impact: direct interaction between the action line and the transformation observed. It was intentional.</p>	Irreversible	<p>Significant: abundant evidence to demonstrate the changes. The changes are recognised by between 75% to 100% of the consulted stakeholders.</p>	<p>Partial: effects on delimited geographical spaces</p>
5.4. Greener Mobility and More Sustainable Living	<p>Primary: immediate incidence on stakeholders.</p> <p>Cumulative: effects are increased/ extended to different areas, if the action is continued in time.</p> <p>Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities.</p> <p>Permanent: effects remain after the end of the project.</p>	<p>Direct impact: direct interaction between the action line and the transformation observed. It was intentional.</p>	Irreversible	<p>Moderate: sufficient evidence to demonstrate the changes, given the % of positive responses of the consulted stakeholders; but also the evolution of the % of virtual/blended mobilities compared to all mobilities.</p>	<p>Partial: effects on delimited geographical spaces</p>
5.6. More Administrative Hurdles for Staff	<p>Primary: immediate incidence on stakeholders.</p> <p>Cumulative: effects are increased/ extended to different areas, if the action is continued in time.</p> <p>Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities.</p> <p>Temporary: effects can be stopped if the action terminates.</p>	<p>Direct impact: direct interaction between the action line and the transformation observed; even it was not intended by the action leaders.</p>	Reversible	<p>Minor: little evidence to demonstrate the changes. 33 extra petitions and 27 extra digital bugs on average in a scale of 0 to 100.</p>	<p>Partial: effects on delimited geographical spaces</p>

Table 8. Assessment of the observed outcomes in function of their “temporality”, “intention”, “repair capacity”, “intensity”, and “extension”.

The general assessment of the changes and effects brought by the ENLIGHT Mobility action line show that they are primary, cumulative and synergetic, direct, partial, can be irreversible as well as reversible. Their intensity varies in function of the observe outcome, from null to significant.

The ENLIGHT Mobility action line, associated with the efforts of other ENLIGHT activities and external determinants, will be contributing to bring about further changes (impact) on:

- **Students and staff (academics and support staff) in mobility**, who thanks to their international mobility experience are in the path to become globally engaged citizens, empowered with transversal skills and competences, socially skilled, motivated and with higher employment opportunities. In the future, ENLIGHT students and staff in mobility should not be bound time and place, and be given the opportunity of following an international

experience at any of the universities at any time, and feeling at home at any of the ENLIGHT partner universities. This impact would be mainly derived from outcomes 1: *increased mobility*, 2: *interconnected and flexible learning and mobility*, and 3: *more inclusive mobility*.

- **ENLIGHT Alliance, its universities, and the European Higher Education and Research Areas**, where short-term mobility becomes a regular part of studies and career development, the education offer is of high quality, universities' procedures become more homogenized and the overall European Higher Education Area is more internationalized, attractive, inclusive and sustainable. This impact would be derived from outcomes 1: *increased mobility*, 2: *interconnected and flexible learning and mobility*, 3: *more inclusive mobility*, and 4: *greener mobility and more sustainable living*.
- **Society**. Local communities would have more foreign students and university staff coming to their cities/regions, overall population's travel behaviours would change and the action line would contribute to climate neutrality. This impact would be derived from outcomes 1: *increased mobility*, 2: *interconnected and flexible learning and mobility*, 3: *more inclusive mobility*, and 4: *greener mobility and more sustainable living*.

ENLIGHT REGIONAL ACADEMIES

1. Introduction

1.1. What is/What do we understand by ENLIGHT Regional Academies?

Description of the action line objectives

The ENLIGHT Regional Academies represent the local/regional quadruple helix structures, bringing together learners, academics, business, policy-makers and civil society players around societal challenges. ENLIGHT Regional Academies main aim is to *consolidate these connections* at the local/regional level and *fully grasp the multi-perspective character of the challenges* that emerge in the local context and that require the involvement of different stakeholders.

The ENLIGHT Regional Academies are the *forum for identifying the local/ regional challenges*, and as such give *input to the ENLIGHT Think Tank core groups for designing the learning formats* through identifying actual local challenges for those learning formats, and defining the complex dynamics behind the challenges, as well as their needed transdisciplinary approach; therefore, the strong link between this action line and the ENLIGHT Challenge-based Education action line⁵⁶. Likewise, the identified challenges could be the basis for future research and innovation projects and solutions.

The ENLIGHT Regional Academies are established at the level of each ENLIGHT region. Demo days have been planned to be organised annually to showcase the work of the ENLIGHT Regional Academies to a broader public and enhance citizens' participation. The 9 regional academies are connected with one another at the alliance level through the *European Dialogues*. As an annual conference, the European Dialogues provide a synchronous setting to facilitate the structural dialogue that has emerged at the 9 regional academies and broaden the awareness of ENLIGHT across Europe. The European Dialogues are meant to enrich the challenge-based learning and teaching approaches of ENLIGHT and amplify challenge-based research and innovation actions. The ENLIGHT Regional Academies' approach is further broaden up to the global scale via the *ENLIGHT Global Dialogues*.

Description of the activities carried out so far and related outputs

The ENLIGHT Regional Academies are developed in the context of Work Package 5 (WP5 Outreach) of the ENLIGHT Erasmus+ project. [9 regional academies](#) have been established connecting local and regional stakeholders. Together they have identified and delineated actual societal challenges that are compiled in the [ENLIGHT Challenge Database](#) and have inspired ENLIGHT challenge-based learning pilot courses and future research and innovation projects.

ENLIGHT has also organised annual [European Dialogues events](#) (2 consecutive remote events and 2 physical events) to connect Regional Academies with each other. The two physical European Dialogues events were also used to showcase the AIMday (Academic Industry Meeting day) aimed at sparking new ideas for research project or new business ideas in collaboration with [WP5 of the Horizon 2020 ENLIGHT RISE project](#). In parallel, ENLIGHT has also launched two editions of the [ENLIGHT Global Dialogues](#) focused on the theme of Sustainable Campuses and Communities. A Global Citizenship Award will be given to 4 students led initiatives during the Teaching & Learning Conference in October

⁵⁶ ENLIGHT Challenge-based Learning is also an action line selected under a similar Impact Assessment exercise.

2023. The Global Citizenship Award is a recognition of engagement of student led projects on sustainability projects on university campuses.

1.2 Why doing the Impact Assessment of Action Line ENLIGHT Regional Academies? What is intended with the Impact Assessment of Action Line ENLIGHT Regional Academies?

The primary goal of this impact assessment pilot case study⁵⁷ has been **to demonstrate, test and refine the potential of the ENLIGHT Methodology 1.0 for Impact Assessment and respective tools**. Thanks to the experience of the ENLIGHT Regional Academies pilot case study, a refined and simplified Methodology 2.0 for Impact Assessment has been proposed in the form of Deliverable 81.

The ENLIGHT Regional Academies have been selected as pilot case study because it is considered as the main ENLIGHT action line with the potential to drive impact on the **ENLIGHT multi-stakeholder, multi-scale networks**. In fact, as previously highlighted, the ENLIGHT Regional Academies action line aim at connecting at local/regional level learners, academics, business, policy-makers and civil society players around societal challenges. At the same time, the ENLIGHT Regional Academies are connected with one another at the alliance level through the European Dialogues and have a global dimension through the Global Dialogues.

The ENLIGHT Regional Academies have also been selected because they offer potential to bring about change and impact on **ENLIGHT Learning Ecosystem** as the identified and explored societal challenges are expected to inspire ENLIGHT educational programmes, as well as to **feed into new research and innovation projects in connection with ENLIGHT RISE Innovation Districts** (supported under Horizon 2020).

1.3 Scope of the impact assessment exercise: ENLIGHT Regional Academies

Theory of Change Causal Chain of Impact

The diagram below (figure 2) illustrates the ENLIGHT Regional Academies' expected outcomes and desired impact, as well as how these desired changes are expected to happen, taking into consideration its inputs (resources for its implementation), the specific activities carried out by the team (both in the context of WP5 Outreach and WP2 ENLIGHT Challenge Based Learning), and their outputs (the products deriving directly the activities).

The crafting process of the theory of change causal chain of impact has demonstrated to be a never-ending evolving process that can be continuously enriched, as both the action line and the impact assessment exercise evolves and stakeholders' expectations are being integrated.

In the case of the ENLIGHT Regional Academies, the main stakeholders affected directly by the action line are:

- **Learners** (Bachelor, Master, Doctoral students, Lifelong learners);
- **Academics** (Teachers/ Lecturers / Researchers);
- **Support Staff**;
- **Societal Stakeholders:** business, research organisations, public authorities, civil society organisations, and society in general.

⁵⁷ In parallel to this pilot case study, 2 pilot case studies have been carried out to demonstrate, test and refine the potential of the ENLIGHT Methodology 1.0 for Impact Assessment and respective tools. These are pilot case studies of the Challenge-base Education action line and the Mobility action line.

Both stakeholders from the academia (learners, academics, and support staff) as well as societal stakeholders have been classified as **primary stakeholders**, since they are directly affected and related to this action line, in the logic that the Regional Academies represent the local/regional quadruple helix structures bringing together learners, academics, business, policy-makers and civil society players around societal challenges⁵⁸.

The affected stakeholders have been consulted on the action line expected outcomes and desired impact during an **Impact Workshop** on 12 May 2022. This workshop was organised as a side-event of the European Dialogues event at the University of Uppsala (11-12 May 2022). The workshop gathered societal stakeholders (4), academic staff (18), and learners (5) from ENLIGHT regions to discuss their views about the expected outcomes and desired impact of the Regional Academies action line. Participants were divided in three sub-groups representing the three different types of stakeholders. They were invited to reflect around 3 questions:

7. **The dream:** which fundamental changes/ transformations/ impact would you like the Regional Academies to bring about in the future (you can refer to the long-term impact on individuals, the university, the region, the education system, Europe, global)?
8. **The achievement:** which short-term changes/effects do you think the Regional Academies will actually have on you, your organisation/ university, other stakeholders?
9. What, in your view, would be **evidence** (qualitative or quantitative) that the envisaged changes/impact have effectively been realised?



Figure 1. Stakeholders at the ENLIGHT Impact Workshop on Regional Academies, during the European Dialogues Event (University of Uppsala, 11-12 May 2022).

Besides the workshop, the **ENLIGHT Student Network** has also been consulted on the expected outcomes and desired impact of the ENLIGHT Regional Academies, which has sent its views in the form of a paper.

For the Regional Academies action line (as well as for the Challenge-based Education and Mobility action lines) the ENLIGHT Impact Task Force has crafted 5 versions of the theory of change diagrams, reflecting both the views of the ENLIGHT Regional Academies' action leaders and of the consulted stakeholders. More specifically:

- ToC 1.0 was built taking into consideration project proposal description;
- ToC 2.0 was built taking into consideration action lines leaders' representatives first inputs;
- ToC 3.0 was built taking into consideration action line leaders' comments;

⁵⁸ Cfr. Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact for further details on stakeholders classification.

- ToC 4.0 breaks down expected outcomes and desired impact by type of consulted stakeholder;
- ToC 5.0 merges all stakeholders' expectations and desired impacts into one single diagram, including action leaders' considerations based on the action line most recent developments. This was the version used for the elaboration of indicators (cfr. next section).

It is important to note that most of the expected outcomes and desired impacts as formulated by stakeholders are aligned with those previously identified by action leaders, but with a greater level of detail. Nevertheless, there were new ones that were added, such as the expected outcome 5. *Innovative solutions to concrete problems*, outcome 6. *Improved society awareness of ENLIGHT universities as key players in the solving of real problems* or the desired societal impact on “*Better decision-making*”.

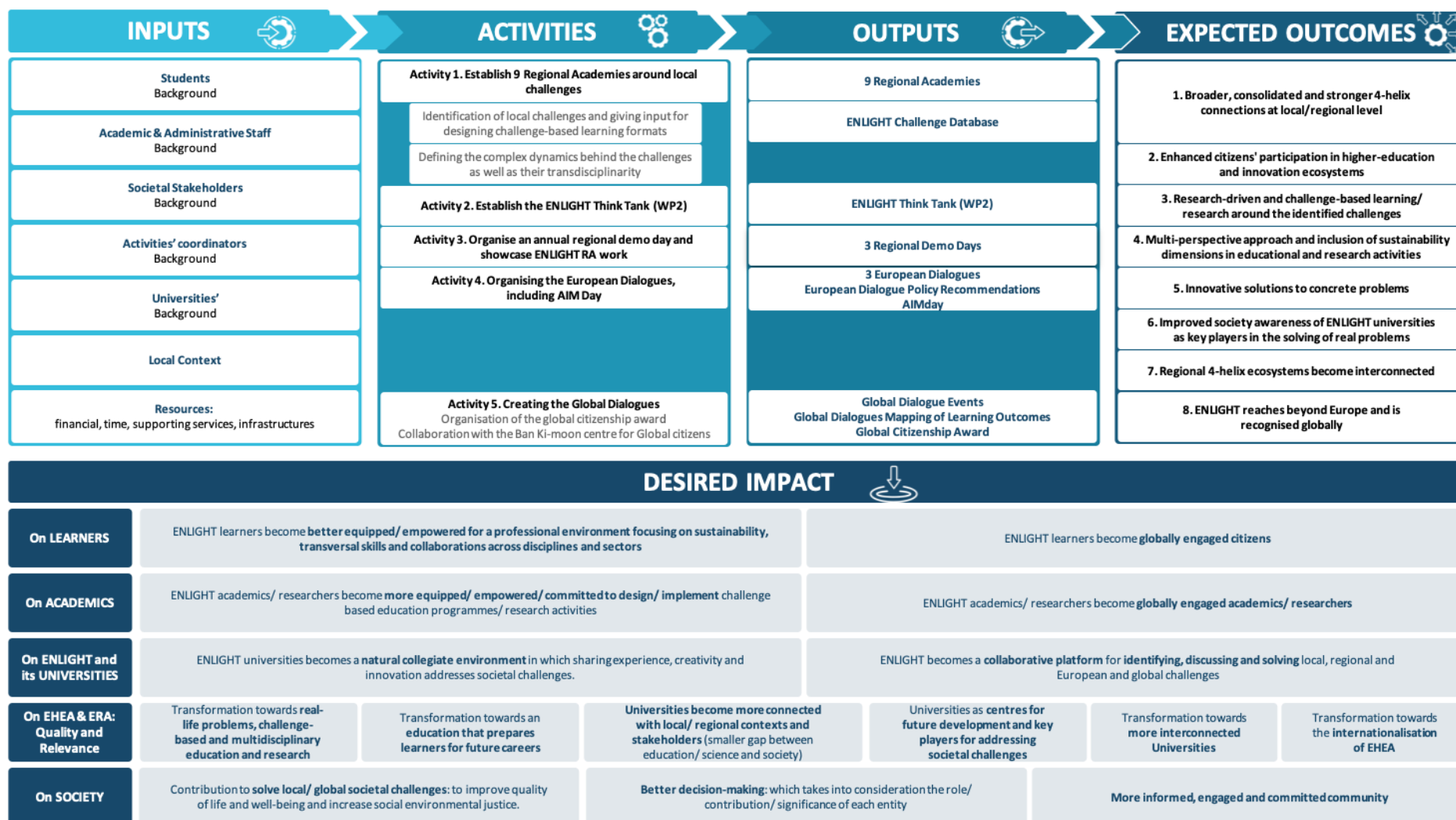


Figure 2. Theory of Change 5.0 of the ENLIGHT Regional Academies action line.

Indicators development

The composition of indicators for ENLIGHT pilot case studies was made taking as reference the expected outcomes and the desired impact of the theory of chain (ToC) causal chain of impact (cfr. above). On this basis, the ENLIGHT impact task force has used the relevant:

- ENLIGHT project own indicators;
- ENLIGHT universities' available data;
- Action line specific (performance) indicators;
- Stakeholders' suggestions for evidence.

The proposed indicators are both of quantitative and qualitative nature. They have all been consulted and contrasted with the ENLIGHT Regional Academies' action leaders on both their relevance (*are the proposed indicators capturing well the expected/desired changes? Are any others that should be taken into account?*), on the viability and on the means of collecting data for the identified indicators in the given period of time (up to 14 July 2023).

The table below illustrates the final list of indicators, highlighting their links with the expected outcome and the means of collection. The table also distinguishes between those indicators which data has been collected during the project life-time from those indicators for which data will be collected at a later stage. In the last case, these are indicators that cannot be used in the short-time as some of the activities are still ongoing and/ or the expected changes can only be observed in the medium to long-term, beyond the duration of the pilot case study.

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	COLLECTION DATE/ COMMENT
6.1. Broader, consolidated and stronger 4-helix connections at local/ regional level a) increased, more active and easier 4-helix dialogues and collaborations b) 4-helix organisations' institutional changes (e.g. commitment, resources, procedures) towards enhanced collaboration c) 4-helix structures as units tightly connected to their ecosystems	6.1.1 a)	Quantitative	Nº of learners, academics, support staff, societal stakeholders' representatives participating in the different RA and related initiatives (RA, demo days, European Dialogues, Global Dialogues etc.)	Indicator build-upon project indicators	July 23
	6.1.1 b)	Quantitative	Nº of academic and societal stakeholders' organisations participating in the different RA and related initiatives (RA, demo days, European Dialogues, Global Dialogues etc.)	Indicator build-upon project indicators	July 23
	6.1.3 a)	Quantitative	Nº of individuals from societal stakeholder organisations (business, policy making, civil society) participating in the ENLIGHT CBE pilot courses	Indicator build-upon project indicators	To be captured at a later stage
	6.1.3 b)	Quantitative	Nº of societal stakeholder organisations (business, policy making, civil society organisations) participating in the ENLIGHT CBE pilot courses	Indicator build-upon project indicators	July 23
	6.1.4 a)	Quantitative	Nº of jointly identified local/regional challenges	Project indicator	July 23
	6.1.4 b)	Quantitative/ Qualitative	Nº of selected local/regional challenges	Indicator build-upon project indicators	July 23
	6.1.5	Quantitative	Nº of new collaboration agreements signed as result of the RA related activities	Project partners data	To be captured at a later stage
	6.1.6	Quantitative	Nº of redesigned & new joint CBL pilot courses launched as result of the RA related activities	Project partners data	July 23
	6.1.7	Quantitative	Nº of new joint research or innovation projects launched as result of the RA related activities	Project partners data	To be captured at a later stage
	6.1.8	Quantitative	Nº of regional joint publications derived from the RA related activities	Project partners data	To be captured at a later stage
	6.1.9	Quantitative	Nº of joint patents derived from the RA related activities	Project partners data	To be captured at a later stage
	6.1.10	Quantitative/ Qualitative	4-helix players' opinion on their collaboration with other players in the context of their participation in ENLIGHT CBE	Survey	July 23
	6.1.12	Quantitative/ qualitative	Nº/% of academics, support staff and societal stakeholders stating they are more open, receptive and proactive to new 4-helix collaboration opportunities .	Survey	July 23
	6.1.13	Quantitative/ qualitative	Nº/% of learners stating they have more opportunities to work with different quadruple-helix stakeholders (Academia, Public Authorities, Business, Civil Society Organisations)	Survey	July 23

	6.1.14	Quantitative/ Qualitative	Nº/% of academics, support staff and societal stakeholders stating they have observed (and/or introduced) an institutional change (e.g.commitment, resources, tools, procedures) in the way their organisations interact with other 4-helix players.	Survey	To be captured at a later stage
6.2. Enhanced citizens participation in higher-education and innovation ecosystems a) RA related activities become a space for citizens to express their problems b) Citizens are taken in consideration as active-players in the development of solutions c) increased awareness of challenges among citizens	6.2.1	Quantitative	Nº /% of citizens participating in the different RA and related initiatives (RA, demo days, European Dialogues, Global Dialogues etc.)	Indicator build-upon project indicators	To be captured at a later stage
	6.2.2	Quantitative	Nº and % of citizens participating in challenge-based education and research initiatives.	Indicator build-upon project indicators	To be captured at a later stage
	6.2.3	Qualitative	Opinion of citizen participants on the (potential/ real) effects the RA related activities had on them	Survey	To be captured at a later stage
	6.2.4	Quantitative/ Qualitative	4-helix players' intention to integrate citizens' perspectives in their activities	Survey	To be captured at a later stage
	6.2.5	Quantitative/ Qualitative	Degree of awareness of local/ regional challenges among citizens	Survey	To be captured at a later stage
6.3. Research-driven and challenge-based learning/ research around the identified challenges a) Students get the opportunity and experience to work on real problems with social agents b) Redesigned/ new learning modules (curriculum is flexible, open to innovation, integrate the collaboration with societal stakeholders, designed to address societal challenges , in terms of long-term impact and global outreach) c) research is designed to answer identified challenges	6.1.6	Quantitative	Nº of redesigned & new joint CBL pilot courses launched as result of the RA related activities	Project partners data	July 23
	6.3.1	Quantitative	Nº of redesigned/ new learning modules as result of the RA related activities	Project partners data	July 23
	6.3.2	Quantitative	Nº of students participating in CBL pilot courses with the involvement of regional stakeholders	Project partners data	July 23
	6.3.3	Quantitative	Nº of degree final projects around the RA identified challenges and done in collaboration with local/regional players.	Project partners data	To be captured at a later stage
	6.3.4	Quantitative	Nº of Master thesis around the RA identified challenges and done in collaboration with local/regional players.	Project partners data	To be captured at a later stage
	6.3.5	Quantitative	Nº of PhD thesis around the RA identified challenges and done in collaboration with local/regional players.	Project partners data	To be captured at a later stage
	6.1.7	Quantitative	Nº of new joint research or innovation projects launched as result of the RA related activities	Project partners data	To be captured at a later stage
	6.3.6 a)	Qualitative	Students' opinion on the added value of the CBL pilot courses derived from the RA related activities	Survey	July 23
	6.3.6 b)	Qualitative	Academics' opinion on the added value of the CBL pilot courses/ research projects derived from the RA related activities	Survey	July 23
	6.3.6 c)	Qualitative	Support Staff opinion on the added value of the CBL pilot courses/ research projects derived from the RA related activities	Survey	July 23
	6.3.6 d)	Qualitative	Societal stakeholders' opinion on the added value of the CBL pilot courses/ research projects derived from the RA related activities	Survey	July 23
6.4. Multi-perspective approach and inclusion of sustainability dimensions in educational and research activities a) More interdisciplinary courses/ studies/ activities/ research and projects b) Better understanding of others perspectives c) inclusion of the sustainability dimension across the education offer and research activities	6.4.1	Quantitative/ Qualitative	% of students, academics, support staff and societal stakeholders acknowledging seeing the local/regional problems in a different way and with a broader perspective after their involvement in RA related activities	Survey	July 23
	6.4.2	Quantitative/ Qualitative	% of students acknowledging their intention to participate in different subject courses/ modules from the main one they are currently enrolled-in.	Survey	July 23
	6.4.3	Quantitative	Nº of new interdisciplinary courses/ modules offered as result of the RA related activities	Project partners data	July 23
	6.4.4	Quantitative	Nº of new interdisciplinary research projects launched as result of the RA related activities	Project partners data	To be captured at a later stage
	6.4.5	Quantitative	Nº of courses and workshops on sustainability related topics included in the education offer of ENLIGHT Universities	Project partners data	July 23
	6.4.6	Quantitative/ Qualitative	% of students, academics and support staff acknowledging having increased their awareness about the importance of interdisciplinarity after their involvement in RA related activities	Survey	July 23
	6.4.7	Quantitative/ Qualitative	% of students, academics and support staff acknowledging having increased their awareness about the importance of sustainability after their involvement in RA related activities	Survey	July 23
6.5. Innovative solutions to concrete problems including "feeling of having contributed concretely to solve a societal problem"	6.1.4 a)	Quantitative	Nº of jointly identified local/regional challenges	Project indicator	July 23
	6.1.4 b)	Quantitative	Nº of selected local/regional challenges	Indicator build-upon project indicators	July 23
	6.3.3	Quantitative	Nº of degree final projects around the RA identified challenges and done in collaboration with local/regional players.	Project partners data	To be captured at a later stage

	6.3.4	Quantitative	Nº of Master thesis around the RA identified challenges and done in collaboration with local/regional players	Project partners data	To be captured at a later stage
	6.3.5	Quantitative	Nº of PhD thesis around the RA identified challenges and done in collaboration with local/regional players.	Project partners data	To be captured at a later stage
	6.1.7	Quantitative	Nº of new joint research or innovation projects launched as result of the RA related activities	Project partners data	To be captured at a later stage
	6.5.1 a)	Quantitative	Nº of proposed solutions to the local/regional challenges	Project indicator	July 23
	6.5.1 b)	Qualitative	Areas and type of solutions proposed	Project partners data	July 23
	6.5.2	Quantitative/Qualitative	% of students, academics, support staff and societal stakeholders recognizing feeling being part of the solving process of real challenges , thanks the development of the RA related initiatives	Survey	July 23
6.6. Improved society awareness of ENLIGHT universities as key players in the solving of real problems	6.6.1	Qualitative	Nº of societal stakeholders recognising the active role of ENLIGHT universities in addressing societal challenges	Survey	July 23
	6.6.2	Quantitative/Qualitative	Nº of local media echoing the added value of ENLIGHT universities role in addressing societal challenges	Communication Team	July 23
6.7. Regional 4-helix ecosystems become interconnected a) Structural dialogue and broader and enhanced collaborative networks across the 9 universities and regions; b) enhanced possibilities for students/ academics/ other stakeholders to work with the different RA stakeholders across the alliance on specific challenges; c) exchange and transfer of regional ecosystems experiences / solutions to other contexts	6.7.2	Quantitative/Qualitative	% of academics, support staff and societal stakeholders acknowledging the possibilities to work with the different 4-helix stakeholders across the ENLIGHT network have increased	Survey	July 23
	6.7.3	Quantitative	Nº of new collaboration agreements signed involving 4-helix players across different ENLIGHT regions as result of the RA related activities	Project partners data	To be captured at a later stage
	6.7.4	Quantitative	Nº of new joint CBE pilot courses launched across different ENLIGHT regions as result of the RA related activities	Project partners data	July 23
	6.7.5	Quantitative	Nº of new joint research or innovation projects launched across different ENLIGHT regions as result of the RA related activities	Project partners data	To be captured at a later stage
	6.7.6	Quantitative	Nº of regional joint publications across different ENLIGHT regions and derived from the RA related activities	Project partners data	To be captured at a later stage
	6.7.7	Quantitative	Nº of joint patents across different ENLIGHT regions derived from the RA related activities	Project partners data	To be captured at a later stage
	6.7.8	Quantitative/Qualitative	% of students, academics, support staff and societal stakeholders acknowledging their intercultural experience has improved	Survey	July 23
	6.7.9	Quantitative/Qualitative	% academics, support staff and societal stakeholders having taken into consideration the experiences of other ENLIGHT cities and regions into their specific contexts	Survey	July 23
	6.8.1	Quantitative	nº of students and academics participating in the Global Dialogues per nationality and country where their University is based	Indicator build-upon project indicators	July 23
		Quantitative	nº of global partners representatives involved in the Global Dialogues	Indicator build-upon project indicators	July 23
		Quantitative	nº of global partners organisations involved in the Global Dialogues	Indicator build-upon project indicators	July 23
6.8. ENLIGHT reaches beyond Europe and is recognised globally students gain a peer learning experience beyond the European setting in a global perspective	6.8.2	Qualitative	Global Dialogues participants' opinion on the added value of the initiative	Survey	July 23

Table 1. Indicators dashboard for the ENLIGHT Regional Academies action line.

Data Collection: ENLIGHT Regional Academies

Data for ENLIGHT project indicators, for indicators built-upon project indicators and coming from ENLIGHT partner universities has been continuously captured and monitored since the launch of the ENLIGHT Erasmus+ project in November 2020. ENLIGHT Regional Academies' action leaders have been asked to provide all available data for these indicators by the 14th of July 2023. Given the strong links between ENLIGHT Regional Academies and Challenge-based Education action lines, the leaders of this second action line have also been consulted and have provided data on indicators that are of common interest to the two action lines.

As regards the data collected in the form of a survey, ENLIGHT has run a general **Impact Survey** from the 19th June to the 14th July 2023 through the EUSurvey platform under **one single link**: <https://ec.europa.eu/eusurvey/runner/ENLIGHTimpact>. The ENLIGHT Impact Survey included questions related to the Regional Academies, to the Challenge-based Education and to the Mobility action lines. As such, it was sent to:

- **ENLIGHT learners** participating in a) one or more ENLIGHT education modules, courses and/or programmes; b) one or more ENLIGHT “mobility experience”; AND/OR c) one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.
- **ENLIGHT academics** (teacher, lecturer, researcher,...) a) involved in one or more ENLIGHT Challenge Based Learning (CBL) pilot course, as teachers, lecturers, mentors, coordinators, developers, promoters...; b) participating in one or more ENLIGHT “mobility experience”; AND/OR c) participating in one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.
- **ENLIGHT support staff** (e.g. project manager, educational developer, mobility officer,...) a) involved in one or more ENLIGHT Challenge Based Learning (CBL) pilot course; b) participating in one or more ENLIGHT “mobility experience”; c) involved in the design and/or implementation of ENLIGHT “mobility” related activities; AND/OR d) participating in one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.
- **Members of the ENLIGHT local/regional ecosystem** (business, research organisations, public authorities, civil society organisations,...) involved in a) one or more ENLIGHT Challenge Based Learning (CBL) pilot course; AND/OR b) one or more ENLIGHT Regional Academy, European Dialogue and/or Global Dialogue event.

In total, 218 individuals answered the ENLIGHT Impact Survey, whilst **214 individuals consented to share their responses with the ENLIGHT impact team**. Therefore, only these 214 responses have been taken into consideration.

Responders were asked specific questions depending on their specific profile (learner, academic, support staff of societal stakeholder) and involvement in one or more ENLIGHT action lines (Regional Academies, Challenge-based Education and Mobility). All questions were optional and the majority of these were asking a grade response from 0 to 5 (**where 0 represents “not at all” and 5 “very much”**). These questions were complemented by free text (optional) responses.

As regards the **ENLIGHT Regional Academies action line** specifically, a total of **52** responses were collected from the following stakeholders.

Stakeholder	Nº of responses	Sub-type	Nº of responses
ENLIGHT Learners	7	Master student	4
		PhD student	3
		Researcher	6
ENLIGHT Academics	18	Teacher	1
		Both	10
		No answer	1
ENLIGHT Support Staff	22	-	22
Member of the ENLIGHT local/regional ecosystem	5	Business	1
		Public authority	1
		Research organisation	1
		Other	2
TOTAL	52	-	52

Table 2. Number of responses to the ENLIGHT Impact Survey – Regional Academies action line questionnaire by type of stakeholder.

In relation to the Challenge-based Education action line, which also included questions relevant to the ENLIGHT Regional Academies action line, a total of 117 responses were collected from the following stakeholders.

Stakeholder	Nº of responses	Sub-type	Nº of responses
ENLIGHT Learners	66	Bachelor student	16
		Master student	32
		PhD student	16
		Lifelong Learner	1
		Other	1
ENLIGHT Academics	32	Researcher	4
		Teacher	6
		Both	21
		No answer	1
ENLIGHT Support Staff	16	-	16
Member of the ENLIGHT local/regional ecosystem	3	Research organisation	1
		Other	2
TOTAL	117	-	117

Table 3. Number of responses to the ENLIGHT Impact Survey – Challenge-based Education action line questionnaire, by type of stakeholder.

2. Description of the Observed Outcomes and of their Contribution to the Desired Impacts

Outcome 1: Broader, Consolidated and Stronger Quadruple-helix Connections at Local and Regional Levels

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ⁵⁹
1. Broader, consolidated and stronger 4-helix connections at local/regional level a) increased, more active and easier 4-helix dialogues and collaborations b) 4-helix organisations' institutional changes (e.g. commitment, resources, procedures) towards enhanced collaboration c) 4-helix structures as units tightly connected to their ecosystems	6.1.1 a)	Quantitative	Nº of learners, academics, support staff, societal stakeholders' representatives participating in the different RA and related initiatives (RA, demo days, European Dialogues, Global Dialogues etc.)	Indicator build-upon project indicators	446 (no data is available by type of stakeholder)
	6.1.1 b)	Quantitative	Nº of academic and societal stakeholders' organisations participating in the different RA and related initiatives (RA, demo days, European Dialogues, Global Dialogues etc.)	Indicator build-upon project indicators	54 (no data is available by type of stakeholder)
	6.1.3 b)	Quantitative	Nº of societal stakeholder organisations (business, policy making, civil society organisations) participating in the ENLIGHT CBE pilot courses	Indicator build-upon project indicators	59
	6.1.4 a)	Quantitative	Nº of jointly identified local/regional challenges	Project indicator	26
	6.1.4 b)	Quantitative/Qualitative	Nº of selected local/regional challenges	Indicator build-upon project indicators	26
	6.1.6	Quantitative	Nº of redesigned & new joint CBL pilot courses launched as result of the RA related activities	Project partners data	6
	6.1.10	Quantitative/Qualitative	4-helix players' opinion on their collaboration with other players in the context of their participation in ENLIGHT CBL	Survey – CBL questionnaire	Quotes: From a learner: "Yes, this gives me the opportunity to know little bit of Bordeaux university and France. I really happy about that." From a learner: "Thanks to the ENLIGHT programme, I have established a new collaboration with learners from another ENLIGHT university for asking the questions."

⁵⁹ In the ENLIGHT Impact Survey 0 represents "not at all" and 5 "very much".

					<p>From an academic: "I plan to profit of ENLIGHT to set up a collaboration with x Univ."</p> <p>From an academic: "I expect to gain students to participate in our PhD or research projects".</p> <p>From an academic: "I have reached out to several people from x, y, z, and w, but everyone seems to be so drowning in their own tasks that collaboration is not possible."</p> <p>From support staff: "collaboration lasted only for the duration of the training"</p> <p>From societal stakeholders: "Good" & "great supporting materials, effective online learning path, great online collaboration"</p>
	6.1.12	Quantitative/ qualitative	Nº/% of academics, support staff and societal stakeholders stating they are more open, receptive and proactive to new 4-helix collaboration opportunities.	Survey – RA questionnaire	<p>12 out of 18 (67%) academics responded = or> to 3 out of 5. Average response: 2,83/5</p> <p>16 out of 22 (73%) support staff responded = or> to 3 out of 5. Average response: 3,14/5</p> <p>4 out of 5 (80%) societal stakeholders responded = or> to 3 out of 5. Average response: 4,20/5</p>
	6.1.13	Quantitative/ qualitative	Nº/% of learners stating they have more opportunities to work with different quadruple-helix stakeholders (Academia, Public Authorities, Business, Civil Society Organisations)	Survey – RA questionnaire	6 out of 7 (86%) learners responded = or> to 3 out of 5. Average response: 3,14/5

Table 4. Indicators for outcome 1: Broader, Consolidated and Stronger 4-helix connections at Local and Regional levels.

ENLIGHT has established 9 Regional Academies which have **consolidated and enhanced existing quadruple helix connections** between academia, business, policy-making and civil society organisations at the local and regional levels. ENLIGHT Regional Academies are functioning as 9 regional hubs connected to their specific ecosystem.

In total, ENLIGHT Regional Academies have brought together **446** academics, business, policy-making and civil-society representatives and **54 different organisations** from the 9 regions and cities where ENLIGHT is operating. These organisations have participated in one or more Regional Academies-related initiatives, such as Regional Academies events, the European Dialogues and/or the Global Dialogues events.

Together, local/ regional quadruple-helix players have identified and selected **26 actual societal challenges** to be addressed through ENLIGHT challenge-based learning pilot courses and/or future research and innovation projects. These challenges are compiled and available at the [ENLIGHT Challenge Database](#). As a result, **6 challenge-based learning pilot courses have been redesigned and/or launched to answer ENLIGHT Regional Academies identified challenges** (cfr. outcome 3 for the 6 CBL pilot courses list). For example, the [Sustainable and Experimental Student Housing Living Lab](#) answers the ENLIGHT challenge [How can cities develop sustainable eco-resilient housing?](#), formulated in the context of the Bordeaux regional academy and involving societal players such as Bordeaux Metropole, CROUS and the Region of Nouvelle-Aquitaine.

Besides, and as evidence of the **enhanced quadruple-helix collaborations**, **59 different societal stakeholder organisations** (business, policy making, civil society) **have also been directly involved in the ENLIGHT challenge-based learning pilot courses**. When asked about their opinion on their collaboration with other players in the context of their participation in ENLIGHT challenge-based

learning, societal stakeholders identify it as “Good” and “(...) Great online collaboration”. On the academic side, a learner stated that he/she had the opportunity to know more about another city and country; and few academics plan to establish new collaborations with other Universities and “gain” learners to participate in their own PhDs or research projects. On a more critical note, an ENLIGHT staff member stated that the “collaboration lasted only for the duration of the training”.

In parallel, the results of the online survey show that on average both **academic and non-academic stakeholders are more open, receptive and proactive to new quadruple-helix collaboration opportunities** after their participation in the ENLIGHT Regional Academy, European Dialogues and/or Global Dialogues events (average responses from academics: 2,83/5; from support staff: 3,14/5; and from societal stakeholders: 4,20/5). In the case of the consulted learners, they also state on average they **have more opportunities to work with different quadruple-helix stakeholders** after their participation in the ENLIGHT Regional Academy related activities (6 out of the 7 responders (86%) respond positively (with a 3 or higher mark) with an average response of 3,14/5.

Summary of the observed outcomes

- ENLIGHT has established 9 Regional Academies which have **consolidated and enhanced existing quadruple helix connections** between academia, business, policy-making and civil society organisations at the local and regional levels.
- The majority of the consulted **academics and non-academic stakeholders are more open, receptive and proactive to new quadruple-helix collaboration opportunities**; and learners consider they **have more opportunities to work with different quadruple-helix stakeholders** after their participation in the ENLIGHT Regional Academy related activities

Outcome 2: Enhanced Citizens’ Participation in Higher-Education and Innovation Ecosystems

During the ENLIGHT first years of existence, the efforts of ENLIGHT Regional Academies action leaders have been focused on consolidating and strengthening the quadruple-helix connections and the different players’ participation in higher-education and innovation ecosystems, without differentiating the type of societal player (if business, policy-maker, civil society organisation or citizen). For this reason, at the current stage of the project, the proposed indicators are not pertinent as there is no available data to capture the effect of the ENLIGHT Regional Academies on the “enhanced citizens participation” outcome.

Outcome 3: Research-driven and challenge-based learning/research around the identified challenges

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23
6.3. Research-driven and challenge-based learning/ research around the identified challenges a) Students get the opportunity and experience to work on real problems with social agents b) Redesigned/ new learning modules (curriculum is flexible, open to innovation, integrate the collaboration	6.1.6	Quantitative	Nº of redesigned & new joint CBL pilot courses launched as result of the RA related activities	Project partners data	6
	6.3.1	Quantitative	Nº of redesigned/ new learning modules as result of the RA related activities	Project partners data	6 (same as in 6.1.6)
	6.3.2	Quantitative	Nº of students participating in CBL pilot courses with the involvement of regional stakeholders	Project partners data	470
	6.3.6 a)	Qualitative	Students’ opinion on the added value of the CBL pilot courses derived from the RA related activities	Survey – CBL questionnaire	Learner of the Climate Neutral City BIP: “I enjoyed meeting people with different academic and cultural backgrounds. It was interesting to learn tools with which you can help group work. The setting in which also experts from the city came to talk to us about

<p>with societal stakeholders, designed to address societal challenges , in terms of long-term impact and global outreach)</p> <p>c) research is designed to answer identified challenges</p>					<p><i>the area really was interesting to gather information quickly on the topic."</i></p> <p>Learner of the Urban Mining Blended Course: "We are pushed out of our comfort zone and challenged to reflect on complex problems with students from very different disciplines and backgrounds. Very enriching personally."</p> <p>Learner of the Urban Mining Blended Course: "Working on a specific problem with people from different fields"</p>
	6.3.6 b)	Qualitative	Academics' opinion on the added value of the CBL pilot courses/ research projects derived from the RA related activities	Survey – CBL questionnaire	Academic involved in Urban Mining Blended Course: "I'm not sure if we can speak about added value ... very low level"
	6.3.6 c)	Qualitative	Support Staff opinion on the added value of the CBL pilot courses/ research projects derived from the RA related activities	Survey – CBL questionnaire	<p>Support Staff involved in Urban Mining, Sustainable and Innovative Student Housing Courses "(...)Through its interdisciplinary and collaborative approach, it links disciplinary knowledge with real-world issues and the challenges of tomorrow, enabling students to grasp their complexity and become agents of change.</p> <p>ENLIGHT CBL Pilote Courses added value is real and varied:</p> <p>(...)</p> <ul style="list-style-type: none"> - open up the university to other institutions, associations and the private sector and strengthen partnerships - create a European network of experts working together to innovate teaching methods"
	6.3.6 d)	Qualitative	Societal stakeholders' opinion on the added value of the CBL pilot courses/ research projects derived from the RA related activities	Survey – CBL questionnaire	Societal stakeholders did not respond to this question.

Table 5. Indicators for outcome 3: Research-driven and Challenge-based learning/research around the identified challenges.

ENLIGHT Regional Academies play a central role in the identification and delineation of the actual local/ regional challenges to be addressed in the ENLIGHT research-driven and challenge-based learning pilot courses. As previously mentioned, 26 local/ regional challenges have been jointly identified by academics, business, policy makers and civil society and this has **given rise to 6 redesigned and/or new challenge-based learning pilot courses, in different learning formats** (mainly intensive programmes, season formats such as winter and/or summer schools, or living labs).

Besides the [Sustainable and Experimental Student Housing Living Lab](#) already mentioned, other good examples are:

- the [Interdisciplinary Study of the Climate Neutral City](#), where students assessed problems and came forward with solutions for cities to become climate neutral. In fact, the challenge was prepared together with the City of Ghent and students worked on the overall theme of the Climate Neutral City Mission through the lens of water, mobility and energy.
- the [Urban Mining BIP](#) which focused on Bordeaux circular economy related challenges, such as rainwater management, electronic refurbishing, zero waste products, and re-use and waste recycling.
- the [Equity and Sustainability Transitions Summer School](#), organised at the University of Galway, which is directly linked with Regional Academies activities and the ENLIGHT flagship area of Equity;
- [E-health Challenge Sweden – Netherlands Course](#), which followed the principles of ENLIGHT challenge-based learning and aim to respond to the [e-health challenge](#).

- [Oceani3 Living Lab](#) which intends to answer the Basque Country challenge [Encouraging the emergence of sustainable and competitive opportunities in Urdaibai Biosphere Reserve](#)

The challenge-based approach to education and learning, including those deriving directly from or linked to ENLIGHT Regional Academies, has **given to 470 learners the opportunity and the experience to work around real problems together with societal agents** (59 non-academic organisations have been involved in ENLIGHT pilot courses).

The consulted **learners** of the Impact Survey and involved in the 6 challenge-based learning pilot courses deriving or linked to ENLIGHT Regional Academies have in particular appreciated the **opportunity to work around concrete challenges with people from different academic, cultural and sectorial backgrounds** as the following statements give evidence of:

"I enjoyed meeting people with different academic and cultural backgrounds. It was interesting to learn tools with which you can help group work. The setting in which also experts from the city came to talk to us about the area really was interesting to gather information quickly on the topic."

"We are pushed out of our comfort zone and challenged to reflect on complex problems with students from very different disciplines and backgrounds. Very enriching personally."

"Working on a specific problem with people from different fields."

However, the only **ENLIGHT academic** that responded to the similar question mentioned *"I'm not sure if we can speak about added value ... very low level"*. This statement contrasts with the views of a representative of **ENLIGHT Support Staff** involved in one of the 6 challenge-based learning pilot courses deriving or linked to ENLIGHT Regional Academies, who states:

*"CBL is a truly innovative teaching approach. Through its interdisciplinary and collaborative approach, it links **disciplinary knowledge with real-world issues and the challenges of tomorrow, enabling students to grasp their complexity and become agents of change.**"*

ENLIGHT CBL Pilot Courses added value is real and varied:

- enabling administrative staff to develop new skills in terms of course design, active teaching, BIP implementation and integration into programmes
- enabling students to develop cross-disciplinary and intercultural skills, to discover mobility and to feel that they are part of the world of today and tomorrow
- open up the university to other institutions, associations and the private sector and strengthen partnerships
- create a European network of experts working together to innovate teaching methods".

Summary of the observed outcomes

- ENLIGHT Regional Academies action line has led to **6 redesigned and/ or new CBL pilot courses, giving learners the opportunity to work around real problems together with societal players.**
- There is no evidence of research initiatives being specifically designed to answer the Regional Academies' identified challenges.

Outcome 4: Multi-perspective Approach and Inclusion of Sustainability Dimensions in Educational and Research activities

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ⁶⁰
6.4. Multi-perspective approach and inclusion of sustainability dimensions in educational and research activities a) More interdisciplinary courses/ studies/ activities/ research and projects b) Better understanding of others perspectives c) inclusion of the sustainability dimension across the education offer and research activities	6.4.1	Quantitative/ Qualitative	% of students, academics, support staff and societal stakeholders acknowledging seeing the local/regional problems in a different way and with a broader perspective after their involvement in RA related activities	Survey – RA questionnaire	- 4 out of 7 (57%) learners responded = or> to 3, out of 5. Average response: 2,86/5 - 14 out of 18 (78%) academics responded = or> to 3, out of 5. Average response: 3,06/5 - 18 out of 22 (82%) support staff responded = or> to 3, out of 5. Average response: 3,32/5 - 4 out of 5 (80%) societal stakeholders responded = or> to 3, out of 5. Average response: 3/5
	6.4.2	Quantitative/ Qualitative	% of students acknowledging their intention to participate in different subject courses/ modules from the main one they are currently enrolled-in	Survey – RA questionnaire	4 out of 7 (57%) learners responded positively. Average response: 3,29/5
	6.4.3	Quantitative	Nº of new interdisciplinary courses/ modules offered as result of the RA related activities	Project partners data	6
	6.4.5	Quantitative	Nº of courses and workshops on sustainability related topics included in the education offer of ENLIGHT Universities	Project partners data	6
	6.4.6	Quantitative/ Qualitative	% of students, academics and support staff acknowledging having increased their awareness about the importance of interdisciplinarity after their involvement in RA related activities	Survey – RA questionnaire	- All (100%) learners responded = or> to 3, out of 5. Average response: 4,57/5 - 16 out of 18 (89%) academics responded = or> to 3, out of 5. Average response: 3,22/5 - 17 out of 22 (77%) support staff responded = or> to 3, out of 5. Average response: 3,14/5
	6.4.7	Quantitative/ Qualitative	% of students, academics and support staff acknowledging having increased their awareness about the importance of sustainability after their involvement in RA related activities	Survey – RA questionnaire	- 6 out of 7 (86%) learners responded = or> to 3, out of 5. Average response: 3,43/5 - 12 out of 18 (67%) academics responded = or> to 3, out of 5. Average response: 2,61/5 - 15 out of 22 (68%) support staff responded = or> to 3, out of 5. Average response: 2,95/5

Table 6. Indicators for outcome 4: Multi-perspective Approach and the Inclusion of Sustainability Dimensions in Educational and Research Activities.

In liaison with the ENLIGHT Regional Academies effects on the promotion of research-driven and challenge learning around the identified challenges, this action line has also had an **effect on the promotion of multi-perspective approach and the inclusion of sustainability dimensions in educational activities** (no data was available for capturing the effects on research activities).

On average, consulted stakeholders (learners, academics, support staff and societal stakeholders) **acknowledge seeing the identified local/regional problems in a different way** after their involvement in the ENLIGHT Regional Academies related activities. This effect is mostly remarkable in the case of ENLIGHT support staff. In the specific case of learners, the majority also **acknowledge their intention to participate in a different related subject ENLIGHT course(s)/ module(s) from their main field of studies** after their participation in ENLIGHT Regional Academies related activities.

The majority of consulted ENLIGHT students, academics and support staff have also acknowledged **having increased their awareness about the importance of both interdisciplinarity and sustainability**

⁶⁰ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

after their involvement in ENLIGHT Regional Academies related activities. This increased awareness is especially significant in the case of learners. Learners responding the ENLIGHT Impact Survey consider they have increased on average their awareness about the importance of interdisciplinarity 4,57, and about sustainability 3,43. In fact, as an ENLIGHT learner stated, for her/him the main added value of the ENLIGHT Regional Academy in which he/she participated in was *“the connections with other points of view and disciplines”*.

In the case of academics, it is interesting to note that the effect on their awareness levels about the importance of both interdisciplinarity and sustainability has been lower, even if positive (3,22 and 2,61 average response respectively). As academics state:

“Interdisciplinarity and sustainability have always been of utmost importance to me, so this program couldn't improve it, just confirm. (...)” and

“as I have a mixed background and have been working on interdisciplinary projects, it wasn't so much “added value” as finding a receptive audience.”

At the Alliance institutional level, **all 6 challenge-based learning pilot courses that derived from or are linked to ENLIGHT Regional Academies related activities are interdisciplinary by nature and have included sustainability as the main or a relevant focus.**

In fact, it has been observed that **the embedding of interdisciplinary approaches and sustainability have become basic principles in ENLIGHT educational offer transcending and going beyond the ENLIGHT challenge-based pilot course deriving from Regional Academies related activities.** The list of [ENLIGHT learning opportunities](#) jointly offered by at least 3 ENLIGHT partners (2 for a virtual course), provides evidence of these focus on interdisciplinarity and sustainability issues. Besides, according to the results of the ENLIGHT Impact Survey – CBE questionnaire, 95% of the consulted learners participating in the Challenge-based Learning (CBL) pilot courses think transdisciplinarity has been taken into consideration and 77% sustainability. Academics and support staff responding to the survey share a similar view: 94% of the academics and all support staff (100%) think that that transdisciplinarity has been taken into consideration in CBL pilot courses, whilst 75% of academics and 94% of support staff think sustainability has also been taken into consideration.

Summary of the observed outcomes

- ENLIGHT Regional Academies action line had an **effect on the promotion of multi-perspective approach and the inclusion of sustainability dimensions in educational activities** (no data was available for capturing the effects on research activities). Interdisciplinary and sustainability are basic principles of ENLIGHT educational offer.
- The majority of RA stakeholders **acknowledge seeing the identified local/regional problems in a different way** after their involvement in ENLIGHT Regional Academies related activities.
- The majority of RA stakeholders acknowledge **having increased their awareness about the importance of both interdisciplinarity and sustainability.**
- Learners, in particular, **acknowledge their intention to participate in a different related subject ENLIGHT course(s)/ module(s) from their main field of studies** after their participation in ENLIGHT Regional Academies related activities.

Outcome 5: Innovative Solutions to Concrete Problems

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ⁶¹
6.5. Innovative solutions to concrete problems including "feeling of having contributed concretely to solve a societal problem"	6.1.4 a)	Quantitative	Nº of jointly identified local/regional challenges	Project indicator	26
	6.1.4 b)	Quantitative	Nº of selected local/regional challenges	Indicator build-upon project indicators	26
	6.5.1 a)	Quantitative	Nº of proposed solutions to the local/regional challenges	Project indicator	27
	6.5.1 b)	Qualitative	Areas and type of solutions proposed	Project partners data	In the areas related to Women Leadership in Global Health; Innovation Gaming, and Climate Neutral Cities, Climate Change Mitigation.
	6.5.2	Quantitative/Qualitative	% of students, academics, support staff and societal stakeholders recognizing feeling being part of the solving process of real challenges , thanks the development of the RA related initiatives	Survey – RA questionnaire	- 5 out of 7 (71%) learners responded = or> to 3, out of 5. Average response: 3,14/5 - 15 out of 18 (83%) academics responded = or> to 3, out of 5. Average response: 3,28/5 - 17 out of 22 (77%) support staff responded = or> to 3, out of 5. Average response: 3,23/5 - 3 out of 5 (60%) societal stakeholders responded = or> to 3, out of 5. Average response: 3,4/5

Table 7. Indicators for outcome 5: Innovative Solutions to Concrete Problems.

From a societal perspective, the ENLIGHT Regional Academies have not only led to the identification of local/regional challenges (26 challenges have been jointly identified), as they have contributed to **identify and proposing innovative solutions (at least 27)** to tackle these and other identified challenges.

For instance, innovative solutions have been proposed to tackle the challenges related to Climate Neutral Cities in the framework of the already mentioned challenge-based learning pilot course [Interdisciplinary Study of the Climate Neutral City](#). Similarly, innovation solutions have also been proposed in the context of the [Mentorship Programme Empowering Young Women Leaders in Global Health](#) and of the [Sustainable and Experimental Student Housing Living Lab](#). As a collaborator from a private company involved in this last course mentioned:

"It's a real win-win collaboration for us and for the university. The real value is that students are a real source of ideas".

ENLIGHT Regional Academies have also helped **generating the feeling of being part of the solving process of societal challenges amongst the different stakeholders**. As the results of the ENLIGHT Impact Survey show, the majority of ENLIGHT learners, academics, support staff and societal stakeholders **recognise feeling being part of the solving process of real challenges** thanks to the ENLIGHT Regional Academies action line (average responses vary from 3,14 from learners to 3,4 from societal stakeholders. In this context, the remark and suggestions of a societal stakeholder are worth highlighting:

*"While the workshop was valuable, **more time to come up with real answers would have been interesting**. It might have been interesting **to see how solutions could have been applied in the local context**. On that note, while better than in similar workshops, I expected a bit more*

⁶¹ In the ENLIGHT Impact Survey 0 represents "not at all" and 5 "very much".

from the follow up. It might be interesting to see what would come up when you make discussion groups with topic experts.”

Summary of the observed outcomes

- ENLIGHT Regional Academies had led to the identification of local/regional challenges and have contributed to **identify and proposing innovative solutions** to tackle these and other identified challenges.
- ENLIGHT Regional Academies have helped **generating the feeling of being part of the solving process of societal challenges amongst its different stakeholders.**

Outcome 6: Improved Society Awareness of ENLIGHT Universities as Key Players in the Solving of Real Problems

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23
6.6. Improved society awareness of ENLIGHT universities as key players in the solving of real problems	6.6.1	Qualitative	Nº of societal stakeholders recognising the active role of ENLIGHT universities in addressing societal challenges	Survey – RA questionnaire	All 5 societal stakeholders responding to the ENLIGHT Impact Survey – RA action questions have responded positively. Average response ⁶² : 4/5.
	6.6.2	Quantitative/Qualitative	Nº of local media echoing the added value of ENLIGHT universities role in addressing societal challenges	Communication Team Data	14

Table 8. Indicators for outcome 6: Improved Society Awareness of ENLIGHT Universities as Key Players in the Solving of Real Problems.

Another desired effect of the ENLIGHT Regional Academies, highlighted by academic staff during the stakeholder consultation on expected outcomes and desired impact (cfr. section 1.3 a)), concerns the role of university in society.

All consulted societal stakeholders responding to the ENLIGHT Impact Survey **recognise the active role of ENLIGHT universities in addressing societal challenges** after their participation in the Regional Academies related activities, with an average response of 4 out of 5.

This positive perception of ENLIGHT universities as key player in addressing real problems is also reflected in the number of local and societal stakeholders’ media references. At least 14 references have been collected in distinctive media sources. A few examples:

*“University of Galway is hosting 150 researchers, PhD students and external industry stakeholders to its campus for a **special event to discuss solutions for global societal challenges**. The ‘ENLIGHT European Dialogue Digital Innovation in Health and Wellbeing’ has been running for since Tuesday, bringing together universities and external stakeholders to share best practices and foster future research and education collaborations.”*

At Galway Daily (25 May 2023). [Link](#).

“Sustainable Cities – the Importance of Collaboration

*In the week of Europe Day, the ENLIGHT EUROPEAN DIALOGUE will bring together ENLIGHT partners and key experts from the nine ENLIGHT regions and connect them with other key stakeholders across Europe **to reflect on novel approaches to the pressing challenges facing***

⁶² In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

our European regions. The theme for the 2022 European Dialogue is Sustainable Urban Development.”

By the Stockholm Environment Institute (12 May 2022). [Link](#).

“In the last years, the [ENLIGHT] consortium has specialised in addressing five areas of knowledge: climate change, health and well-being, inequalities, the digital revolution, energy and circularity.”

At Deia (4 July 2023). Translated from Spanish. [Link](#).

Summary of the observed outcomes

- Both consulted societal stakeholders and local/regional press sources **recognise the active role of ENLIGHT universities in addressing societal challenges.**

Outcome 7: Regional Quadruple-helix Ecosystems Become Interconnected

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23 ⁶³
6.7. Regional 4-helix ecosystems become interconnected a) Structural dialogue and broader and enhanced collaborative networks across the 9 universities and regions; b) enhanced possibilities for students/ academics/ other stakeholders to work with the different RA stakeholders across the alliance on specific challenges; c) exchange and transfer of regional ecosystems experiences / solutions to other contexts	6.7.2	Quantitative/ Qualitative	% of academics, support staff and societal stakeholders acknowledging the possibilities to work with the different 4-helix stakeholders across the ENLIGHT network have increased	Survey – RA questionnaire	- 11 out of 18 (61%) academics responded = or> to 3, out of 5. Average response: 2,72/5 - 17 out of 22 (77%) support staff responded = or> to 3, out of 5. Average response: 3,18/5 - 5 out of 5 (100%) societal stakeholders responded = or> to 3, out of 5. Average response: 4,2/5
	6.7.4	Quantitative	Nº of new joint CBE pilot courses launched across different ENLIGHT regions as result of the RA related activities	Project partners data	6
	6.7.8	Quantitative/ Qualitative	% of students, academics, support staff and societal stakeholders acknowledging their intercultural experience has improved	Survey – RA questionnaire	- 7 out of 7 (100%) learners responded = or> to 3, out of 5. Average response: 4,29/5 - 16 out of 18 (89%) academics responded = or> to 3, out of 5. Average response: 3,33/5 - 16 out of 22 (73%) support staff responded = or> to 3, out of 5. Average response: 3,41/5 - 5 out of 5 (100%) societal stakeholders responded = or> to 3, out of 5. Average response: 4,2/5
	6.7.9	Quantitative/ Qualitative	% academics, support staff and societal stakeholders having taken into consideration the experiences of other ENLIGHT cities and regions into their specific contexts	Survey – RA questionnaire	- 13 out of 18 (72%) academics responded = or> to 3, out of 5. Average response: 3,22/5 - 15 out of 22 (68%) support staff responded = or> to 3, out of 5. Average response: 3,23/5 - 5 out of 5 (100%) societal stakeholders responded = or> to 3, out of 5. Average response: 3,6/5

Table 9. Indicators for outcome 7: Regional Quadruple-helix Ecosystems Become Interconnected.

Besides the effect of the ENLIGHT Regional Academies on fostering broader and stronger quadruple-helix connections at local and regional levels (outcome 1), ENLIGHT Regional Academies action line have also **facilitated the interconnection between these local/regional quadruple-helix collaborations at European level.**

This has been made evident by the **launch of 6 new joint CBE pilot courses across the different ENLIGHT regions** as direct result of the ENLIGHT Regional Academies activities. As an example of the

⁶³ In the ENLIGHT Impact Survey 0 represents “not at all” and 5 “very much”.

interconnectedness between the ENLIGHT Regional Academies, it is worth underlying the participation of the chief innovation officer from the municipality of Bratislava (Comenius University Bratislava Regional Academy) in the [Summer School on Equity and Sustainability Transitions](#) at the University of Galway (University of Galway Regional Academy).

In parallel, and according to the ENLIGHT Impact Survey results, the majority of academics, support staff and societal stakeholders acknowledge that the possibilities to work with the different quadruple-helix stakeholders across the ENLIGHT network have also increased after their participation in ENLIGHT Regional Academies related activities. This effect is most significative in the case of societal stakeholders with an average response of 4,2 out of 5. In this context, ENLIGHT stakeholders have stated the following:

(ENLIGHT Academic) *"It hinted at **good collaboration possibilities**, but being able to follow up some leads is harder than in industry, the conversion rate is extremely low."*

(ENLIGHT Support Staff) *"Besides the interdisciplinary **contacts across the ENLIGHT institutions and their ecosystem**, the European Dialogue proved a great tool to get colleagues acquainted with ENLIGHT"*

Similarly, the consulted learners (all: 100%), academics (89%), support staff (73%) and societal stakeholders (all-100%) acknowledge **their intercultural experience has improved** after their participation in ENLIGHT Regional Academies related activities. Some quotes of consulted stakeholders:

(ENLIGHT Learner) *"**Yes, my intercultural experience and sensitivity** has changed. I have gained knowledge on issues of sustainability and problem-solving skills."*

ENLIGHT Regional Academies action line have also **led to the exchange and transfer of regional ecosystems' experiences and/or solutions to other contexts**. It is worth highlighting that **all consulted societal stakeholders state having taken into consideration the experiences of other ENLIGHT cities and regions into their specific contexts** (5 out of 5 (100%) societal stakeholders responded = or > to 3, out of 5. Average response: 3,6/5). The majority of academics and support staff have also responded positively to the related question (= or > to 3) with an average response of 3,22 and 3,23 respectively. These are some of the relevant quotes of the consulted stakeholders, both confirming the expected outcome but also giving critical views:

(ENLIGHT Academic) *"In my subject inclusivity is not usually worked on. I have learnt about **how to solve practical issues about it in my classes**"*.

(ENLIGHT Academic) *"Honestly there was no added value for me. As a researcher and psychologist, participating in the round table sessions, it **felt like a one-way direction; me giving insights and but not getting inspired**. The summary of the sessions felt like a good news show and the other talks lacked critical insights in my opinion. (...)"*

Summary of the observed outcomes

. ENLIGHT Regional Academies action line has **facilitated the interconnection between local/regional quadruple-helix collaborations at European level**. ENLIGHT RA academics, support and societal stakeholders acknowledge the possibilities to work with different quadruple-helix stakeholders across ENLIGHT have increased after their participation in ENLIGHT RA related activities.

- ENLIGHT Regional Academies action line has **led to the exchange and transfer of regional ecosystems' experiences and/or solutions to other contexts**. The majority of ENLIGHT RA stakeholders state having taken into consideration the experiences of other ENLIGHT cities and regions into their specific contexts.

Outcome 8: ENLIGHT Reaches Beyond Europe and is Recognised Globally

EXPECTED OUTCOME	Nº	TYPE	INDICATOR	MEANS OF VERIFICATION	DATA on JULY 23
6.8. ENLIGHT reaches beyond Europe and is recognised globally students gain a peer learning experience beyond the European setting in a global perspective	6.8.1	Quantitative	nº of learner and academics participating in the Global Dialogues per nationality and country where their University is based	Indicator build-upon project indicators	154
	6.8.2 a)	Quantitative	nº of global partners representatives involved in the Global Dialogues	Indicator build-upon project indicators	43
	6.8.2 b)	Quantitative	nº of global partners organisations involved in the Global Dialogues	Indicator build-upon project indicators	4
	6.8.2	Qualitative	Global Dialogues participants' opinion on the added value of the initiative	Survey	<p>Learner testimony "Yes, my intercultural experience and sensitivity has changed. I have gained knowledge on issues of sustainability and problem solving skills."</p> <p>Support staff testimony based on his/her experience after participating in several RA related events, including Global Dialogues: "The concept of collaboration between academia and external partners has been around for a while. Without funding this is difficult to achieve beyond inspirational meetings, conferences etc. Even more so when we try to raise issues to the European level. We saw a big difference in ambition post conference in the theme Sustainable Urban Development (where partners came from mostly public entities) and in Digital Health (where partners came from industry). This is a learning experience and we have to adapt to the reality of all each sector of collaboration."</p> <p>Support staff testimony "Visibility of the problems and connecting with people"</p> <p>Support staff testimony based on his/her experience after participating in several RA related events, including Global Dialogues: "All provide ENLIGHT to branch out of the University ecosystem and make tangible connections with our regions. I think out of the three, the Global Dialogue had the least added value due to the way it was structured."</p>

Table 10. Indicators for outcome 8: ENLIGHT Reaches Beyond Europe and is Recognised Globally

A major initiative linked to the ENLIGHT Regional Academies action line are the Global Dialogues, which aim to respond to **ENLIGHT ambition of reaching beyond Europe and become recognised globally**.

One can say that the Alliance is achieving this expected outcome as it managed to **bring about 154 learners and academics from both Europe and non-European countries in its two editions of the Global Dialogues events**. **43 global partners representatives from 4 different organisations** (including from Canada) **have participated in the Global Dialogues events**.

As regards stakeholders' opinion on the **added value of the Global Dialogues**, it is worth highlighting the following testimonies:

(ENLIGHT Learner) *“Yes, my **intercultural experience and sensitivity has changed**. I have gained **knowledge on issues of sustainability and problem-solving skills**.”*

(ENLIGHT Support Staff) *“Visibility of the problems and **connecting with people**”.*

(ENLIGHT Support Staff) *“(…) Global dialogue, organized by students **is not a sustainable format** I'm afraid. The student groups change every year and for our support staff it is not possible to invest much time in extracurricular activities.”*

Stakeholders' opinion on the Global Dialogues can also be deduced from the following testimonies.

(ENLIGHT Support Staff) *“All [ENLIGHT Regional Academies related initiatives] provide ENLIGHT to branch out of the University ecosystem and make tangible connections with our regions. I think out of the three, the Global Dialogue had the least added value due to the way it was structured.”*

(ENLIGHT Support Staff) *“The concept of collaboration between academia and external partners has been around for a while. **Without funding this is difficult to achieve beyond inspirational meetings, conferences etc.** Even more so when we try to raise issues to the European level. We saw a big difference in ambition post conference in the theme Sustainable Urban Development (where partners came from mostly public entities) and in Digital Health (where partners came from industry). This is a learning experience and we have to adapt to the reality of all each sector of collaboration.”*

Summary of the observed outcomes

. ENLIGHT Regional Academies action line is helping ENLIGHT reaching beyond Europe and becoming recognized globally.

3. Impact Assessment

From the analysis above one can state that the ENLIGHT Regional Academies are bringing about change and **have met at least 7 out of the 8 expected outcomes**, as it was not possible to capture evidence for outcome “*enhanced citizens' participation in higher-education and innovation ecosystems*”. However, the nature of these changes varies in some cases in terms of their “temporality”, “intention”, “repair capacity”, “intensity”, and “extension” as defined in Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact ⁶⁴. The table below makes the assessment of the observed changes by outcome area.

OUTCOME	TEMPORALITY	INTENTION	REPAIR CAPACITY	INTENSITY	EXTENSION
6.1. Broader, consolidated and stronger 4-helix connections at local/ regional level	Primary: immediate incidence on stakeholders. Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation	Irreversible	Moderate: there is sufficient evidence to demonstrate this outcome.	Partial: effects on delimited geographical spaces

⁶⁴ For the full description of the different types of impact, please consult Deliverable 81 Methodology and Toolkit 2.0 for HEI Impact.

		observed. It was intentional.			
6.3. Research-driven and challenge-based learning/ research around the identified challenges	Primary: immediate incidence on stakeholders. Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Moderate: there is sufficient evidence to demonstrate this challenge-based learning around the identified challenges. However, there is no evidence for challenge-based research initiatives.	Partial: effects on delimited geographical spaces
6.4. Multi-perspective approach and inclusion of sustainability dimensions in educational and research activities	Primary: immediate incidence on stakeholders. Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Moderate: there is sufficient evidence to demonstrate this outcome.	Partial: effects on delimited geographical spaces
6.5. Innovative solutions to concrete problems	Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Indirect impact: not a direct result from the action.	Irreversible	Moderate: there is sufficient evidence to demonstrate this outcome.	Extensive: effects cannot be delimited in a specific geographical space
6.6. Improved society awareness of ENLIGHT universities as key players in the solving of real problems	Primary: immediate incidence on the stakeholders. Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Indirect impact: not a direct result from the action.	Reversible	Moderate: there is sufficient evidence to demonstrate this outcome.	Partial: effects on delimited geographical spaces
6.7. Regional 4-helix ecosystems become interconnected	Primary: immediate incidence on the stakeholders. Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Moderate: there is sufficient evidence to demonstrate this outcome.	Partial: effects on delimited geographical spaces
6.8. ENLIGHT reaches beyond Europe and is recognised globally	Cumulative: effects are increased/ extended to different areas, if the action is continued in time. Synergic: effects are greater than the separate effect of the action, as it is strongly linked with other ENLIGHT activities. Permanent: effects remain after the end of the project.	Direct impact: direct interaction between the action line and the transformation observed. It was intentional.	Irreversible	Minor: there is little evidence to demonstrate the changes.	Extensive: effects cannot be delimited in a specific geographical space

Table 11. Assessment of the observed outcomes in function of their “temporality”, “intention”, “repair capacity”, “intensity”, and “extension”.

The assessment of the changes and effects brought by the ENLIGHT Regional Academies show that despite their minor-moderate intensity, they are permanent, can be partial or extensive and in most of the cases irreversible.

The main observed ENLIGHT Regional Academies' effects/ changes as described above, associated with the efforts of other ENLIGHT activities and external determinants, will be contributing to bring about further changes (impact) on:

- **Learners**, who are in the path to become globally engaged citizens and empowered for a professional environment focusing on sustainability, transversal skills and interdisciplinary and intersectoral collaborations (as impact derived mainly from outcomes 3: research-driven and challenge-based learning around the identified challenges, and 4: multi-perspective approach and long-term inclusion of sustainability dimensions in educational and research activities).
- **Academics**, who are being more equipped and empowered to design and implement challenge-based education programmes and becoming globally engaged academics (as impact derived mainly from outcomes 3: research-driven and challenge-based learning around the identified challenges, and 4: multi-perspective approach and inclusion of sustainability dimensions in educational and research activities).
- **ENLIGHT Alliance and its universities**, which are profiling as a collaborative platform for identifying, discussing and solving local, regional, European and global challenges (as impact derived from all observed outcomes (1: broader, consolidated and stronger 4-helix connections at local/ regional level, 3: research-driven and challenge-based learning around the identified challenges, 4: multi-perspective approach and inclusion of sustainability dimensions in educational and research activities, 5: innovative solutions to concrete problems; 6: improved society awareness of ENLIGHT universities as key players in the solving of real problems; 7: regional 4-helix ecosystems become interconnected; and 8: ENLIGHT reaches beyond Europe and is recognised globally)).
- **European Education Area**, which is being transformed towards challenge-based and multidisciplinary education and with universities that are connected with local/ regional contexts and stakeholders, become centres for addressing societal challenges, more interconnected between themselves and more internationalized (as impact derived from all observed outcomes (1: broader, consolidated and stronger 4-helix connections at local/ regional level, 3: research-driven and challenge-based learning around the identified challenges, 4: multi-perspective approach and inclusion of sustainability dimensions in educational and research activities, 5: innovative solutions to concrete problems; 6: improved society awareness of ENLIGHT universities as key players in the solving of real problems; 7: regional 4-helix ecosystems become interconnected; and 8: ENLIGHT reaches beyond Europe and is recognised globally)).
- **Society**, with innovative (and sustainable) solutions to its local/ global challenges (as impact derived mainly from outcome 5: innovative solutions to concrete problems).

GENERAL ASSESSMENT AND NEXT STEPS

General Assessment

From the pilot impact assessment exercise implemented through the three pilot case studies, it is possible to conclude that ENLIGHT is bringing about change and impact on its main stakeholders, on the European Higher Education Area and on society. More specifically, it is bringing about impact on:

- **Learners**, who thanks to their participation in ENLIGHT CBE and Regional Academies action lines, as well as to their international mobility experience, are in the path to become globally engaged citizens, empowered with transversal skills and competences and for a professional development focusing on sustainability, interdisciplinarity, intercultural and intersectoral collaborations, and consequently with higher employment opportunities.
- **Academic and support staff**, who are more equipped and empowered to design and implement challenge-based education programmes, to adopt new cooperation mechanisms beyond own disciplinary networks, towards transdisciplinary and intersectoral teams, and to become globally engaged citizens thanks to their involvement in the three action lines.
- **ENLIGHT Alliance, its universities, and the European Higher Education Area.**
 - o ENLIGHT and its partner universities are profiling as a collaborative platform for identifying, discussing and solving local, regional, European and global challenges,
 - o challenge-based education is introduced in ENLIGHT education offer in accordance with quality assurance standards and requirements,
 - o future-proof skills and competencies are promoted,
 - o there is more systemic and integrated stakeholder cooperation,
 - o there is closer and more dynamic relationships between partner universities and the local/regional communities,
 - o short-term mobility is becoming a regular part of studies and staff career development,
 - o universities' procedures become more homogenised and contribute to more converging Higher Education Systems, and
 - o there is an overall contribution to a more internationalized, attractive, inclusive and sustainable European Higher Education Area.
- **On society**, with innovative and sustainable solutions to their local/ global societal challenges, but also with more internationalised cities/regions thanks to the increased students and staff mobility.

The three pilot case studies that were developed in the context of ENLIGHT E+ project also have shown **there is still no clear evidence of ENLIGHT effects on:**

- the transfer of ENLIGHT CBE methodological approaches to other domains beyond ENLIGHT flagship areas, universities and contexts,
- the establishment of synergies with research activities and the alignment with European Research objectives,
- the involvement of citizens in higher-education and innovation ecosystems.

More robust evidence would also be needed to better capture some of the observed effects, including:

- The CBE action line effects on learners' employability,
- The effects of ENLIGHT Mobility action line compared with other mobility programmes,
- The effects of ENLIGHT Mobility in promoting greener mobility and more sustainable living,
- ENLIGHT Regional Academies action line effects on making ENLIGHT recognised globally.

Next Steps

The pilot case studies and resulting *narratives of change* follow the first four phases of the ENLIGHT Methodology 2.0 for the Impact Assessment of Higher Education Activities (Deliverable D81), namely: (1) purpose setting, (2) scope of the impact assessment, (3) data collection and analysis, and (4) impact assessment.

To complete the ENLIGHT Methodology 2.0 full cycle, the three narratives presented in this deliverable need to be further communicated and contrasted with other relevant stakeholders besides the action leaders, such as learners, academics, support staff and societal stakeholders (phase 5).

After the communication and contrast phase is completed and its results included in the new version of the *narratives of change*, the subsequent impact management phase should be launched (phase 6). In this phase, the results of the impact assessment exercise, duly communicated and contrasted with the relevant stakeholders, will be used to strategically plan the following years of ENLIGHT according to the impact generated and new expected impact. This is a crucial phase that is well aligned and coincides with the launch of the new ENLIGHT 2.0 activities, including the new impact-related task (6.1). In the framework of this new task, the ENLIGHT Impact Task Force is expected to further upgrade its methodological framework, to "calibrate" it with other University Alliances and produce biennial impact reports combining "narratives of change" with contrasted indicators and testimonial of the different target groups. Eventually, this help establishing impact-direct planning and management of ENLIGHT and of Higher Education in general.