



# A REVISED CURRICULUM DESIGN OF THE MASTER'S GLOBAL CHALLENGES FOR SUSTAINABILITY



**CHARM-EIGHT $\infty$  (CHARM-EU EXPANSION, INTER-INSTITUTIONAL CAMPUS,  
GOVERNANCE, HIGHER EDUCATION, TRANSFORMATION)**

DELIVERABLE D3.1– CHARM-EU: A REVISED CURRICULUM DESIGN OF THE MASTER’S GLOBAL CHALLENGES FOR SUSTAINABILITY.

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## EXECUTIVE SUMMARY

The objective of this deliverable is

*“to review the existing Master’s to enhance quality and sustainable innovativeness of the programme (with ongoing delivery)”.*

The Master’s referred to is the CHARM-EU Master’s in Global Challenges for Sustainability, delivered by five CHARM-EU alliance partners, Trinity College Dublin, Eotvos Lorand University, University of Montpellier, University of Barcelona, and Utrecht University. Having commenced in September 2021, one full cohort of students completed this Master’s by February 2023, a second in February 2024, a third cohort in 2025, and a fourth cohort in 2026. This deliverable reports on the evaluation of this Master’s and is described within the proposal as:

*“All the previous evaluation obtained as an output of the previous project will be used for the review. The activities will include the exploration of alternative themes for the second semester (flexible phase) of the programme, exploration of an optional 30 EC internship addition and review of programmatic assessment. This review will follow quality review standards with particular alignment with ESGs (European Standards and Guidelines).”*

This review encompasses **eleven** discrete activities, which together, form a rich description, evaluation, and analysis of how the Master’s was delivered, and how it will be implemented in the future.

## 1. INTRODUCTION

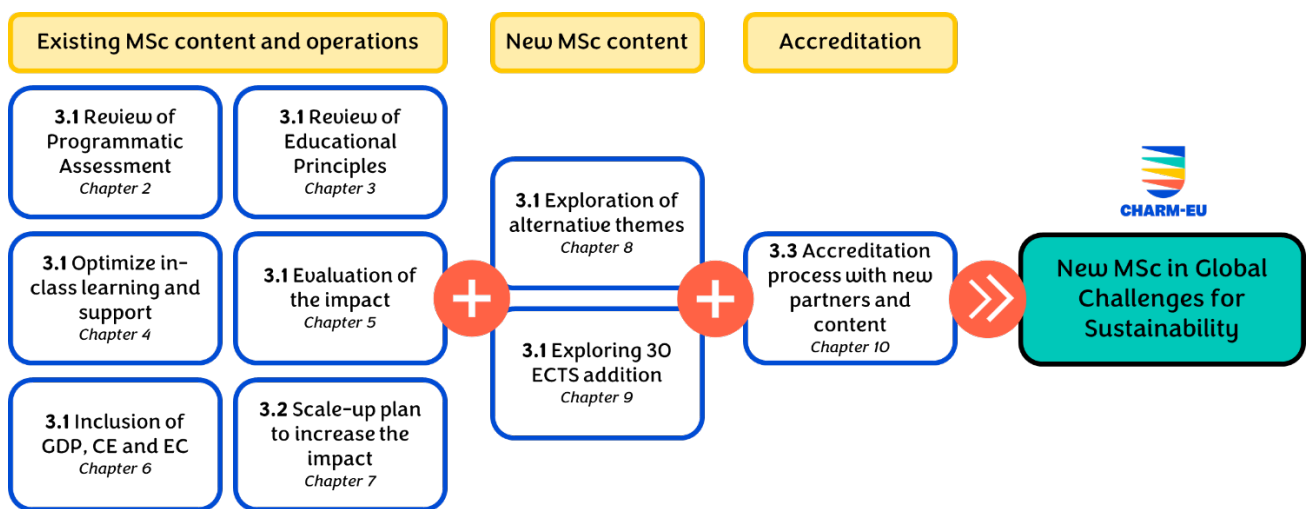
This report describes a range of evaluation and analysis activities held between January 2023 and December 2024. The goal of these activities was to evaluate the current CHARM-EU Master's in Global Challenges for Sustainability, provide recommendations, and explore approaches to expand and improve the Master's when it is reaccredited in 2025. **Table 1** below describes these tasks.

**Table 1** Brief overview and related documentation tasks

Sub-WP	Task name	Brief description
3.1.1	Exploration of alternative themes for the second semester (flexible phase) of the programme	The Master's currently has three themes in Phase 2, Food, Water, and Life and Health. This task will explore the potential, and content of, a fourth theme (e.g. Biodiversity, Energy etc...).
3.1.2	Exploration of an optional 30 EC internship addition	The Master's is currently a 90ECTS programme. This task will explore the potential of an optional 30ECTS internship addition.
3.1.3	Review of programmatic assessment. (Review and update of assessment approach)	The Master's currently uses Programmatic Assessment. This task will review the assessment approach and provide recommendations for updating this approach.
3.1.4	Systematic review on all Education Principles	CHARM-EU is based on 10 educational principles. This task will complete a systematic review of these educational principles.
3.1.5	Optimise in-class and online learning experience and support	The Master's uses multiple online and hybrid learning experiences and tools. This task will review and optimise this experience.
3.1.6	Evaluation of the impact	One cohort of the Master's has now completed the programme. This task will evaluate the impact of the Master's in terms of all stakeholders.
3.1.7	Inclusion of European Citizenship and Global, Diverse perspectives, cultural experiences in existing modules	This task will work with WP11 on including these elements into teaching practice.
3.2.1	Increase the number of students that participate in the Master's	This task aims to review and analyse the admission procedure and student journey. Recommendations are formulated to optimise admission and registration procedures.
3.2.2	Broaden the target group of our Master's	After analysing the current cohorts' composition, recommendations are made to increase the target group.

3.2.3	Recruit KCT members from new partners	Involve the academic staff of new partner HEIs in the Knowledge Creation Teams based on expertise gaps.
3.3	Accreditation process with new partners and content	Facilitate the accreditation of the updated Master's with new content and partners.

These activities can be understood as a systematic process involving analysis of the existing Master's content and operations, consideration of new Master's content, and the accreditation of the new Master's including new partners and content. **Figure 1** presents this in graphical format.



**Figure 1** Summary of D3.1 activities relative to the CHARM-EU Master's in Global Challenges for Sustainability

## 2. REVIEW OF PROGRAMMATIC ASSESSMENT

### 2.1. TASK AIM

Programmatic assessment is an approach used by CHARM-EU to evaluate and assess students in the Master's in Global Challenges for Sustainability. The purpose of this report is to document the evaluation of programmatic assessment during the first iteration of the Master's in 2021-2023. The report concludes with recommendations and actions taken.

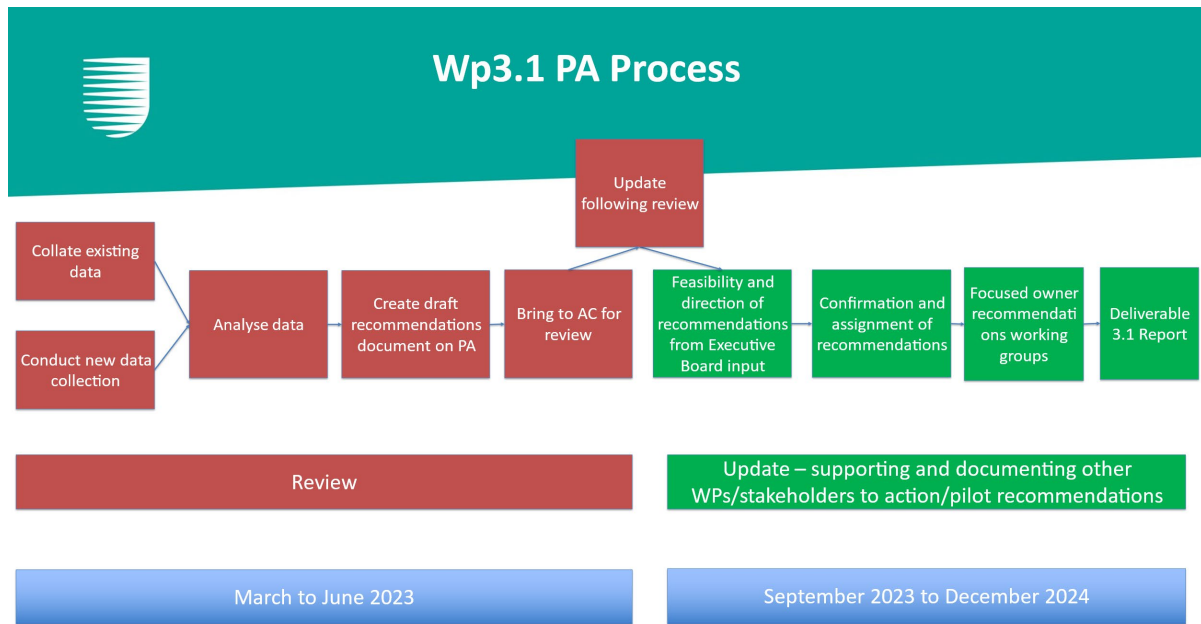
The task of this WP is to:

- **Review** the CHARM-EU Programmatic Assessment approach in terms of:
  - Student perceptions of its use in teaching and learning process
  - Staff perceptions (Teaching staff, Module Coordinators, Educationalists, PAC, Mentors, and supervisors) in its use in teaching and learning process
  - Administrative perceptions (JVAO)
  - Description and definition in existing documentation
- **Update** the CHARM-EU Programmatic Assessment approach with recommendations derived from the review.
- **Limitations** of the review: Identify the boundaries of recommendations in terms of structural, organization and governance limitations.

### 2.2. METHODOLOGY

To achieve the aims of this task the following process was defined and noted by the Academic Council in March 2023 (**Figure 2**).

- A review phase where data is collected and analysed on Programmatic Assessment, a draft recommendations report is prepared which is then brought to Academic Council and the Executive Board for review and feasibility where required.
- Following this stage, an update stage commences where Working Groups, and/or internal CHARM-EU offices, work on discrete tasks to update and improve Programmatic Assessment for the 2025 Master's.



**Figure 2** WP3.1 Programmatic Assessment Evaluation Process

### 2.3. DATA SOURCES

**Table 2** describes the data sources used for reviewing Programmatic Assessment in the Master's. These include data from Master's participants including:

- Students
- Capstone Supervisors
- Teaching Staff from each Phase of the Master's
- Administrative Staff (JVAO)
- Programmatic Assessment Committee (PAC) Members
- Educationalists
- Key members of CHARM8 Management
- Mentors

A total of **380** participants were included in this evaluation of programmatic assessment.

The following sections detail the results from each evaluation data source. The data has been categorized into themes within each section for ease of understanding.

**Table 2** Data sources used for review

<b>Data source</b>	<b>Description</b>	<b>Date(s)</b>	<b>No. of respondents</b>
Student Phase Review Surveys (n=4)	Four Phase Review surveys (P1, P2, P3 cohort 1, and P1 cohort 2) were analysed for specific questions regarding Programmatic Assessment.	03/02/2022 01/07/2022 31/01/2023 26/01/2023	221
Capstone Supervisor and Second Reader Survey and Focus Groups	Following the completion of Phase 3 Cohort 1, a survey and focus group were conducted with Capstone Supervisors and Second Readers.	28/02/2023 20/02/2023	13 18
Teaching and Administrative Staff Survey (P1 and P3)	Following the completion of Phase 1 Cohort 2 and Phase 3 Cohort 1, Teaching and Administrative Staff were given the opportunity to provide feedback on the Phase.	13/03/2023	15
Educationalist Focus Groups	Five educationalists were consulted in an hour long focus group about their perceptions on programmatic assessment.	22/03/2023	5
PAC Survey	PAC members and Chairs were shared a survey asking for their perceptions of programmatic assessment.	12/03/2023	11
JVAO interview	An interview with a JVAO member responsible for the administration of assessment was conducted to ascertain their perceptions and challenges of Programmatic Assessment.	14/03/2023	1

<b>Data source</b>	<b>Description</b>	<b>Date(s)</b>	<b>No. of respondents</b>
CHARM8 Management	During the CHARM8 Kick Off meeting, a session on a review of the Master's was facilitated by the Head of the Alliance on the. In this session, programmatic assessment was isolated as a topic for discussion. Participants included members of the Executive Board, Academic Board, Facilitators, Heads of the Mobility Unit, DEI Unit, Education Support, and Chair of the PAC.	01/02/2023	10
Mentor feedback session	A focus group with existing CHARM-EU mentors was held to gain their perceptions, challenges and recommendations on the mentor programme. Programmatic assessment comments were extracted from this session.	02/04/2023	12
Professional Development Training analyses	All programmatic training materials were reviewed by a WP3.1 member.	08/05/2023	N/A
P2 Module Coordinators interviews	A member of WP3.1 conducted a focus group with all P2 module coordinators on programmatic assessment. This was because these were omitted from the Teaching Staff survey due to the timeline of the Master's and the timeline of this analyses.	04/05/2023	3
WP 6 Student feedback inclusivity session	WP6 organized an inclusivity session with CHARM students. The aim was to present WP6 work, give a safe space to the students to share their experiences within the programme, and collect feedback.	24/10/2022	70
Individual student feedback	The JVAO received a specific feedback on programmatic assessment from an individual student. This was deemed of importance to add to the evaluation.	10/05/2023	1



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Data source	Description	Date(s)	No. of respondents
Total participants			380

## 2.4. RESULTS

### 2.4.1. STUDENT EVALUATION OF PROGRAMMATIC ASSESSMENT

Three data sources were used for the student evaluation of Programmatic Assessment

- Four phase review surveys (qualitative and quantitative data)
- Data from an inclusivity feedback session
- One individual email submission from a student.

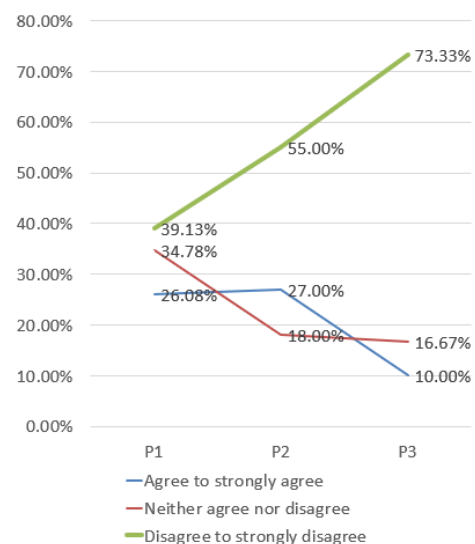
#### 2.4.1.1. STUDENT PHASE REVIEW SURVEYS

Data from four student phase review surveys were used to investigate student perceptions of programmatic assessment; Phase 1, 2 and 3 for cohort 1 (2021-2023), and Phase 1 in cohort 2 (2022-2024). These surveys are presented to students at the end of each phase, and contain a variety of questions related to their experience of the Master’s. Questions specifically related to programmatic assessment were extracted and analysed.

Within the first cohort (2021-2023), the data suggests that the students **did not have confidence** in programmatic assessment throughout the Master’s. This confidence **declined** during the Master’s with only 10% agreement at the end of the Master’s (see **Table 3**).

**Table 3** Student confidence in Programmatic Assessment across all phases in Cohort 1 (2021-2023)

	P1	P2	P3
Strongly agree	2.08%	0	0
Agree	22.92%	27%	10.00%
Neither agree nor disagree	33.33%	18%	16.67%
Disagree	35.42%	48%	40.00%
Strongly disagree	6.25%	7%	33.33%



Within the second cohort (2022-2024), results from Phase 1 were only available at the time of this evaluation. However, there was a similar **lack of confidence** in programmatic assessment with only one third of students reporting confidence.

**Table 4** Student confidence in Programmatic Assessment in Phase 1 in Cohort 2 (2022-2024)

	C2 P1	C1 P1
Strongly agree	1.85%	2.08%
Agree	31.48%	22.92%
Neither agree nor disagree	24.07%	33.33%
Disagree	33.33%	35.42%
Strongly disagree	9.26%	6.25%

Qualitative comments from the student phase review surveys provided an in-depth understanding of student perceptions of programmatic assessment (full report provided in Appendix A). A thematic analysis was conducted over this data. A total of 13,343 words were analyzed. The following sections describe the key themes that were generated from the thematic analysis, and provide some recommendations based on this. The results are grouped by phase where relevant, to describe any differences between the phases.

### Scorion (ePortfolio technology used in the Master’s)

In both Phase 1 and Phase 2 students gave mixed feedback about Scorion as an assessment tool. Approximately 25% reported that it was difficult/very difficult to use (e.g. “Working with Scorion went wrong a lot of times” and “Scorion is very user-unfriendly”). Although most respondents reported that Scorion was ‘easy to use and navigate’ by Phase 3, comments continued to be predominantly negative (e.g. “Scorion just doesn’t work”, “Scorion is always an issue and not opening or uploading” and “Scorion is difficult as if mistakes are made, it is impossible to correct”). However, one respondent felt “the Scorion platform and the way of assessing us was really interesting”.

### Scorion Recommendations from Students

- Review the use of Scorion as an assessment platform.
- Train assessors on how to use Scorion appropriately
- Train assessors on how to use Scorion related to accurate assessment of PLOs

### Workload

Overall, there was mixed feedback regarding the manageability of teaching and assessment workload. Some students felt the workload was well balanced during Phase 1 and 2, whereas others commented that they may have preferred fewer assignments to allow them to produce higher quality work. Others felt that the workload was not balanced with multiple deadlines occasionally overlapping (e.g. “the workload this phase has been a bit too much both for students and assessors. The feasibility of projects in the time frame that we have should be assessed beforehand. It was also a lot to have to do individual research at the same time as a group report”). The feedback relating to workload for Phase 3 indicated

that it was challenging to complete the full project in a relatively short timeframe. Students felt “it was challenging to do data collection in such a short amount of time”.

Cohort 2 students mentioned workload less often in relation to Phase 1. One comment suggested “the assignments could have been much sooner to avoid the stress in November”.

### **Workload Recommendations from Students**

- Improved communication between module coordinators to ensure that deadlines and workload are appropriately spread out.
- To make the workload more manageable, rather than reducing the number of assignments, relating assignments to a lower number of PLOs to reduce their size, may improve this experience.

### **Assessment Type**

Across all phases and cohorts more individual assignments were requested. Cohort 1 students also felt they would benefit from more of a diversity of assessments, particularly in Phase 2, rather than repeated presentations. Cohort 2 students provided more positive feedback in relation to the types of assessments with the video making and visual essay assignments were mentioned positively by respondents.

### **Assessment Type Recommendations from Students**

- An improved balance between individual and group assignments in all modules.
- Include a more diverse range of assessment types

### **Clarity**

A key concern expressed throughout all four sets of survey results relates to clarity of assignment briefs and instructions. Areas for improvement included “communication of assignments”, “assignments descriptions” and “Clear written instructions for each assignment should be provided”. Students also felt that there would be a benefit of centralising assessment information i.e. posting instructions on one platform. Students also felt that it would be beneficial to receive assignment instructions further in advance. For example, one respondent commented “give more clear guidelines about the final project slightly earlier”.

### **Clarity Recommendations from Students**

- Clear and precise written instructions detailing each assignment in each module should be provided well in advance of the set submission date, if not at the beginning of the phase.
- These instructions should include details such as word count and referencing style alongside clear explanation of how the assignment applies to the module and associated PLOs.

### **Grading & Feedback**

Students felt that “calibration of grades” between assessors and other individuals, was an area for improvement, and that grading was ‘unfair’ and variable between the different assessors. They

recommended “Training so assessors know exactly how programmatic assessment works”. Students also reported that they felt the grading system using descriptors rather than numerical grades was not useful. One respondent commented “The ‘pre-novice, novice, intermediate, etc.’ don’t work in my opinion, as they are really subjective in being translated to a grade. And that grade is important for future opportunities”.

### **Grading & Feedback Recommendations from Students**

- Clarity on grading procedures
- Assessor training should be considered to limit assessor subjectivity and disparity in grading and feedback.
- Providing feedback in a timely manner.

A full report of the qualitative comments within Student Phase Review surveys is available in Appendix A.

#### **2.4.1.2. INCLUSIVITY SESSION FEEDBACK**

In October 2022, WP 6 conducted an inclusivity session with CHARM-EU students. The Menti tool was used to ensure anonymity. The following points were mentioned by the students relate directly to assessment and grading.

#### **Assignments/learning**

- Students often receive last minute direction on assignments, or do not get enough instructions for assignments – this makes things more stressful than they’d have to be.
- Clearer assignments: because of different student backgrounds there is often disagreement about what needs to be done
- Assignments could be clearer as could the feedback. The feedback for the TR literature review did not seem extensive and did not give a lot of guidance for improvement. The Scorpion rubric made it seem very broad.
- Some individual work (instead of all group work) would be appreciated
- Getting to choose whatever topics we want on a project is nice, but it would be more constructive to get feedback on papers/work from actual experts. Now feedback is not as concrete, because assessors are not experts in the respective subject.

#### **Grading**

- Grading system is not transparent.
- Development is hard to follow if you only get feedback twice, I do not know whether not using grades is really working for all students.
- Grading system, it is not consistent, we did not get any translation from our grades to numerical grades, students get different marks with the same assessment grades. We complained multiple times but it seems we’re not heard here (3rd phase).
- Grading system, especially the lack in possibility to appeal. Teachers can also make mistakes. Demotivating and unfair.

**Table 5** Recommendations for improvement of assessment at inclusivity session

Learning	Grading
Make assignments both group work and individual.	Not have a “grade” expected for the level.
Designate mentors at the beginning	Set clearer expectations
Simplify assignment guidance and make it clear	Talk more open about evaluation criteria
	Give more constructive criticism on how to improve on assignments

### 2.4.1.3. INDIVIDUAL STUDENT FEEDBACK

The JVAO received an email from a Cohort 1 student following their graduation. Their feedback has been considered for this evaluation.

#### Lack of transparency on the assessment approach

- Lack of clarity on how PAC members assess portfolios. Students should be given concrete information on how this process works (e.g. use of mentor advice, how the dashboard is used).
- PAC feedback is often generic and difficult to interpret to progress to future phases.

#### Groupwork

- The lack of individual assessments in the first two phases were considered as a detriment to the final grade, in particular for those groups where there may have been problematic collaborations.
- Concerns on the emphasis on personal reflections for deciding the final assessment.
- A recommendation for group feedback in Phase 1 and Phase 2.

#### Assessment consistency

- Feedback can be inconsistent through the programme, and having one assessor who is following the student throughout would be beneficial.

#### PLOs

- For some phases it was very difficult to apply PLOs to assessments

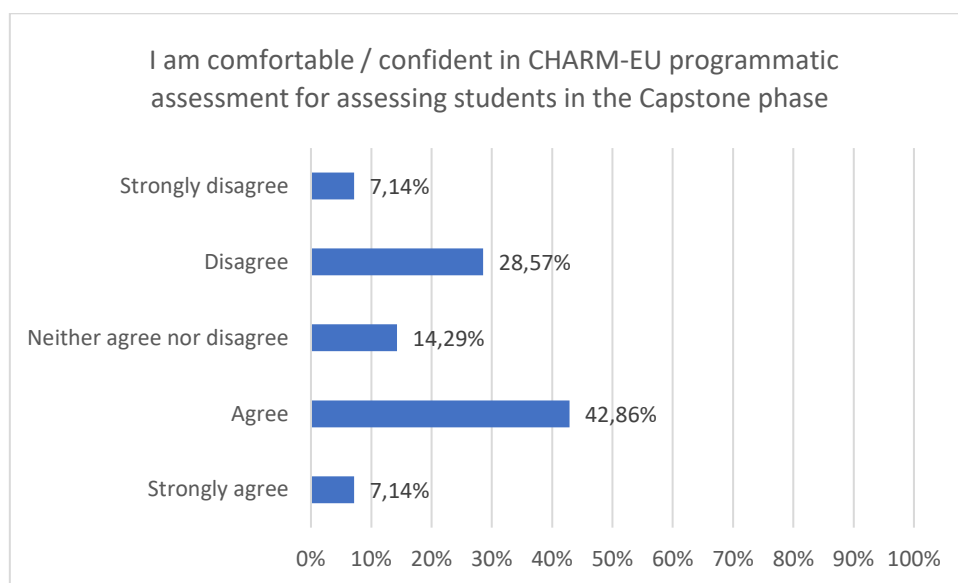
### 2.4.2. CAPSTONE SUPERVISOR AND SECOND READER EVALUATION OF PROGRAMMATIC ASSESSMENT

Two data collection activities were held with Capstone Supervisors and Second Readers after the end of Cohort 1 Phase 3. These activities, a survey and a focus group, sought to gather feedback from these stakeholders about their experiences with the Capstone. As part of these activities, questions related specifically to Programmatic Assessment were included.

### 2.4.2.1. CAPSTONE SUPERVISOR AND SECOND READERS SURVEY

In February 2023, Capstone Supervisors and Second Readers were invited to participate in a short survey about their experiences of the Capstone phase. Within this survey, four specific questions related to Programmatic Assessment were included. A total of 18 responses were retrieved. A focus on three main aspects, general Programmatic Assessment, Rubrics and Scorion have been summarised below.

Almost half of Supervisors and Second Readers agreed or strongly agreed that they were comfortable / confident in CHARM-EU programmatic assessment for assessing students in the Capstone phase. However, 35% disagreed with the statement.



**Figure 3** Supervisor and Second Reader perceptions of programmatic assessment

Qualitative feedback was analysed the following key themes generated.

#### Challenges with programmatic assessment.

- **Too many assessments:** Multiple respondents noted that there were far too many assessments in the short time of the Capstone. They suggested cutting down the number of assessments, having less assignments in a short time period (i.e. not grouping assignments in a certain week).
- **PLO specific:** Some participants felt that the PLOs were too specific, that there were too many in each assignment, too many levels, and that some assignments (e.g. TED talk) had too many PLOs to assess.
- **Transparency:** Others felt that the assessment approach was not transparent, and that communication on certain aspects (numerical grades, and grading levels) was poor. One respondent noted that it was “Complicated; confusing; frustrating”.

However, many also noted that ‘theoretically’ or ‘in principle’ it was a good approach.

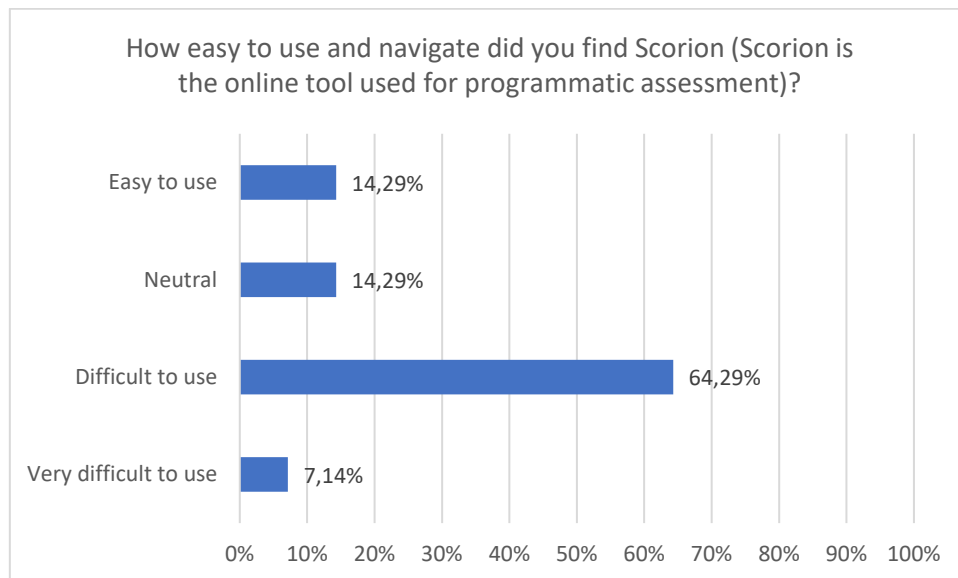
## Rubrics

Qualitative feedback related to rubrics specifically suggested that:

- **Overly complicated rubrics:** Multiple respondents noted that there were too many indicators in the rubrics and that they should be cut down, or made more concise.
- **Excessive workload:** The level of detail of the rubrics caused high levels of workload, and too many indicators also caused high workload and a ‘burden’.
- **Repetitive:** Some respondents felt that the indicators were repetitive.
- **Can lead to subjectivity:** One respondent felt that assessors were unclear as to the definition of certain aspects of the rubrics (e.g. should scientific standards in figures be under digital skills or scholarship) which could lead to subjectivity.

## Scorion

Supervisors and Second Readers overwhelmingly found Scorion difficult to use.



**Figure 4** Supervisor and Second Reader perceptions of Scorion

Qualitative data supported this finding with participants noting that it was not intuitive, Scorion forms were not user friendly, and more training was required.

### 2.4.2.2. CAPSTONE SUPERVISOR FOCUS GROUP

A Capstone Supervisor and Second Reader focus group was held on the 28<sup>th</sup> of February 2023. A total of 13 Supervisors and Second Readers participated. Within the focus group, specific questions were posed on assessment type and workload, PLO overlaps, and PLOs. These questions were selected using initial findings from the Capstone Supervisor and Second Reader survey data.

Key themes that were generated from the focus group included:

#### Assessment workload

- Supervisors and Second Readers commented that the number of assessments should be reduced to help improve workload for all parties (i.e. both students and staff), and improve time management of assessment administration.

#### **PLO specific**

- Reducing the number of PLOs was emphasized by multiple participants as a method for reducing the assessment workload. Others suggested being more selective of the PLOs needed to assess for certain assignments, have smaller number of PLOs assigned to each assignment, or assess certain PLOs at the start and certain at the end.
- Participants noted that the PLOs most relevant to assess students in the Capstone were Solving Challenges, Sustainability and Transdisciplinarity. This finding could support reducing the number of PLOs if this were to be recommended.
- Participants felt that there was much overlap between the PLOs, for example, oral and written communication could be included in Scholarship, and oral, written and digital skills should be combined. Others felt it was within the sub-PLOs that there were overlap and these could be refined. Additional suggestions were that ethics, stakeholder collaboration, written and oral communication are within multiple sub-PLOs and could be merged in one.

#### **Second Reader specific**

- Second Readers should only be involved for most important milestones, or a much smaller number of assessments to ease their workload.
- Other suggestions included giving separate PLOs for Supervisors and Second Readers, or to remove PLOs related to student interactions/presentations that Second Readers are not involved in.

### **2.4.3. TEACHING AND ADMINISTRATIVE STAFF EVALUATION OF PROGRAMMATIC ASSESSMENT (P1 AND P3)**

A survey was disseminated to Teaching and Administrative staff at the end of Phase 1 and Phase 3 of the Master's in February 2023. This survey asked respondents to reflect on these Phases generally and share challenges and best practices. The results from this survey were explored to ascertain if programmatic assessment was mentioned either explicitly and implicitly. A total of 15 responses from a range of stakeholders including a Teaching Assistant, Members of the JVAO, an Educationalist, a Capstone local coordinator, Module Coordinators, PAC members and a Teaching staff member were recorded. The following section summarizes some key points related to programmatic assessment.

#### **Scorion**

- Maintaining Scorion and the e-portfolio was a heavy administrative burden for JVAO during assessment periods.
- Solving Scorion technical issues for teaching staff and stakeholders was an administrative burden for module coordinators in the Capstone.
- Filling out Scorion forms was time consuming for Capstone teaching staff as the interface is not easy to work with and the copy to group button does not always work.
- P1 students struggle with using Scorion at the start of the Master's, and more time is needed to clearly state where information can be found and how to use the system.

- The technology is too complicated for staff who only occasionally use it.
- A suggestion was made that Scorpion work with assessors to improve the platform to fit their specific needs

### **Mentoring**

- Many students and mentors did not complete their PDPs and MAFs which caused challenges for administrative staff and PAC members.
- Improvements regarding integration and information on PDPs and mentors are needed.

### **PLOs**

- Multiple stakeholders felt that there are too many overlaps between PLO domains and indicators.
- PLOs and indicators require simplification and should be better aligned with the actual assignments
- Module coordinators should be able to edit PLOs on forms if needed.
- Greater subdivision in PLO levels were requested
- Module coordinators sought more support from Educationalists to better align PLOs with assignments

### **Assessment workload**

- Assessment workload for Capstone supervisors was deemed very high, as some had 6 or more individual reports to assess at the same time.
- Assessment workload for students should be reduced in the Capstone phase
- Better distribution of workload was suggested by assessing students on smaller tasks with lesser PLOs, rather than larger assessments with greater PLOs.

### **Assessment type**

- In P1, more individual assessments were provided in the newer cohort due to feedback and this was well received by students.
- Most of the assessments are group based, but the final grade is individual. This should be better reflected in the Phase Assessment.
- Peer feedback should have a control mechanism

### **Communication**

- Some Module Coordinators felt that students faced uncertainties regarding assessment and graduation rules.
- There were positive perceptions of Q and A sessions on assignments within certain modules as it gave students the opportunity to ask questions.
- Improved communication and coordination between PAC and supervisors in the numerical grading.

#### 2.4.4. EDUCATIONALIST EVALUATION OF PROGRAMMATIC ASSESSMENT

A focus group with 6 CHARM-EU educationalists was held on the 22/03/2032. The aim of this session was to explore broad perceptions of Programmatic Assessment from the perspective of Educationalists.

##### **Positive aspects**

Many positive aspects of Programmatic Assessment were presented by the Educationalists. These included:

- Training students in soft skills, practical skills, and self-reflection.
- Providing a mechanism for tailor made human feedback and visualizing student progression.
- Allowing students to focus more on feedback rather than grades.
- It is an inclusive and diverse approach that promotes a growth mindset for students.
- It is a way of upskilling staff and providing them with a different point of view and traditional paradigms.
- Aligns with the real work environment, and thus allows students to better prepare for the workplace

However, there were many challenging aspects documented by Educationalists. These included:

##### **Workload and timing**

- Programmatic assessment is generally very time consuming due to its novelty for teaching staff, requirement for a large amount of small feedback points, time it takes to change the mindset and attitude of staff, and a technology (Scorion) that is not useful.
- The workload on educationalists was often high, or time pressed.
- There were insufficient calibration sessions due to time limitations

##### **PLOs**

- Assessments related to PLO domains is very complex and has many data points (300+).
- Logistics and management of PLO domain assessment is challenging.
- Calibration of PLOs is challenging.

##### **Assessment**

- There was a perceived lack of consistency between assessors.
- Calibration of marks is challenging.

##### **Grading**

- Perception from educationalist that initially there were no grades, but now grades are used. This affects assessment as the focus is less on the qualitative feedback.

##### **Technology**

- Scorion caused frustration in teaching staff because of its user-unfriendliness.

### Teaching and learning experience

- Peer feedback was under utilized

### Training

- Students should be given training on providing peer feedback

### Recommendations from Educationalists

- Implement more peer feedback in assessments
- Evaluate the number of PLO domains and levels in terms of use and frequency in different modules.
- Allow more student ownership of PLOs, and provide space for co-creation of the goals.
- A full review of Scorion and its usability and design is required.
- Improved staff and student training and onboarding. This should include
  - Assessment samples and best practices.
- Improved communication on the use of Programmatic Assessment
  - A stronger rationale for programmatic assessment in CHARM-EU
- Improve the integration of Educationalists with KCTs
- Improve the integration of mentors with all other assessment stakeholders
- Allow more time for calibration
- Create user journeys for assessors and other assessment stakeholders to simply and understand.
- Review the grading process and its relevancy to programmatic assessment

#### 2.4.5. PAC EVALUATION OF PROGRAMMATIC ASSESSMENT

The Programmatic Assessment Committee (PAC) were shared a short survey in May 2023 to gain their perceptions of programmatic assessment. The following is a summary of the results.

10 responses were received from 8 PAC examiners and 2 PAC Chairs. The following **challenges** faced by the PAC with assessing students using programmatic assessment were discussed.

##### 2.4.5.1. CHALLENGES FACED BY THE PAC

#### Translating Feedback and Grades

- Translating holistic feedback into an overall level and numeric grade
- Achieving accuracy and fairness in grade translation
- Addressing grade inflation to satisfy students
- Relating group performance to individual performance
- Peer evaluation and its implications
- Grading phases with small numbers of individual assessments.
- Lack of contact with students by PAC members can cause evaluation challenges

#### Consistency and Standardization

- Applying consistent assessment criteria for all students
- Inconsistent marking by assessors
- Lack of transparency around the assessment approach for students

#### **Technical and Administrative Issues**

- Scorpion issues, and access issues with PDPs and MAFs
- Non-chronological assessment reporting and its impact on student improvement (i.e. between Phase 1 and Phase 2)

#### **PLOs and rubrics**

- Establishing connections between different assessments and PLOs
- Challenges with rubrics and their interpretation – levels are difficult to interpret
- Considering the timeline of student work to assess progression and evolution

#### **2.4.5.2. IMPROVEMENTS SUGGESTED BY THE PAC**

**Improvements** suggested for the PAC assessment process included the following themes:

##### **Feedback**

- Highlight the importance of including written comments in feedback for borderline cases
- Improve training for assessment feedback for teaching staff and assessors

##### **PDPs and MAFs**

- Almost all participants agreed that the PDPs were of great importance to their assessment process.
- Officially incorporating the Personal Development Plan (PDP) into the assessment process was recommended.

##### **Training and Communication**

- Improving training and information dissemination for assessors regarding programmatic assessment in all three phases
- Improved Scorpion training for assessors
- More opportunities for communication between assessors
- Clarification of grading process for assessors

##### **Student communication**

- PAC members should be invited to the final project presentation of phase 1, where a contact with the group will help the evaluation of all the different topics.

##### **Improved Assessment Process and Decision-making**

- Incorporating intermediate decision-making assessments during each phase to avoid surprises
- Involving mentors in the assessment process

- A subcommittee of the PAC should be evaluating complex student cases

### **Revision of use of Numeric Marks**

A variety of different opinions were presented for this topic including.

- Using numerical marks is problematic and artificial for programmatic assessment. This should be revised.
- A grade should be provided for each assessment and a weighted average at the end.
- A correlation between level of each PLO and final phase grade is recommended.

### **Evaluation of programmatic assessment**

- A thorough evaluation of the programmatic assessment system using PAC members, students, mentors, and teachers.

### **Streamlining the PAC Meeting**

- Recommending sharing the evaluation sheet in advance to address incompatibilities beforehand
- Improving efficiency and reducing redundancy in PAC meetings

## **2.4.5.3. CHALLENGES AND SUGGESTED IMPROVEMENTS WITH SCORION AND DATA ENTRY**

### **Visual changes**

- Request for different colors or shadings to indicate individual/group assignments.
- Request for different colours in the overall spider graphic to better identify different levels

### **Ordering and sorting**

- Ordering of assessments based on the submission deadline rather than the date of feedback. As this causes misinterpretation with student progression.
  - Ideally you would be able to switch between submission date and feedback date
- Identifying which assignment has which result in the timeline view, especially when two assignments are merged together.
- Search functionality for assignments should be improved, in particular remediation assessments.

### **Access and Technical Issues**

- Improve access and registration of assessors. Currently it requires multiple emails and is cumbersome.
- Improve access issues for all files.

### **Data input**

- The current form is very time consuming to fill out. Suggestion for UX overhaul
- Many PAC members have to copy and paste their feedback. This is time consuming and there should be facility to upload Excel or Word files.

- PAC should have the ability to amend their feedback after submission
- PAC should be able to access a copy of all feedback from PAC members in case there are differences of opinion

#### **2.4.5.4. ASSESSMENT QUANTITY RECOMMENDATIONS**

The majority of respondents (63%) felt there should be an increase the number of individual assessments, as there were too many group assessments, in particular in P3. The participants acknowledged that the students require group projects but identifying single student contributions is challenging. Other suggestions included students could upload their individual parts to group assessments.

Some participants felt that there needs to be a minimum of three assessments per PLO to make meaningful holistic feedback. In some phases, there was a perception of too few assignments (e.g. P2 and P3) and in others, too many (P1).

#### **2.4.5.5. PLOs AND RUBRICS RECOMMENDATIONS**

There was a perception of too many PLOs, PLOs that could be merged (e.g. TR and Scholarship, 3.4 and 3.5, oral and written communication), and a rewording and simplification of rubric descriptions. Some participants felt that communication was difficult to assess as the PAC members were not present during these assessments. A suggestion was made for a different rubric for each phase.

Achievement of the expected level of all PLO domains to pass the phase/master

Respondents were asked whether students should have to reach the expected level in all PLO domains to pass a phase or the Master's itself. The participants were divided with 45% disagreeing and 55% agreeing.

#### **2.4.5.6. COMPENSATION FOR PAC MEMBERS**

PAC members were asked what type of compensation they sought for their work. Results included:

- A stipend allocated to their workload model.
- Financial compensation after each phase
- Defined number of hours (e.g. 10 hours per phase, 2 hours per portfolio)
- Academic recognition

#### **2.4.5.7. OTHER RECOMMENDATIONS**

- Improve the alignment of PLOs to assessments so that it is clearer that students are progressing.
- Check student's understanding of PLOs in each phase to track their progress.
- Train students in providing peer feedback

#### 2.4.6. JVAO EVALUATION OF PROGRAMMATIC ASSESSMENT

An interview with a JVAO member who is responsible for administrative aspects of Programmatic Assessment was held on the 14/03/2023. The following is a summary of key challenges and issues that emerged during the interview.

##### 2.4.6.1. TECHNICAL CHALLENGES

- Scorpion creates many administrative activities that are often time consuming, for example, providing access to different stakeholders, and making changes to assessments during module delivery.
- The initial individuals who worked on the development of Scorpion are no longer available, and identifying processes required in Scorpion can be a 'black box'.

##### 2.4.6.2. COMMUNICATION CHALLENGES

- Clearly explaining Programmatic Assessment to all stakeholders (e.g. PAC members, students, and module co-ordinators) is challenging because of its complexity. Many documents are available, but often not all information is shared to stakeholders, or is in multiple locations and is difficult to find.
- Often information is shared in an oral format within a workshop and key knowledge may not be understood.
- Communication between and within students, PAC members and module coordinators regarding assessment needs to be improved.
- Defining portfolio completion should be more clearly communicated across all stakeholders. Often there is a lack of coherence as to whether a portfolio is completed from the perspective of students, PAC members, JVAO, and module coordinators.

##### 2.4.6.3. ADMINISTRATIVE CHALLENGES

- The current process for administrating Programmatic Assessment is very manual and involves many steps. This has the potential for clerical errors.
- Privacy and GDPR has been highlighted as an issue as often grades are located in different locations, are communicated via email to students, and could be located in folders which could be accessed by individuals that should not have access.
- There is a lack of clarity around the time period for which assessment data should be kept.

##### 2.4.6.4. STAFFING CHALLENGES

- Onboarding new staff requires a clearer bank of information, and a more defined process.
- Organizing, keeping track, and recruiting PAC members is time consuming and membership often changes or requires oversight.
- The time period between teaching and assessment is often quite large, resulting in queries and further clarity required

- Better communication is needed between PAC and module coordinators for informing the students about their portfolio.
- Better communication is needed about the assessments for the PAC at the start of a phase. A suggestion would be for the PAC and the module coordinators to meet at the start of a phase for context.
- Better clarity on how the grades are agreed upon is needed for module coordinators.

#### **2.4.6.5. STUDENT CHALLENGES**

- Students often have questions regarding assessment that are communicated to the JVAO email including equivalencies and extensions.
- Students are often unaware that their portfolio is complete, or have questions regarding whether they have all of their assessments within Scorion. This causes an administrative burden and an option that Scorion displays that their portfolio is complete or lacks a certain assessment would be useful.
- Students ask questions about grades, what do they mean, and when they will receive them. In addition to this, there is no fixed grading scheme in CHARM. The scale is clear – 0-100 but the grading steps have not been set. Nor is clear who is in charge of making this decision. As demonstrated by the current discussion in the PAC-2.

#### **2.4.6.6. CLARITY AND TRANSPARENCY CHALLENGES**

- The process of aligning PLOs to a final numerical grade is not clear.
- The rationale for providing a numerical grade needs to be clearer for students. If we are focused on the process rather than the end product, the rationale for providing a numerical grade needs to be very clear and rationalized.
- Clarity around MAF and PDP submissions (and mentoring in general), their rationale, requirements, and any penalties for not submitting is needed. This clarity could ensure that they are taken more seriously by students.

#### **2.4.6.7. RECOMMENDATIONS FROM JVAO**

- A clear procedure for Grade Management, including GDPR issues, is required.
- A private database for CHARM-EU grades should be created
- A clear rationale and process for developing numerical grades from the PAC should be documented and shared with students and module coordinators.
- A section on Moodle related specifically to Mentoring and Assessment for students would be useful to collate all information in one place. This would add to greater clarity and augment oral workshops.
- Mentoring and documents related to mentoring needs to be more clearly communicated to all parties.
- An automatic indication of portfolio completion should be presented on Scorion.
- Senior PAC members and module coordinators should meet at the start of a phase for sharing information about assessments.
- All assessment documentation should be reviewed for clarity.
- All assessment documentation should be collated in one place for clarity.

- Recognition and reward for PAC examiners and mentors (e.g. A digital badge)
- Scorpion needs to be more user friendly and redeveloped.
- A yearly administrative calendar for Assessment should be ready before the start of the Master's, ideally in July.
- Staffing for the PAC should be finalized as early as possible. The Chair and Senior PAC members should be finalized in September.
- Quality enhancements regarding assessment from the PAC should be fed into module coordinators when they are redesigning or reviewing a phase.

#### **2.4.7. CHARM8 MANAGEMENT EVALUATION OF PROGRAMMATIC ASSESSMENT**

During the CHARM8 Kick Off meeting, a session on a review of the Master's was facilitated by the Alliance Secretary General on the 01/02/2023. In this session, programmatic assessment was isolated as a topic for discussion. Participants included members of the Executive Board, Academic Board, Facilitators, Heads of the Mobility Unit, DEI Unit, Education Support, and Chair of the PAC. Participants were asked to provide their perceptions on what should be kept or removed from the Master's, and discuss further why. A board with sticky notes was used to collect ideas.

##### **2.4.7.1. EMERGENT TOPICS RELATED TO PROGRAMMATIC ASSESSMENT**

- Rubrics need to be improved and reformed
- Remove Programmatic Assessment and replace with situated / project based learning
- Remove Scorpion
- PLO domains need to be improved
- Greater professional development for staff
- Define who can assess
- Greater focus on feedback given
- Improved inter-module collaboration
- Simplification of Programmatic Assessment
- All decisions should be made with evidence
- Explore why the students do not trust Programmatic Assessment
- Consider resource load
- Improved alignment between PLOs, assessments and rubrics.
- What alternatives are possible
- Reduce assessment
- Programmatic Assessment is a great leap from traditional programmes – this is an added value

#### **2.4.8. MENTOR EVALUATION OF PROGRAMMATIC ASSESSMENT**

A focus group with existing CHARM-EU mentors was held to gain their perceptions, challenges and recommendations on the mentor programme in April 2023. The following points relate specifically to programmatic assessment

#### 2.4.8.1. SCORION

- Scorpion was highlighted as a challenge for mentors: These challenges included accessibility issues. For example, some only able to login as a student. Some reportedly could not see all the students they are mentoring on scorion. Some could not access the information they would like/need and only have access to the PDP.
- Mentors would like access to their assessments, feedback and student information too.

#### 2.4.8.2. COMMUNICATION

- Mentors suggested they would benefit on a 1-page timeline on main assessments, exams, groupwork, fieldtrips, what students are expected to be doing at any given time. It would allow mentors to have prompts for students and to potentially be more aware of potential challenges students are facing at that time.

#### 2.4.8.3. PDPs

- Create PDPs that are more interesting and relevant. Could PDPs be developed to show the level of student development. Some PDPs info at the moment is practical but not necessarily useful or relevant. Current PDP format means there is a lot of repetition.
- PDP process may need redefining and adapting as the programme goes on/as the student goes through the programme.
- Perhaps use different objectives at different stages of the course – e.g. relate the PDPs to the specific PLOs for that phase. (For example, Phase 1 students are only getting to know the programme and themselves as students in the programme, but it becomes more topic/strand specific in phase 2 and then about projects in phase 3). Students did not necessarily follow the guidelines the whole way through the programme.
  - A more formalized structure around each of the PDPs. Different objectives at each point/phase/topic to show development – more specific structure for each student.
- Some of the first CHARM students could be asked if their PDPs could be used as examples for current and future students and mentors. This may show what is expected, what works well and what does not. It was also suggested that it would be beneficial to give details on why certain examples are good and others require further work/improvements. This links into the overall theme that more clear information to students is needed and to provide best practice examples.
  - Feedback was given that there are too many PDPs throughout a phase at present and this leads to repetition. A suggestion was given to have only one submission at the end of the semester.

#### 2.4.8.4. TRAINING

- All mentors stated that they would like to know more about programmatic assessment.

#### 2.4.9. REVIEW OF TRAINING AND PROFESSIONAL DEVELOPMENT RELATED TO PROGRAMMATIC ASSESSMENT

The following resources were extracted from a Professional Development report created by CHARM-EU WP4. It gives some context as to the type of training that was provided on programmatic assessment during the first and second iteration of the Master's.

- [Masterclass CHARM-EU Assessment \(Toolkit\)](#): Teaching staff learned about the concept of programmatic assessment, why it is important, how it can be implemented and what it means for teaching practice. 12/1/2021
- Introduction to CHARM-EU mentoring (Moodle): E-learning
- VLE general Q&A: KCTs had the opportunity to ask questions about the CHARM-EU Virtual Learning Environment (Moodle, MS Teams, Scorion, applications) and the implementation into their modules/themes. 12/1/2022
- Crash course CHARM-EU Assessment: Everything you need to know!  
An expert presented some practical tips and tricks for assessment in CHARM-EU followed by an interactive Q&A session. (21/2/2022)

#### 2.4.10. P2 MODULE COORDINATORS EVALUATION OF PROGRAMMATIC ASSESSMENT

Three Phase 2 module coordinators had a short discussion on issues related to programmatic assessment. This was due to the lack of a post phase 2 survey at the time of this analysis. There was an agreement that programmatic assessment as such is very good approach and students might greatly benefit from being assessed at several points of their educational journey. Apart from the basic positive evaluation of this type of assessment method some critical points and/or challenges have also been identified:

Though the PLO domains seem to be correct the actual rubrics are not fully proper. They are not fitting well with the content of the modules at some points. The KCTs were not fully aware and did not participate in creating the rubrics, consequently they are not properly covering the agreed content of the modules and it was difficult in many cases to establish the linkages between the assignments and the rubrics.

- For the future it is suggested that the content development and rubrics' description activities should go hand in hand
- There are certain PLO-s where to make a judgement is very challenging, for instance to judge/assess collaboration is nearly impossible, especially that collaboration can appear in different perspectives: (i) within group, and (ii) collaboration with stakeholders, the rubrics do not help a lot in being able to formulate a proper, unbiased assessment based and/or related to the assignment
- There is a lot of redundancy in the rubrics that belong to different PLOs, at some points it would be useful to reformulate the rubrics to avoid these redundancies.
- There were a few technical issues with Scorion., especially when we gave the qualification, maybe instead of a drop-down menu a scale would be easier to handle;

it is still an open question how the PAC's work can be made more transparent and how the procedures can be made more tangible for the students and for the assessors

## Recommendations from Phase 2 Module Coordinators

- Reformulation of the rubrics to make sure that the content and the assessment criteria are more coherent
- It would be good if we (teachers, assessors) could check if other platforms can be used for this type of assessment practice
- Professional discussions would be needed on the experiences gained during programmatic assessment including different tracks/modules, to share and understand concrete examples would also contribute to the better utilization of the technique

### 2.5. SYNTHESIZING RECOMMENDATIONS

A total of 208 recommendations were made across all of the data sources<sup>1</sup>. These were inputted into an Excel document and duplicate / overlapping recommendations were identified. A final number of 130 recommendations were made.

To manage these recommendations each recommendation was initially given one of 17 discrete themes. This allowed for easier addressing and practical addressing.

**Table 6** Thematic synthesis of programmatic assessment recommendations

Administrative	Assessment type	Assessment workload	Capstone Supervision
Communication	Feedback	Grading	Mentoring
PAC specific	Training	PDPs and MAFs	Pedagogy
PLO	Rubrics	Scorion/Technology	Staffing
Transparency			

### 2.6. ACTIONING RECOMMENDATIONS

To address these recommendations, and align with the task updating the CHARM-EU Programmatic Assessment approach with recommendations derived from the review, WP3.1 proposed the use of working groups to address or investigate each recommendation within larger themes. However, under the recommendation of the Academic Council in July 2023, these recommendations were requested to be prioritized for short term resolution and fed into existing structures for addressing (i.e. instead of a dedicated PLO and Rubrics Working Group, WP11 (Professional Development) were tasked with reviewing the rubrics). Although each recommendation was addressed and actioned where possible,

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<sup>1</sup> Some of these recommendations were duplicated across data sources.

below are the key recommendations actioned. A full list of recommendations and actions are available upon request.

### 2.6.1. ACTIONS BASED ON TRAINING RECOMMENDATIONS

WP11 is responsible for the Professional Development of CHARM-EU staff. As such, relevant recommendations were shared with them on the 21<sup>st</sup> of July 2023 and a variety of new actions were implemented.

**Table 7** Actions and recommendations related to training

Recommendation	Action
<p>Improve the training for assessors on how to use <b>Scorion</b> appropriately, including how to use Scorion to accurately assess PLOs.</p>	<p>A training plan for the new eJournal platform, which has replaced Scorion, was implemented in September 2024. This included training for all teaching staff, PAC members and assessors. In addition, optional drop in sessions were held so that students, teachers and administrators could bring their queries to technical staff.</p>
<p>Improved staff and student training and onboarding on <b>programmatic assessment</b>. This should include assessment samples and best practices, user journeys for assessors and other assessment stakeholders, a one page best practices to limit subjectivity and disparity in grading and feedback.</p>	<p>A new training plan for teachers and students related to programmatic assessment was implemented in September 2023 by an educationalist with expertise in programmatic assessment. This was duplicated in September 2024 and augmented with workshops with Programmatic Assessment experts.</p> <p>Specific training on Programmatic Assessment was implemented at the Master’s staff hackathon in Barcelona in June 2023.</p>
<p>Improve the timeliness, constructiveness, and consistency of assignment feedback to enhance the learning experience for students by offering a <b>feedback training session</b> for all assessors and PAC members. Ensure that assignment feedback includes specific guidance on how students can improve</p>	<p>WP11 have implemented a feedback training workshop for all teaching staff including assessors which will be held every year.</p>

their work in alignment with the Program Learning Outcomes (PLOs).	
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### 2.6.2. ACTIONS RELATED TO PAC RECOMMENDATIONS

To address recommendations directly related to the PAC, a plenary meeting was held on the 24th of October 2024. Prior to this meeting, a [Miro Board](#) was shared with all PAC members detailing the recommendations. PAC members were asked to prioritize recommendations that should be addressed in the short term. As a result of this meeting, two key actions were highlighted which were addressed by the PAC and the JVAO responsible for education:

**Table 8** Actions and recommendations related to PAC

Recommendation	Action
Create a document which describes <b>how grading is agreed upon in the PAC</b> and share with all stakeholders.	Transparency and communication related to grading was improved via a section added to the student handbook.
Establish a framework for relating <b>group performance to individual performance</b> to ensure fairness and accuracy in evaluating students' contributions within a group context.	A new absence policy was implemented in September 2024 which highlighted the importance of attendance during the Master's and provided a framework for supporting students with persistent absences. The PAC will be informed about students who have persistent absences and may take this into account when reviewing student portfolios and in particular PLO 7 - professional development.

### 2.6.3. ACTIONS RELATED TO MENTOR RECOMMENDATIONS

Between February and September 2023, the CHARM-EU mentor programme was completely redeveloped in response to a detailed evaluation (see Appendix E and F). Some of the actions included:

**Table 9** Actions and recommendations related to mentoring

Recommendations	Actions
Clarify the roles and responsibilities of the Mentor Administrator, Mentor Coordinator, Mentor Local Coordinator, and Mentor Trainer (see section below).	The roles and responsibilities were clarified and documented with two key roles now established, Mentor Coordinator and Mentor Administrator.

<p>Redevelop the <b>Mentor Programme handbook for Mentors and Students</b> clarifying role expectations, mentor/student meetings calendar, PDP deadlines, MAF deadlines, year at a glance calendar, overall structure, and PDP/MAF templates.</p> <p>Develop an <b>internal Mentor Programme Administrative handbook</b> for the Mentor Administrator, Mentor Trainer, and Mentor Local Coordinators</p> <p>Incorporate mentor meetings into the Student Calendar.</p> <p>While recruiting and managing the mentors, each local coordinator of the 5 universities should identify a "backup mentor" at the beginning of each phase in case there are students left behind</p>	<p>A new handbook was developed.</p> <p>Task descriptions for each role were documented in a procedures manual developed by the Mentor Administrator.</p> <p>This was not implemented due to operational challenges however, more guidance was provided to students on how to meet with their mentors.</p> <p>Backup mentors have been identified in all partner universities.</p>
<p>Develop clear mentor criteria for selection (commitment, number of mentees they can take, relationship to CHARM etc...) and document in an <b>internal Mentor Administrative handbook</b>. This will reduce the mentor pool, easing administrative workload and improving quality.</p> <p>Create a <b>Mentor Registration form</b> including selection criteria, which is shared with any prospective and existing mentors to register their interest in being a mentor.</p> <p>Match students and mentors based on their interests and Phase 1 location. This would involve using the <b>Mentor Registration form</b> to gather this data from mentors, and using student registration data to align mentors and students.</p>	<p>Clarity on mentor criteria for selection was improved and documented in the procedures manual.</p> <p>This was not implemented as it was not deemed administratively necessity and feasibility due to local arrangements.</p> <p>This has been implemented.</p>
<p>Create a <b>CHARM-EU/Mentor Agreement</b> to formalize commitment by mentors during their onboarding process. This would be signed by mentors when they are selected as a mentor.</p>	<p>Mentors do not sign an agreement however a large number of additional resources have been created to ensure commitment by mentors.</p>

<p>Create a <b>Mentor/Student Agreement</b> to formalize commitment between Mentors and Students. This would be signed by both parties in their first meeting.</p>	<p>This was not implemented due to operational feasibility and relevance. The mentor team felt it was not necessary for this cohort but will revisit if needed in the future.</p>
<p>Clearly outline mentor roles, activities and expectations in the <b>Mentor Programme Handbook</b></p> <p>Add all mentors onto <b>Student Newsletter emails</b> to improve visibility.</p> <p>Use Local Mentor Coordinators to inform mentors what activities students are currently doing.</p> <p>Develop a clear procedure guideline for mentor/student communication issues, how to react if problems/conflicts arise in the mentor/mentee relationship</p>	<p>This has been implemented.</p> <p>This has been implemented.</p> <p>This is done in the monthly drop in sessions.</p> <p>This is documented in the handbook and in the procedures document.</p>
<p>A formal <b>Mentor Trainer role</b> is created within WP11 (Professional Development) to align with deliverables of WP11 and WP3.</p> <p>Redevelop the <b>Mentor Training Programme</b> based on recommendations including new content, drop in sessions, local sessions and peer support.</p>	<p>This has been implemented.</p> <p>This has been implemented.</p>
<p>Create <b>Mentor Moodle modules</b> for students to improve the communication of the mentoring programme.</p> <p>Improve <b>Mentoring resources</b> for students during the orientation week.</p>	<p>A dedicated mentor session with students for information is done at the start of the programme, and at the start the start of each phase.</p>
<p>Incorporate new <b>PDP guidelines and templates</b> for mentors and students in the Mentor Handbook for Students and Mentors.</p> <p>Incorporate PDP deadlines into the timetable</p> <p>Reducing PDPs to one per phase due to short time periods between existing PDPs</p>	<p>This has been implemented and is available on the Programme Assessment platform.</p> <p>This has been implemented</p>

which impacts on reflection periods for students.	This has been implemented
Develop a <b>check in form</b> for students at the end of Phase 1 to ascertain if mentor communication has commenced and structure future meetings	This has been implemented.

#### 2.6.4. ACTIONS RELATED TO ADMINISTRATIVE RECOMMENDATIONS

A variety of actions were implemented to improve the administrative functioning of Programmatic Assessment, including how the PAC is administrated. A selection are presented below.

**Table 10** Actions and recommendations related to administration

Recommendation	Action
Explore if PAC members could be invited to the final project presentations in each phase to improve evaluations.	This has been implemented
Consider whether a subcommittee of the PAC should evaluate complex student cases	PAC has decided that complex student cases will be reviewed by a 3rd PAC examiner and the PAC chair
Improve efficiency and reducing redundancy in PAC meetings by documenting current processes and identifying streamlining procedures.	This was implemented by the PAC and JVAO.
Review the assessment form used to avoid copy and pasting. Explore whether an Excel or Word document could be uploaded rather than re-entering all information in the form itself	A new procedure was implemented.
Explore whether PAC members can amend their feedback after submission	This has also been solved in the new procedure. PAC member can change until the moment BOE has approved the grades.

Explore whether PAC member feedback can be shared across all assessors, in particular, assessors who are sharing a student portfolio.	PAC members have now access to each others feedback forms in a Sharepoint.
Staffing for the PAC should be finalized as early as possible. The Chair and Senior PAC members should be finalized in September.	This has been implemented

### 2.6.5. ACTIONS RELATED TO PLOs

For the new Master’s accreditation, the PLOs were revised from 7 to 8 PLOs. This ensured that all PLOs were connected to a PLO domain which provided greater clarity in assessment.

### 2.6.6. ACTIONS RELATED TO SCORION/TECHNOLOGY

Reviewing Scorpion was a major recommendation in this review, and based on this analysis and other institutional factors a new Programmatic Assessment platform, eJournal, was implemented in September 2024 for Cohort 4 of the Master’s. This new platform addressed many challenges with Scorpion, and a full evaluation of this will be implemented in February 2025 to ascertain its roll out. This will be a key evaluation for Programmatic Assessment as we will be able to explore whether the confidence with Programmatic Assessment increases with an improved technology platform.

### 2.6.7. ACTIONS RELATED TO COMMUNICATION

Improved communication on programmatic assessment was a common recommendation and the following actions were implemented.

**Table 11** Actions and recommendations related to communication

Recommendation	Action
Enhance communication and clarity on graduation rules to address uncertainties faced by students.	A section on graduation rules has been added to the Rules and Regulations on Assessment and Progression.
Enhance transparency around the assessment approach for students to	The Student Handbook was updated to include greater clarity on assessment and grading. An overall assessment table has been created.

ensure clarity and understanding	
Provide more Q and A sessions on assignments for students	<p>A drop in session related to eJournal was implemented for student Q and As.</p> <p>Module co-ordinators are now providing greater clarity on assessments and their timelines which is facilitated by the new eJournal platform.</p>
Improved communication on the use and rationale of Programmatic Assessment for students and staff	WP11 have implemented multiple new programmatic assessment workshops for teaching staff on PA.
All assessment documentation should be reviewed for clarity.	A new procedure for updating the Rules and Regulations on Assessment has been implemented.

#### 2.6.8. OTHER ACTIONS RELATED TO GENERAL ASSESSMENT

A number of other key actions were implemented to improve assessment generally, these included:

**Table 12** Other actions and recommendations

Recommendation	Action
Create best practices for peer feedback for students including rubrics.	<p>A UU researcher on feedback made a video about Feedback Questions which was shared with CHARM-EU staff to share with students.</p> <p>During the Master's Hackathon at the start of the programme a session on how to give peer feedback was implemented by the Transdisciplinary Research Module Coordinator.</p>
Clearly describe and provide a rationale for grading in programmatic assessment for all stakeholders.	Greater clarity on grading has been created in the Student Handbook which can be accessed by all stakeholders.
Provide guidelines and criteria for PAC members to ensure consistency in assessment.	The PAC handbook has been updated with more guidelines on grading

### 3. SYSTEMATIC REVIEW ON ALL EDUCATION PRINCIPLES

#### 3.1. TASK AIM

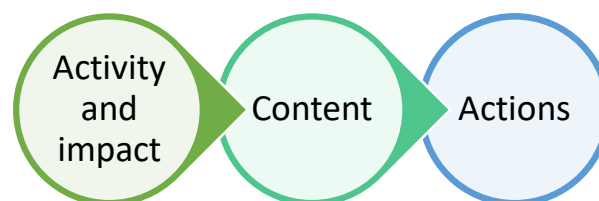
The CHARM-EU educational principles represent the guiding concepts that underpin the design and delivery of a CHARM-EU educational experience. They are the result of a series of workshops held throughout 2019 (Utrecht, June 2019, Budapest, September 2019, and Dublin, February 2020) in which all initial CHARM-EU partners<sup>2</sup> articulated an educational philosophy, mission, vision and values for CHARM-EU educational programmes. For the initial CHARM-EU project they were defined as:

- Challenge-driven,
- Research-led and research-based,
- Sustainability,
- Technology-enhanced,
- Student-centred,
- Situated learning,
- Transversal skills,
- Transdisciplinarity,
- Transnational and intercultural learning, and
- Inclusivity

As part of CHARM8 WP3.1, the educational principles were systematically reviewed and updated, and actions were implemented as part of this. This formed part of D3.1.

*“Systematic review on all Education Principles (with an emphasis on challenge-based, transdisciplinary, inclusive, technology enhanced, transnational/intercultural teaching around sustainability challenges)”*

There are three key thematic aims for this systematic review:



#### Educational Principles Activity and Impact

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<sup>2</sup> In 2023, four new partners joined the CHARM-EU alliance.

- Review the perception, integration, and impact of educational principles based on existing data and documentary evidence, and input from all stakeholders.
  - Explore the **perceptions** of the educational principles from the perspective of CHARM-EU stakeholders (e.g. students, teaching and administrative staff, external stakeholders)
  - Explore the **integration** of the educational principles in CHARM-EU **teaching experiences**.
  - Explore the **integration** of the educational principles in CHARM-EU **teaching staff and student values**.
  - Explore the **integration** of the educational principles in CHARM-EU **documentation**.
  - Explore the **value** of educational principles for scaffolding and improving student **learning outcomes**.

### Educational Principles Content

- Review the **content** of the educational principles in terms of consistency and coherence.
- Explore whether **new** educational principles should be added based on the analysis
- Explore whether educational principles can be **refined** based on the analysis
- Explore whether educational principles can be **removed** based on the analysis

### Educational Principles Actions

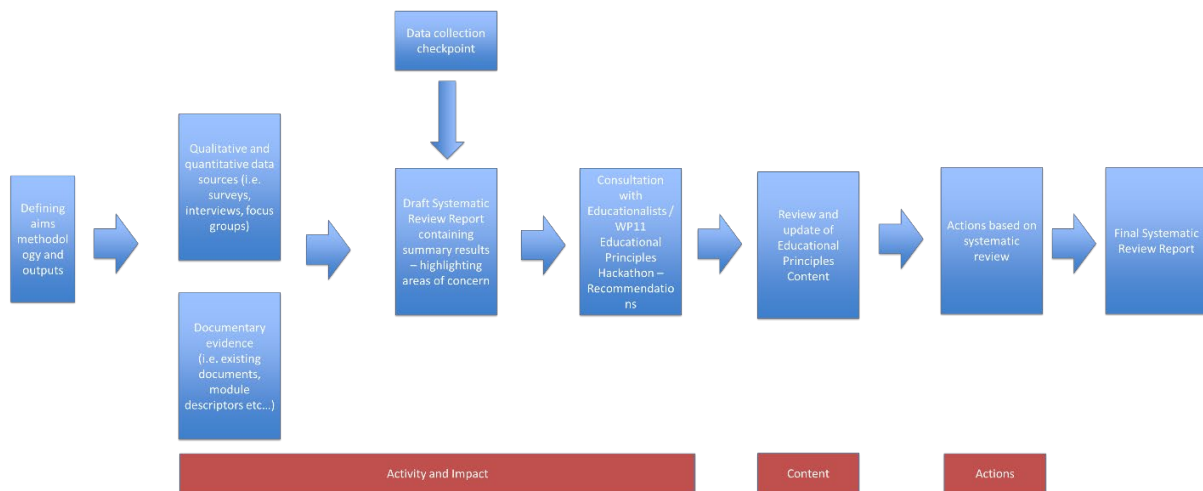
- Based on results of the previous aims, improve **student outcomes, staff development and curriculum design** by providing clear actions for Educationalists, Academic Council and Teaching Staff.

## 3.2. METHODOLOGY

The process of the systematic review started with the definition of the aims, outputs and methodology in February 2023. Following this, an analysis of all qualitative and quantitative data sources relative to the educational principles was conducted to inform the **activities and impact aim**. Alongside this analysis, documentary evidence relative to the educational principles was also analyzed to align with the aims of the task. When these tasks were completed, a data collection checkpoint meeting was held in May 2023 to consider if any further data collection is required. A draft systematic review report was then developed summarizing the results from the analysis, highlighting areas of concern and those requiring further discussion. After this draft report has been completed, an Educational Principles Hackathon was conducted with Educationalists to prioritize recommendations to align with the task aims.

Once the systematic review report was completed, the content of the educational principles was reviewed and updated to inform **the content aim**.

Actions were then identified to operationalize some of the key findings of the systematic review and align with **the action aim**.



**Figure 5** Process of educational principles systematic review

### 3.3. EDUCATIONAL PRINCIPLES ACTIVITY AND IMPACT

A variety of qualitative, quantitative, and documentary data sources were used for the systematic review of the educational principles. This part of the systematic review aligned with the Activity and Impact aim.

Qualitative and quantitative data sources were used from the following stakeholders:

- Students from the Master's in Global Challenges for Sustainability
- Teaching staff from the Master's in Global Challenges for Sustainability
- Administrative staff from the Joint Virtual Administrative Office
- Educationalists
- Capstone Supervisors and Second Readers
- External Stakeholders

Documentary data sources have been used to explore the presence, absence, clarity and consistency of the educational principles including:

- Pedagogical Guidelines
- Educational Principles
- Teaching and Learning Handbook
- Practical tips for KCTs
- Educational Principles Infographic
- Professional Development Evaluation Report
- Master's in Global Challenges for Sustainability module descriptors
- Master's in Global Challenges for Sustainability module design templates

**Table 13** below describes these in greater detail.

**Table 13** Data sources used for review

Data source	Description	Date	No. of respondents
Student Phase Review Surveys (8)	Eight Phase Review surveys (P1, P2, P3 cohort 1, P1,P2,P3 cohort 2 and P1, P2 cohort 3) were analysed for information regarding educational principles.	03/02/2022 01/07/2022 31/01/2023 26/01/2023 22/06/2023 02/02/2024 29/01/2024 20/06/2024	417
Capstone Supervisor and Second Reader survey and focus groups	Supervisor and Second Reader Survey and focus groups for C1 Capstone students	28/02/2023 20/02/2023	13 18
Teaching staff and administrative staff survey	C1 P3 and C2 P1 teaching and administrative staff survey.	13/03/2023	15
Educationalists focus groups	Focus group with Educationalists with an emphasis on the educational principles	14/04/2023	5

Teaching Staff focus groups	Four focus groups with teaching staff from Phase 1 and Phase 2 with an emphasis on educational principles.	30/06/2022 30/06/2022 04/07/2022 06/07/2022	16
Student focus groups	The focus group meeting was held to discuss the educational principles of CHARM-EU. The student representatives shared their experiences and opinions on the learning approach at CHARM-EU.	11/04/2023	2
Stakeholder survey	Survey with stakeholders involved in CHARM-EU	31/10/2022	9
Module descriptors/Module design templates	Analysis of module descriptors and module design templates in terms of the presence and absence of educational principles	14/03/2023	N/R
Educational principles documentation	<ul style="list-style-type: none"> <li>• Analysis of the following documents in terms of clarity and consistency. Pedagogical Guidelines</li> <li>• Educational Principles</li> <li>• Teaching and Learning Handbook</li> <li>• Practical tips for KCTs</li> <li>• Educational Principles Infographic</li> </ul>	16/03/2023	N/R
Analysis of Professional Development activities	Analysis of the Professional Development Evaluation report in terms of activities held related to the educational principles.	20/04/2023	N/R

### 3.3.1. QUALITATIVE AND QUANTITATIVE RESULTS

The following sections provide a narrative of each individual data source.

#### 3.3.1.1. STUDENT PHASE REVIEW SURVEY RESULTS

At the end of each phase of the Master’s, students were provided with a survey for their feedback on the phase. This data source used eight phase review surveys (P1, P2, P3 2021-2023, P1, P2, P3 2022-2024, P1 and P2 2023-2025) from a total of 417 student responses.

One question specifically related to the educational principles where students were asked to select educational principles addressed the most and the least in this phase; “Select three CHARM-EU educational principles that you feel were addressed the most, and the least in CHARM-EU teaching during this phase. Drag and drop these principles from the left hand side, to the two boxes on the right hand side”. **Table 14** describes a summary of these results.

**Table 14** Summary of most and least addressed educational principles from a student perspective in each phase

Phase	Most 1	Most 2	Most 3	Least 1	Least 2	Least 3
Phase 1 C1	Challenge driven	Student centered	Transdisciplinarity	Transnational and intercultural learning	Transversal skills	Technology enhanced
Phase 2 C1	Challenge driven	Student centered	Research-led research based	Technology enhanced	Inclusivity	Transnational and intercultural learning
Phase 3 C1	Challenge driven	Transdisciplinarity	Research-led research based	Technology enhanced	Situated learning	Transversal skills / Sustainability
Phase 1 C2	Challenge driven	Transdisciplinarity	Research-led research based	Sustainability	Inclusivity	Situated learning / Transnational and intercultural learning
Phase 2 C2	Challenge driven	Student centered	Research-led research based	Inclusivity	Technology enhanced	Research-led research based
Phase 3 C2	Challenge driven	Transdisciplinarity	Research-led research based	Inclusivity	Situated learning	Technology enhanced
Phase 1 C3	Transdisciplinarity	Challenge driven	Research-led research based	Technology enhanced	Transnational and intercultural learning	Situated learning / Transversal Skills
Phase 2 C3	Challenge driven	Transdisciplinarity	Sustainability	Technology enhanced	Inclusivity	Situated learning

- Across all cohorts and phases, **challenge driven** has emerged as the most addressed educational principle from a student perspective.
- **Transdisciplinarity, Research-led research based, and student centered** also are rated highly as most addressed.

- **Technology enhanced, inclusivity, and transnational and intercultural learning** were least addressed.

This data suggests similar perceptions across three cohorts of students towards educational principles within each of the phases.

### 3.3.1.2. STUDENT FOCUS GROUPS

A student focus group meeting was held on the 11/04/2023 to discuss the educational principles of CHARM-EU and expand on the results from the phase review surveys. Two student representatives shared their experiences and opinions on the learning approach at CHARM-EU. The following key themes emerged from the focus group.

#### **Positive differences with the CHARM-EU educational experience and their previous educational experiences**

- **Transdisciplinarity:** The students appreciated the opportunity to work with peers and stakeholders from different disciplines, providing diverse perspectives and valuable learning opportunities.
- **Inclusivity:** The inclusive approach at CHARM-EU was appreciated by the students
- **Group work:** The students found the extensive group work at CHARM-EU to be a valuable learning experience, allowing them to collaborate and learn from their peers in a transdisciplinary way.
- **Stakeholder involvement:** The involvement of stakeholders in the learning process was appreciated, as it provided a more comprehensive understanding of the subject matter.
- **Realistic and up-to-date program:** The program was commended for being linked to the complexity of current sustainability-related phenomena, making the learning experience more relevant and meaningful.
- **Grading system:** The students appreciated the feedback provided in the grading system, as it helped them to understand why they received a particular grade and how to progress, rather than just receiving a note without any explanation.
- **Consideration of multidisciplinary background** of students: All backgrounds of students were considered important.

#### **Negative differences with the CHARM-EU educational experience and their previous educational experiences**

- **Lack of clarity of some modules' description:** Students felt that the description of modules and learning program should be clearer and more structured from the beginning, which could help them to better understand the expectations and requirements of the program.
- **Assessment clarification:** Understanding the rationale behind the assessment was challenging at the start of the programme, but over time this was made clearer.
- **Group work:** While the students appreciated the extensive group work, they found it challenging at the beginning of the program as they were used to more individual assessments during their bachelor's program.
- **Mentor support** could be helpful, as it would provide students with more individualized guidance and support to clarify their individual development.

- **Grading system:** Some students still found the grading system frustrating.

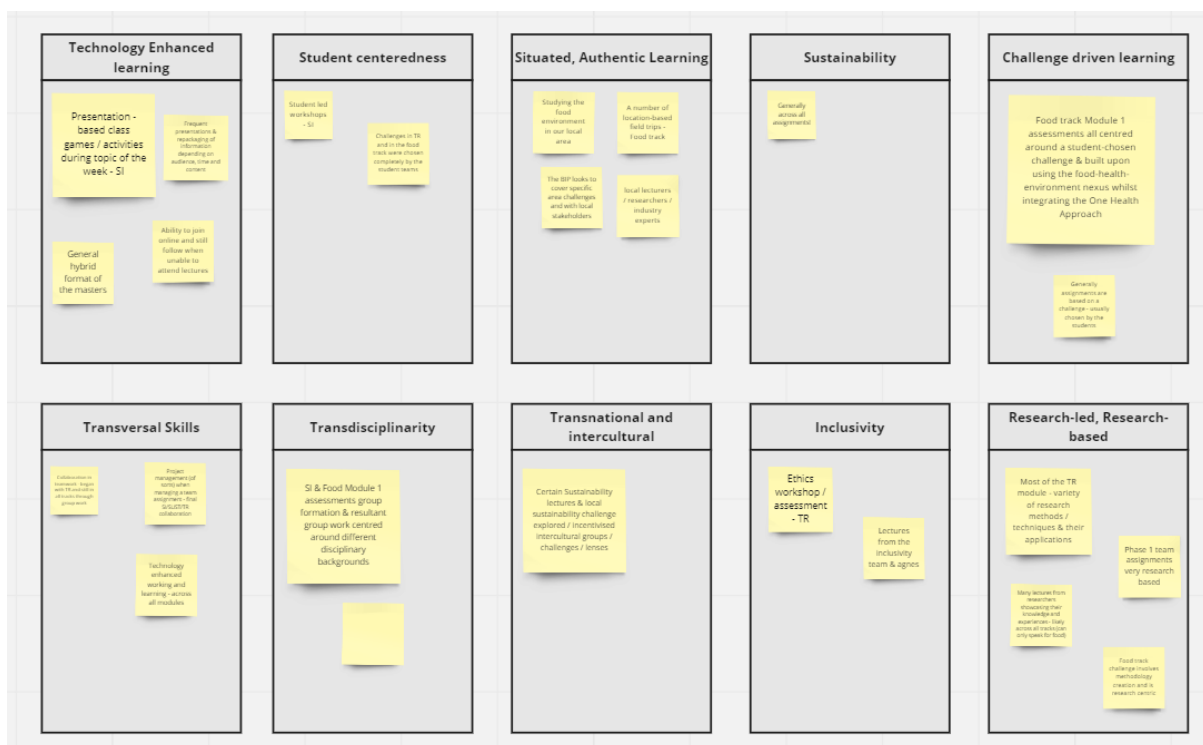
### Awareness of the educational principles

There was a vague awareness of the educational principles at the start of the focus group.

### Miro Board exercise

The students were asked to reflect on each educational principle using a Miro Board and allocate activities that they have experienced to each principle. The rationale for this exercise was to ascertain if there were any principles that they had not experienced, and to fully reflect on each principle. When student representatives were asked about the educational principles, they couldn't remember them off the top of their heads. However, once the list was provided, the principals slowly started to come back to their minds, and they were able to give examples related to each of them.

Based on this reflection exercise, the students were able to allocate an activity to each educational principle. This demonstrates that the students had an understanding of how educational principles are integrated into teaching experiences, to some extent. **Figure 6** describes these results.



**Figure 6** Miro Board at Student Focus Group

Following this activity, the most integrated and least integrated principles were discussed.

### Most integrated educational principles

- **Technology Enhanced learning** because of the hybrid classroom setting and the relevant teaching program
- **Challenge-driven learning** linked to most of assessment and learning activities

- **Transdisciplinarity** as all modules are created from different disciplinary perspectives, and this is integrated into all learning activities and assessments.

#### Educational principles requiring improvement

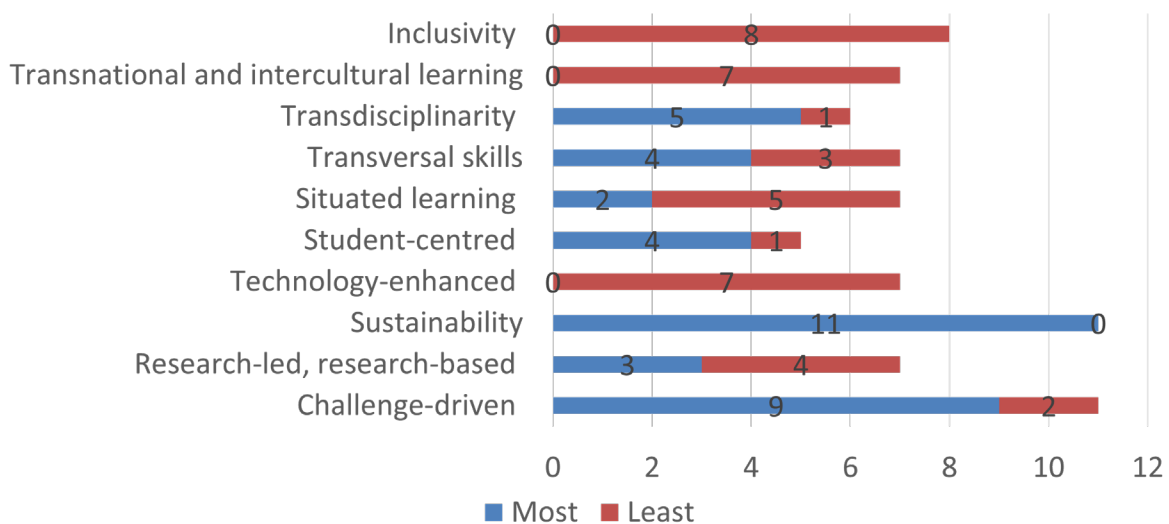
- **Transnational and intercultural learning**, more outside European topics, stakeholders, lectures. Students appreciated the session of Module 1 of Food track about: what’s food looks like in your culture.
- **Transversal skills** should be clarified and given more context

#### Suggestions for integration and new principles

- Peer to peer learning should be included into **Student Centered**.
- Enhance the **contemporary**, more up-to-date topics
- More content about **Peer-based learning**, so students know better how they can learn from their peers during the group work

### 3.3.1.3. CAPSTONE SUPERVISOR AND SECOND READER SURVEY

In February 2023, Capstone Supervisors and Second Readers were invited to participate in a short survey about their experiences of the Capstone phase. Within this survey, one specific question related to the educational principles was included “Select three CHARM-EU educational principles that you feel were addressed the most by students and their projects, and the least”. A total of 18 responses were retrieved (see **Figure 7**).



**Figure 7** Educational principles addressed the least and the most by students and their projects

- **Sustainability** has emerged as the most addressed educational principle from a supervisor perspective
- **Challenge driven** was also rated highly as most addressed
- **Inclusivity, Technology Enhanced learning, and Transnational and intercultural learning** were all rated as least addressed.

#### 3.3.1.4. CAPSTONE SUPERVISOR AND SECOND READER FOCUS GROUP

Although the educational principles were not explicitly mentioned in this focus group, questions about teaching content within the Capstone phase were posed to Supervisors and Second Readers.

- Supervisors mentioned a lack of research knowledge from students in the Capstone phase. This suggests that **Research-led Research based** principle needs to be better addressed in previous phases.
- Supervisors noted that some of the workshops should be more academic. This aligns with the **Research-led Research-based** principle.
- Supervisors noted that students had different levels of knowledge on sustainability theory, which also impacted on their projects. This suggests that within the **Sustainability** principle, theoretical aspects could be covered more explicitly in previous phases.
- Supervisors suggested that students should be able to choose modules or sessions based on their research ability. This aligns with the **Student Centered** principle.

#### 3.3.1.5. TEACHING STAFF AND ADMINISTRATIVE STAFF SURVEY

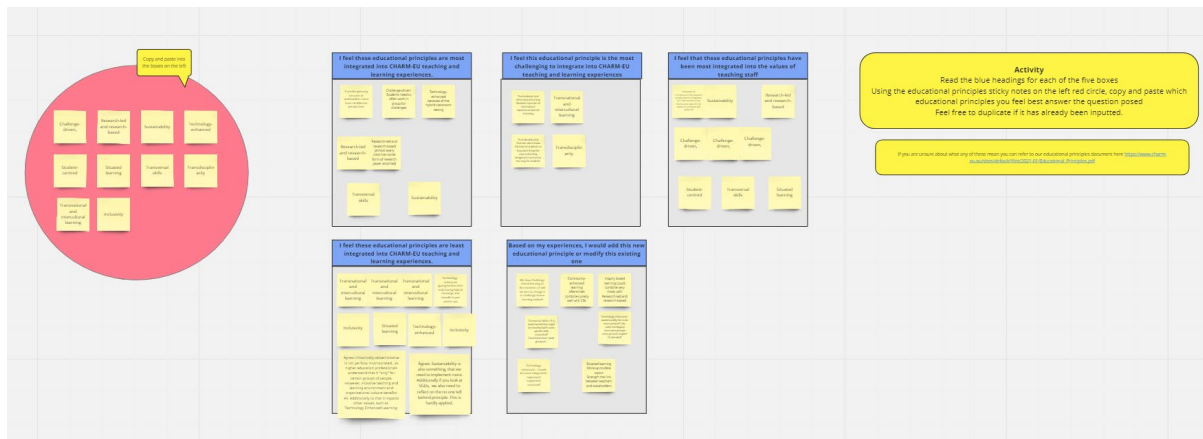
A survey was disseminated to Teaching and Administrative staff at the end of Phase 1 and Phase 3 of the Master's in February 2023. This survey asked respondents to reflect on these Phases generally and share challenges and best practices. The results from this survey were explored to ascertain if any of the educational principles were mentioned either implicitly or explicitly. The rationale for using this data was to explore perceptions of educational principles within teaching and learning practices during the Master's.

A total of 15 responses from a range of stakeholders including a Teaching Assistant, Members of the JVAO, an Educationalist, a Capstone local coordinator, Module Coordinators, PAC members and a Teaching staff member were recorded. The following section summarizes some key points related to specific educational principles.

- **Technology enhanced:** The standard of technology infrastructure and staffing levels differ between institutions. This could have an impact on this educational principle.
- **Transversal skills:** Large teams in the Capstone phase caused challenges for collaboration.
- **Research-led Research based:** Many students struggled with Academic Writing and Research skills in the Capstone phase.
- **Challenge driven:** The short time period for the Capstone phase was perceived as causing difficulties for students to get to grips with a challenge. However, others commented that the challenge based project were impressive.
- **Student-centered:** Some respondents commented that student-led activities in these Phases were impressive.
- **Transnational and intercultural learning:** Module coordinators felt that students benefited from an intercultural environment in the Capstone phase.

### 3.3.1.6. EDUCATIONALISTS FOCUS GROUP

A focus group was held on the 13/04/2023 with five educationalists focusing on the educational principles. The focus group was guided by semi-structured questions which provide input into the perceptions and integration of the educational principles in their work as Educationalists. During the session, a Miro Board was used to gather perceptions towards five specific questions related to the educational principles. **Figure 8** summarizes the results of this Miro Board.



**Figure 8** Miro Board at Educationalists Focus Group

### Comparison between CHARM-EU teaching and their previous experiences

The Educationalists were asked to compare the teaching approaches in CHARM-EU to any previous teaching or learning experience they had. This provided an initial reflection on the educational principles in a broad manner.

- **Holistic approach to assessment:** Programmatic assessment in CHARM-EU is a different approach to traditional teaching.
- **Transdisciplinarity:** Transdisciplinarity is an aspect in higher education that CHARM-EU is trying to implement strongly that is not as common in other teaching experiences.
- **Multidisciplinary approach:** CHARM-EU's multi-institutional and multidisciplinary approach, mixing different cultures and backgrounds creates a mixed environment for students. This helps students understand that the world is a mixed place, and they need to learn how to join forces for global challenges.
- **Hybrid aspect:** The hybrid aspect of teaching is different from traditional courses.
- **Skills development:** CHARM-EU's teaching methodology emphasizes skills development, and students are taught to focus more on competencies than on knowledge. Students are expected to demonstrate their skills in practice.
- **Challenge-based Learning:** CHARM-EU's teaching methodology is based on challenge-based learning, where students are given real-world problems to solve.
- **Inclusive learning environment:** CHARM-EU's multidisciplinary approach and mixed environment create an inclusive learning environment that accommodates diverse cultures and backgrounds.

### Perceived value of the educational principles

The Educationalists were asked whether they felt the educational principles were valuable, and why. All Educationalists agreed that the educational principles were valuable, and the following key themes were generated:

- Educational principles are valuable for Educationalists to help teaching staff understand and bring meaning to what they were doing and why.
- Long-term value of CHARM-EU principles for personal and professional growth for both staff and students
- CHARM-EU principles create an identity for the program
- CHARM-EU principles are valuable as a philosophy and ethos for CHARM-EU education
- Valuable for staff to understand how to design CHARM-EU courses
- Valuable for CHARM-EU students to gain functional skills that are applicable in real-world environments.
- Value of CHARM-EU principles for scaffolding teaching and learning activities
- The ensemble of principles provides a meaning behind what CHARM-EU is

### Teaching staff perceptions of the educational principles

The Educationalists were asked to reflect on their experiences of working with Teaching Staff on the educational principles, and the Teaching Staff perceptions of them. The following themes were generated.

- **Challenges with inclusivity integration:** Some teaching staff could find integrating inclusivity challenging because they do not understand its potential, or because it does not align with their existing practices or mindset.
- **Misunderstanding of transdisciplinarity:** Teaching staff often found challenges with the understanding of transdisciplinarity and confused it with interdisciplinarity.
- **Clarification of transdisciplinarity:** Clarifying what transdisciplinarity was to teaching staff takes time and effort.
- **Capacity of integrating all educational principles:** The efforts of designing a CHARM-EU module required high workload from teaching staff and was at times overwhelming. Having 10 educational principles was challenging to integrate and understand in the short time period of designing modules.

### Reducing, merging or refining educational principles

The Educationalists were asked whether they would reduce or refine the educational principles, both in the focus group and on the Miro Board. The following results were generated:

- Across the Educationalists, **merging or reducing the educational principles was not advised.**
- It was considered that merging or reducing any principles could **reduce the importance of certain principles, and their visibility.** By having **explicit principles makes it easier for new ideas** related to individual principles to be generated.
- It was deemed helpful to have a **'palette' of educational principles** to work with
- However, some suggestions for renaming educational principles were presented (see table)

- Renaming Research Led-Research Research-Based to Inquiry Based Learning.
- Being more explicit as to what Transversal skills encompass (i.e. what are these skills).
- Some educational principles are **recognized as overlapping** but that was deemed acceptable.
- Analyzing the overlapping or **complementary nature** of the educational principles could be a useful task. Instead of merging educational principles, investigating how they overlap or are complementary to one another could be useful.
  - Currently Transdisciplinarity is at the center of the educational principles infographic. Could this be used as the guiding educational principle where the others all align into perhaps?
- **Creating a hierarchy of educational principles:** The educational principles could be put in a hierarchical structure which has high level principles that need to be known, and other principles that are not as relevant and do not require as much emphasis.

**General perceptions of educational principles**

- **Transdisciplinarity** is by far the hardest educational principle to support and understand deeply.
- Educationalist’s personal **biases:** Some educationalists had more experience or knowledge of particular educational principles, and may have been more likely to push this on teaching staff.
- Usefulness of practical **tips**
- **Transnational and intercultural learning** could have been better integrated
- **Technology enhanced learning** is challenging and the level of experience of students and staff should be noted before working with them.

**Table 15** Summary of responses from Miro Board

Question Posed	Results
I feel these educational principles are most integrated into CHARM-EU teaching and learning experiences.	Transdisciplinarity Challenge-driven Technology-enhanced Research-led and research-based Transversal skills Sustainability
I feel this educational principle is the most challenging to integrate into	Transdisciplinarity Transnational and intercultural learning

CHARM-EU teaching and learning experiences	
I feel that these educational principles have been most integrated into the values of teaching staff	<p>Challenge-driven</p> <p>Student-centred</p> <p>Transversal skills</p> <p>Situated learning</p> <p>Sustainability</p> <p>Research-led and research-based</p>
I feel these educational principles are least integrated into CHARM-EU teaching and learning experiences.	<p>Transnational and intercultural learning</p> <p>Technology-enhanced</p> <p>Inclusivity</p> <p>Situated learning</p> <p>Sustainability</p>
Based on my experiences, I would add this new educational principle or modify this existing one	<p>We have Challenge driven learning at the moment :) It will be nice to change it to challenge based learning indeed!</p> <p>Community-enhanced learning oftentimes combines pretty well with CBL</p> <p>Inquiry based learning could combine very nicely with Research-led and research-based</p> <p>Transversal skills It is implemented but might be clarified with some specific skills associated? Communication / Group work, etc.</p> <p>Technology-enhanced, I would modify this to be more present? Like, make the flipped classroom principle more present maybe? Or blended?</p> <p>Technology-enhanced: should be more integrated / explained / supported, renamed?</p> <p>Situated learning More up-to-date topics Strength the link between teachers and stakeholders</p>

### 3.3.1.7. TEACHING STAFF FOCUS GROUPS

Four focus groups with teaching staff were held in 2022 specifically related to the educational principles. During the staff focus groups, feedback on specific educational principles was sought in terms of how well they were integrated into teaching, and any challenges they faced.

Teachers felt that **Challenge Driven Learning** was well represented throughout the modules, both longitudinally and within individual lectures. Implementation of this educational principle was noted as easy.

**Student Centered Learning** was perceived as very well represented with teachers noting how seriously it was taken, how much knowledge of student issues they had, how students could choose their own challenges, and how they responded to student feedback during module implementation. However, some felt that the balance between students and teachers was one-sided, and students would come to teachers with minor issues expecting quick resolutions. One teacher noted that they were “terrified to correct them” in case they were accused of not being understanding.

Most teachers felt that **Sustainability** was integrated well into the modules, however some teachers struggled with being more explicit about Sustainability within their modules, how it could be linked with teaching concepts (i.e. ecology and sustainability), and felt it was difficult to assess. “I struggle with the concept of sustainability in Life and Health because I couldn't see it explicitly enough.”

The **Transnational and Intercultural** principle was integrated relatively well into the modules in terms of teaching staff and stakeholder diversity, student reflections, and module content. Most of the teaching staff thought that the fact that the student cohort came from a variety of national/cultural backgrounds implicitly ensured the representation of this principle. However, some found assessing students on this principle challenging as some teams worked on a more intercultural topic than others, and an unclear understanding of its definition in assessment rubrics. Others felt teaching could have been broader to include the Global South, more intercultural module readings, or going into much deeper depth into the meaning behind different worldviews and understanding realities. “(...) implementing it is not the biggest issue because health itself is intercultural. We were looking (...) domestic violence, sexual violence in Rwanda, so that in itself we were implementing the learning there, but it was the measuring that was difficult.”

**Transversal skills** were often seen as implicit within the module teaching through groupwork and communication activities, and presentations, and were well designed into the curriculum. However, some felt that students lacked awareness that they were building these skills through these activities, and knowledge about transversal skill development could have been more explicit and communicated.

Although **Situated and Authentic learning** was present in many modules through external stakeholders, this was not uniform across all modules. In Phase 1, teachers struggled to find stakeholders as there was a lack of infrastructure to support this, but this has improved in Phase 2 and 3. Some teachers noted that there was variance in student embeddedness within a community of practice, with some students having a very positive engaged experience, and others struggling to find

a stakeholder community. Stakeholder background was also mentioned; more diversity of stakeholder topics could have improved the teaching in some modules.

**Transdisciplinarity** was noted as a challenging educational principle to integrate and assess, and teaching staff noted the difficulties even for senior researchers to do transdisciplinary research. Teachers felt that they themselves did not fully understand the concept, and many reported that teaching staff confused interdisciplinarity with transdisciplinarity. Integrating it into teaching was sometimes difficult, as it was not suitable for every activity that was developed (e.g. transdisciplinarity in a presentation), and teaching was found to be more multidisciplinary rather than transdisciplinary.

Transdisciplinarity also takes time to emerge, and some felt that the time to do this was not sufficient in the Master's. Finding a balanced cohort of teaching staff across multiple disciplines was absent in some modules, which also hindered transdisciplinarity. "I think a lot of people in academia might use the term, but they mean interdisciplinarity, which it has subtle differences, and I think maybe clarifying what we mean in CHARM, as transdisciplinary, maybe we could do some more work with making sure that that that definition is shared across the teaching staff."

**Research led – research based** principles were also reported as challenging to teach and integrate. Teachers felt that students had different levels of methodological and research training, due to their disciplinary background, which caused difficulties in learning activity participation, vocabulary, and understanding. Some students found this principle too easy, and others, too difficult and overwhelming. Teachers also felt that they did not know enough about student research background to design content applicable to them. Lack of a CHARM-EU ethics process hindered research activity in some modules. "For some students who had a research background, it was too easy, for those who didn't it was too hard, and finding the right balance and because you're sort of trying to look at the diversity as well of methods and methodologies and trying to so. It's trying to cover a lot of perspectives and approaches, and if students don't have a background in that can be quite overwhelming, or if they already know some of the stuff, then they can sort of switch off saying already know this. So it's trying to keep them engaged at the right sort of level is the challenge there."

**Technology enhanced learning** was heavily discussed by the teaching staff, both in terms of usability issues, and module integration issues. Some felt that local activities in the hybrid classrooms should be prioritized as it would enhance the teaching experience from being more of an online experience to a technology enhanced experience. Many mentioned technical difficulties with the hybrid classroom technology (e.g. Teams organization, audio issues) which impacted on the learning experience. Greater use of emerging technologies was mentioned as being a need for future iterations of the Master's, and the use of more practical technologies such as SPSS. In addition, some felt that more focus should have been on the content rather than the technology aspect during the design phase. Finally, teachers mentioned that students should be given more support on the meaning behind using certain technologies (i.e. video).

#### **Problematic Educational Principles:**

- Research-led, Research-based learning (2): Students have different backgrounds in terms of what they know about conducting research, which is difficult to manage for teachers

- Sustainability: Assessing it is problematic, it should be addressed in a more complex manner than done in CHARM
- Technology Enhanced learning (4): Many problems were listed with both the hardware and software. Some teachers argued that in some cases less technology would be needed (some things should be done locally as students are sitting in the classrooms together which should be made use of)
- Situated, Authentic Learning (difficulty of finding suitable stakeholders)
- Transversal Skills (assessing it is problematic)
- Transdisciplinarity (4): this is a difficult concept for both students and teachers, some teachers admitted being unsure about this, even putting together a module on it was difficult...
- Transnational and intercultural learning (2): Although it is addressed explicitly in Phase 1, it is mainly implicit.

### 3.3.1.8. STAKEHOLDER SURVEY

A survey was shared with CHARM-EU stakeholders in October 2022 to ask for their perceptions on their experiences with CHARM-EU. Two questions were posed that could provide information on educational principles from the perspective of stakeholders

- What competencies do CHARM-EU students have that you would seek in an employee?

In this question, some stakeholders mentioned competencies that they would seek in an employee that were aligned with certain educational principles. These included **transversal skills** (networking, engagement, working in a team, communication), **sustainability**, and **research-led research based**, and **challenge-driven**.

- What competencies are CHARM-EU students could further develop, that you would seek in an employee?

In this question, stakeholders mentioned competencies that students should further develop. These included **situated learning** (more immersion in the professional world) and **transdisciplinarity** (thinking outside the box).

### 3.3.2. EDUCATIONAL PRINCIPLES DOCUMENTATION ANALYSIS

A full review of the existing educational principles documentation was conducted by a new partner of CHARM-EU (HRW). This review relates to the 3.1 Review and Update of Educational Principles task:

#### **Educational Principles Activity and Impact:**

- Explore the **integration** of the educational principles in CHARM-EU **documentation**.

This review recommends a full update on these documents to ensure clarity and consistency of the educational principles. Detailed changes are indicated in Appendix B.

### 3.3.2.1. ANALYSIS OF MODULE DESCRIPTORS

This analysis reports on a review of the CHARM-EU Educational Principles in the Master's in Global Challenges for Sustainability module design templates. The focus on this review is to:

- Explore the presence or absence of educational principles within the session module design (i.e. presence or absence of educational principles within each session of each module)
- Explore the presence or absence of educational principles with the Programme Learning Objectives (PLOs) and Module Learning Objectives (MLOs) of each module.

This analysis relates to the 3.1 Review and Update of Educational Principles task: **Educational Principles Activity and Impact**

- Review the perception, integration, and impact of educational principles based on existing data and documentary evidence, and input from all stakeholders.
  - Explore the **integration** of the educational principles in CHARM-EU **teaching experiences**.

It is important to note, that Educational Principles are not only directly built into the module design but can appear in many different forms, such as content, assessment type, delivery modality, activity type, and classroom format etc. This analysis focuses on documentary evidence provided in module design templates, and is limited by the data provided.

### 3.3.2.2. TASK AIM

This report relates to the 3.1 Review and Update of Educational Principles task: **Educational Principles Activity and Impact**

- Review the perception, integration, and impact of educational principles based on existing data and documentary evidence, and input from all stakeholders.
  - Explore the **integration** of the educational principles in CHARM-EU **teaching experiences**.

By reviewing the content of module design templates, certain knowledge of the integration of educational principles can be ascertained in the Master's. This will provide information as to educational principles more and least commonly integrated in the Master's.

### 3.3.2.3. MODULE DESIGN TEMPLATES DESCRIPTION

As part of the module design process, a template was provided for all Module Coordinators, and KCT members involved in the design of each module in the Master's. An example of this is available [here](#).

Within these templates, module coordinators and KCT members inputted information related to educational principles, PLOs, MLOs, and other key pieces of information related to their module.

### 3.3.2.4. MODULE DESIGN TEMPLATES ANALYSIS METHODOLOGY

To explore the educational principles in the module design of the Master’s programme, two separate analyses were conducted

- Analysis of educational principles within each module weekly session at a phase level.
- Analysis of educational principles within PLOs and subsequently MLOs in each module.

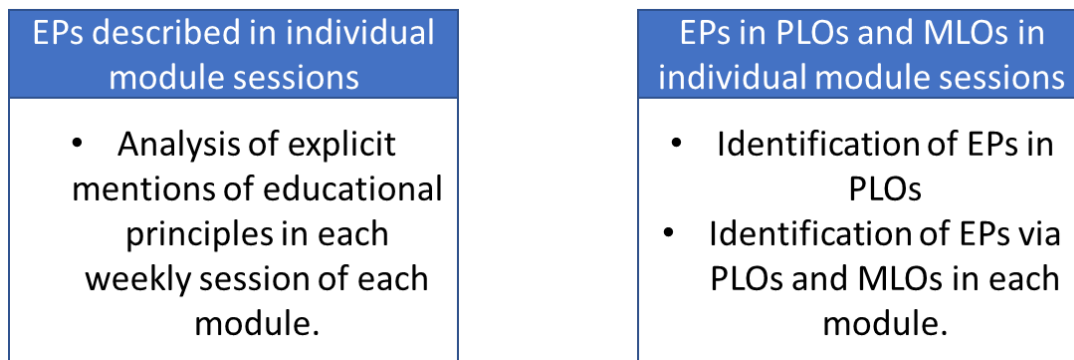


Figure 9 Methodological approach

### 3.3.2.5. EDUCATIONAL PRINCIPLES INTEGRATION IN INDIVIDUAL MODULE WEEKLY SESSIONS

Within the module design template, participants involved in designing the module were asked to **apply** educational principles with each weekly session of their modules and phases.

In some phases, the data was not available (e.g. Capstone), or not all sessions had an educational principle assigned to them. It is also important to highlight that this was part of a much larger process integrating PLOs and Assessment Criteria, and the emphasis may not have been on the educational principles. However, it does give a broad indication of the application and integration of the educational principles within the design of the Master’s from the perspective of module designers.

An analysis of the quantity of educational principles ascribed to each weekly session by module designers across all phases was conducted.

PHASE2 WATER	W1 - D1	W1 - D2	W1 - D3	W1 - D4	W1 - D5	W1-D6
	14/02/2022	15/02/2022	16/02/2022	17/02/2022	18/02/2022	2/19/2022
<b>WEEK OVERVIEW</b>						
<b>Theme</b> <i>or content areas or challenge, short</i>	Getting to know the team, introductory week, ice-breaker, personal interviews, World Café, reading book, watching movie, W4F Hackathon					
<b>Educational Principles</b> <i>highlight, choose from the dropdown</i>	TIL	SC	I	R	SAL	CD

Figure 10 Example from module design template of educational principles integration into weekly session

### 3.3.2.6. RESULTS OF EDUCATIONAL PRINCIPLES APPLICATION IN WEEKLY SESSION PHASE DESIGN

Table 1 describes the quantity of educational principles applied in each phase as described by participants involved in the module design.

**Table 16** Description of educational principles within Master’s phases based on module design template

	<b>P1</b>	<b>P2: Food</b>	<b>P2: Life and Health</b>	<b>P2: Water</b>	<b>Total (not including Capstone)</b>
Sustainability (SDG)	7	5	0	14	26
Situated, Authentic Learning (SAL)	4	4	6	8	22
Transdisciplinarity (TD)	3	6	2	8	19
Student-centred (SC)	1	8	0	9	18
Transversal Skills (TS)	1	6	2	9	18
Transnational and intercultural learning (TIL)	3	0	0	11	14
Challenge-Driven (CD)	1	1	3	5	10
Research-led, Research-based (R)	2	0	0	7	9
Technology-enhanced (TE)	1	0	0	7	8
Inclusive (I)	1	0	0	4	5

Results from this analysis suggest:

- Across all P1 and P2 modules, Sustainability, Situated, Authentic Learning, and Transdisciplinarity were most applied into the module design.
- Across all P1 and P2 modules, Research-led, Research-based, Technology Enhanced and Inclusivity were least commonly applied into module design.
- In P1, Sustainability, Situated, Authentic Learning, and Transdisciplinarity were most commonly applied into module design. Challenge-driven, Technology Enhanced, Student Centered, Transversal Skills and Inclusive were least applied.
- In P2 Food, Student Centered, Transdisciplinarity, and Transversal skills were most commonly applied. Research-led research based, Technology Enhanced, and Inclusive were least commonly applied.
- In P2 Life and Health Situated, Authentic Learning, Challenge-driven and Transdisciplinarity were most commonly applied. Research-led research based, Technology Enhanced, Sustainability, Student-centered, transnational and intercultural learning, and Inclusive were least commonly applied.

- In P2 Water, Sustainability, Transnational and intercultural learning and Transversal Skills were most commonly applied. Technology-enhanced, Research-led Research based, Challenge-Driven, and Inclusive were least commonly applied.

### 3.3.2.7. EDUCATIONAL PRINCIPLES INTEGRATION IN PLOs AND MLOs

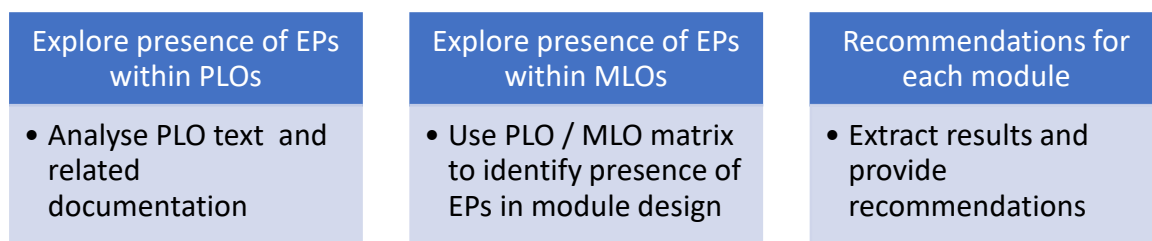
Within the module design template, each session was also aligned with specific PLOs and MLOs.

- The PLOs describe the profile of a CHARM EU graduate. At the end of the Master’s programme the student has to meet these outcomes. The PLOs are the backbone of the Master’s and are a key aspect for module design, delivery and assessment. They have been developed with the educational principles as a scaffold.

Within each module, MLOs are also described. These MLOs are aligned to PLOs.

- The objective of this analysis is to ascertain which educational principles are most and least present within each module of the Master’s using PLOs and MLOs.
- This will inform WP3 on educational principles that may need more emphasis in certain modules of the Master’s.
- By identifying educational principles in PLOs and then MLOs, a better understanding of their integration will be facilitated.

To achieve this, presence of the educational principles within the PLOs will be explored. Then the presence of the educational principles will be explored within the MLOs that are aligned with the PLOs.



**Figure 11** Description of the analytic process

### 3.3.2.8. EXPLORATION OF EDUCATIONAL PRINCIPLES WITHIN PLO TEXT

All PLOs were extracted and read, and implicit and explicit mentions of all educational principles were extracted.

**Table 17** Presence of Educational Principles with PLOs

PLO	Educational Principle
PLO1. Critically analyse and evaluate the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors. Reflect upon these to understand the relevant ethical issues and the role of active citizenship, in particular within a European context.	Sustainability (SDG) Research-led, Research-based (R) Transnational and intercultural learning Transdisciplinarity Inclusivity
PLO2. In collaboration with extra-academic actors, investigate and evaluate complex societal challenges from a variety of stakeholder, gender and intercultural perspectives to creatively identify, select and devise robust, adaptable, ethical solutions using a range of methodologies, theoretical frameworks and data analysis tools.	Transdisciplinarity (TD) Situating, Authentic Learning (SAL) Transnational and intercultural learning (TIL) Research-led, Research-based <sup>®</sup> Student-centred (SC) Challenge-Driven (CD) Inclusivity
PLO3. Rigorously assess and integrate different disciplinary and transdisciplinary knowledge and research methodologies to connect research questions, data and findings to their challenges.	Research-led, Research-based Transdisciplinarity (TD)
PLO4. Demonstrate expertise in the identification and application of the latest technological tools to source, analyse, handle, use and communicate complex bodies of data ethically.	Technology-enhanced (TE) Research-led, Research-based <sup>®</sup> Inclusivity
PLO5. Formulate an advanced understanding of transdisciplinarity and demonstrate expertise in the facilitative, communicative, reflexive and collaborative skills to support its practice.	Student-centred (SC) Transdisciplinarity (TD) Transversal Skills (TS) Situating, Authentic Learning (SAL) Challenge-Driven (CD) Inclusivity
PLO6. Communicate effectively on complex issues that aim for behavioural change, interpreting and connecting complex challenges to diverse stakeholder, disciplinary and intercultural perspectives that encompass global and European citizenship.	Challenge-Driven (CD) Transnational and intercultural learning (TIL) Transversal Skills (TS) Transdisciplinarity (TD)
PLO7. Acquire advanced competency within a range of transversal skills such as communication, teamwork, problem solving, creative thinking, innovation, entrepreneurship, digital skills and a lifelong learning disposition.	Transversal Skills (TS) Technology-enhanced (TE) Situating, Authentic Learning (SAL) Student-centred (SC)

- Within the text of the PLOs, all educational principles are explicitly and implicitly mentioned.

### 3.3.2.9. EXPLORATION OF EDUCATIONAL PRINCIPLES WITHIN MODULES USING MLOs

A matrix which aligns all PLOs to MLOs was explored using the analysis from **Table 18** (see Appendix C). This allowed for identification of educational principles within each MLO for each module.

**Table 18** Modules not mapping to explicit PLOs

PLO	Aligned Educational Principles	Module Not Mapped
PLO3	Research-led, Research-based Transdisciplinarity (TD)	Social Innovation
PLO4	Technology-enhanced (TE) Research-led, Research-based	Social Innovation Healthy Lives And Wellbeing Socially Just And Sustainable Food Systems Health Systems And Policies
PLO6	Challenge-Driven (CD) Transnational and intercultural learning (TIL) Transversal Skills (TS) Transdisciplinarity (TD)	Transdisciplinary Research Food Health Environment Nexus Food Systems And Their Transformations
PLO 7	Transversal Skills (TS) Technology-enhanced (TE) Situated, Authentic Learning (SAL) Student-centred (SC)	Food Health Environment Nexus Health Systems And Policies

- Across all modules, there was good integration with almost all of the PLOs, and thus, the educational principles. However, in certain modules, PLOs were not explicitly mapped to MLOs.
  - This is not an unexpected finding as coverage of the PLOs needs to be across the whole programme not just individual modules. In addition, some modules focus on certain PLOs more than others. However, it does provide some indication of PLOs, and thus, certain Educational Principles that were addressed to a lesser extent in some modules or phases.
- In two of the Life and Health modules “Healthy Lives and Wellbeing” and “Health Systems And Policies” there was no alignment with PLO4 (related to technological tools). PLO 7 (containing digital skills) was also not aligned with any module in this Phase.
- Social Innovation was not aligned with PLO 3 and 4, and these PLOs contained information related to Research-Led Research Based.
  - To improve this educational principle in Social Innovation, it is recommended that more explicit teachings using Research-led Research-based resources or methodologies should be included.

### 3.3.2.10. ADDITIONAL INCLUSIVITY ANALYSIS IN MLOs

An additional analysis of inclusivity with the MLOs was conducted to ascertain whether this educational principle was built into specific modules via specific MLOs. Only one MLO contained text related to inclusivity within the module “Extremes in the Water Cycle and Their Complex Consequences”

- MLO 4.9: Develop a critical capacity that allows for a consideration of inclusivity and equality during every step of identifying, analysing and proposing a solution for extreme water challenges (specifically focused on marginalized communities, gender roles, sexual orientation, ethnicity, religion, income, education, among others).

However, inclusivity was often built in at a practical level using various templates created by the inclusivity WP. As such, this current analysis may not show the depth of how inclusivity was addressed in the Master's as a whole.

### 3.3.2.11. KEY FINDINGS AND RECOMMENDATIONS

The following key findings and recommendations relate to the analysis of the module design templates. These findings and recommendations should be considered from the perspective of the static data sources, rather than from how they were actioned in practice but could be useful for future integration of educational principles in module design.

- **Improve integration of certain educational principles in specific phases**
  - Research-led, Research-based, Technology Enhanced and Inclusive in P1 and P2 modules
  - Challenge-driven, Technology Enhanced, and Inclusive in P1.
  - Research-led research based, Technology Enhanced, and Inclusive in P2 Food.
  - Research-led research based, Technology Enhanced and Inclusive in P2 Life and Health. In particular Technology Enhanced should be addressed.
  - Technology-enhanced, Challenge-Driven, and Inclusive in P2 Water
  - Module coordinators should consider including teaching experiences related to these educational principles in future module design.
- **Identify explicit and implicit educational principles:** Technology enhanced learning is one of the least commonly documented as integrated into the weekly sessions. In contrast, technology enhanced learning is fully integrated into all aspects of the programme as most of the learning is done via a flexible format.
  - A recommendation could be to separate the educational principles into implicit and explicit principles. Implicit being those that are already designed into the entire structure, vision, and organization of the programme, regardless of the content being taught (e.g. technology enhanced). Explicit are those which are explicitly integrated into module content.
  - Teaching staff would be asked to focus more on explicit educational principles in their weekly session design, and consider the implicit educational principles at an overall module level (i.e. delivery methods).
- **Consider including Inclusivity into the PLO text:** Inclusivity was not explicitly built into the PLOs text and potentially because of this, module designers could be less focused on including aspects of this into their weekly sessions.

- **Consider including inclusivity into MLO text:** Only one module specifically addresses inclusivity in the text of their MLOs. Suggest that module designers specifically use this term when redeveloping their MLOs.
- **Improve integration of Research Led and Research Based in Social Innovation:** To improve this educational principle in Social Innovation, it is recommended that more explicit teachings using Research-led Research-based resources or methodologies should be included.

### 3.3.3. ANALYSIS OF PROFESSIONAL DEVELOPMENT ACTIVITIES

The Professional Development (PD) activities and initiatives were organised between January 2020 and December 2022 on 34 occasions. The evaluation of the activities were summarised in the Professional Development report. The report addressed two evaluation questions:

- What were the perceptions of CHARM-EU staff on PD activities they participated in or contributed to?
- What are potential implications on future PD activities and initiatives in CHARM-EU from these perceptions?

Professional Development activities were measured by two methods:

- Online surveys (KCT PD participation, Hacakthon surveys, e-learning evaluation, VLE user survey, )
- Qualitative thematic analyses (educationalist evaluations, WP4 brainstorm session, roadmap feedback, WP7 pilot evaluations, reflections of PD activity leaders)

#### 3.3.3.1. EDUCATIONAL PRINCIPLES IN PD ACTIVITIES

- Teachers felt that **Challenge Driven Learning** was well represented throughout the modules, both longitudinally and within individual lectures. Implementation of this educational principle was noted as easy.
- **Student Centered Learning** was perceived as very well represented with teachers. However, some felt that the balance between students and teachers was one-sided, and students would come to teachers with minor issues expecting quick resolutions.
- Most teachers felt that **Sustainability** was integrated well into the modules, however some teachers struggled with being more explicit about Sustainability within their modules, how it could be linked with teaching concepts (i.e. ecology and sustainability), and felt it was difficult to assess.
- The **Transnational and Intercultural** principle was integrated relatively well into the modules in terms of teaching staff and stakeholder diversity, student reflections, and module content.
- **Transversal skills** were often seen as implicit within the module teaching through groupwork and communication activities, and presentations, and were well designed into the curriculum. However, some felt that students lacked awareness that they were building

these skills through these activities, and knowledge about transversal skill development could have been more explicit and communicated.

- Although **Situated and Authentic learning** was present in many modules through external stakeholders, this was not uniform across all modules.
- **Transdisciplinarity** was noted as a challenging educational principle to integrate and assess, and teaching staff noted the difficulties even for senior researchers to do transdisciplinary research. Transdisciplinarity takes time to emerge, and some felt that the time to do this was not sufficient in the Master's. Finding a balanced cohort of teaching staff across multiple disciplines was absent in some modules, which also hindered transdisciplinarity.
- **Research led – research based** principles were also reported as challenging to teach and integrate. Teachers felt that students had different levels of methodological and research training, due to their disciplinary background, which caused difficulties in learning activity participation, vocabulary, and understanding. Lack of a CHARM-EU ethics process hindered research activity in some modules.
- **Technology enhanced learning** was heavily discussed by the teaching staff, both in terms of usability issues, and module integration issues. Some felt that local activities in the hybrid classrooms should be prioritized as it would enhance the teaching experience from being more of an online experience to a technology enhanced experience. Many mentioned technical difficulties with the hybrid classroom technology (e.g. Teams organization, audio issues) which impacted on the learning experience. Greater use of emerging technologies was mentioned as being a need for future iterations of the Master's, and the use of more practical technologies such as SPSS.
- **Inclusivity administration:** Some teachers noted challenges with communicating inclusivity processes with students and requested better internal communication about this process to teachers.

### 3.3.3.2. KEY FINDINGS AND RECOMMENDATIONS

Transdisciplinarity, Research-led, research based, and Technology Enhanced Learning were suggested as educational principles that need more focus in the future. Academic teachers seem to find these topics challenging to implement, mainly because they have limited knowledge about the concepts or have difficulty translating these into practice. It was highlighted that if the academic staff finds it problematic to define the educational principles well, their evaluations of those principles might also be problematic.

The need for additional areas of professional development (e.g. the methodology of hybrid instruction) has been mentioned as a possible future goal, especially as new academic staff join CHARM.

When looking at the variety of activities that were organised, the more interactive, personalised/small-group, hands-on activities and initiatives were perceived as most valuable. It was suggested that the educationalist offer more input to teaching staff on the educational principles and skills in their role, by for example offering a list of best practices.

Regarding further practical issues, there was a general agreement that organisational issues resulted in difficulties. These were: the lack of time, working under time pressure, lack of motivation of

participants, unclear communication and information flow, and technological issues. These should be addressed in the next professional development activities.

#### **3.3.4. SYNTHESIS OF FINDINGS AND DISCUSSION**

This analysis has provided a novel understanding of the CHARM-EU educational principles during its initial piloting in the Master's for Global Challenges for Sustainability. It has focused on:

- Exploring the **perceptions** of the educational principles from the perspective of CHARM-EU stakeholders (e.g. students, teaching and administrative staff, external stakeholders)
- Exploring the **integration** of the educational principles in CHARM-EU **teaching experiences**.
- Exploring the **integration** of the educational principles in CHARM-EU **teaching staff and student values**.

**Table 19** below provides an overall summary of this analysis from the perspective of each educational principle.

**Table 19** Summary of results from educational principles analyses

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
Challenge-driven	<ul style="list-style-type: none"> <li>• Across all phases, challenge driven has emerged as the most addressed educational principle from a student perspective based on questionnaire data.</li> <li>• Capstone supervisors rated this principle highly as one of those most addressed by the students in their projects.</li> <li>• Educationalists felt that this principle is one of the most integrated into CHARM-EU teaching and learning experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Students felt that this principle was linked to most of the assessment and learning activities, they were also able to give concrete examples of it.</li> <li>• Although some of the teaching and administrative staff felt that challenge-driven student projects were impressive, some expressed concerns that the shortness of time in the capstone phase made it difficult for students to come to grips with their challenges.</li> <li>• Educationalists felt that CHARM-EU's teaching methodology was based on challenge-based learning, where students are given real-world problems to solve, so it was perceived as a core principle</li> <li>• Teachers felt that Challenge Driven Learning was well represented throughout the modules, both longitudinally and within individual lectures. They also felt that the implementation of this educational principle was easy</li> </ul>	<ul style="list-style-type: none"> <li>• Since students perceived this as the most addressed educational experience linked to most of the assessment and learning activities, this principle is likely to be integrated into students' values</li> <li>• Educationalists felt that challenge-driven learning was one of the most integrated into the values of teaching staff.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
		<ul style="list-style-type: none"> <li>Challenge driven was mentioned as an attractive quality by stakeholders that CHARM students possess</li> <li>Improved integration would be needed into P1 (Transdisciplinary Research) and P2 (Food Health Environment Nexus and Food Systems and Their Transformation) modules</li> </ul>	
<p>Research-led and research-based</p>	<ul style="list-style-type: none"> <li>Participants had varying perceptions of the research-led research based principle.</li> <li>Students, Stakeholders, and Educationalists felt that Research-Led Research Based principle was well addressed throughout the Master's.</li> <li>Capstone Supervisors were divided and some felt that it could be addressed more in P3, and noted a lack of research experience in some students.</li> </ul>	<ul style="list-style-type: none"> <li>Students could give concrete examples of how this was practically implemented in the Master's.</li> <li>Capstone Supervisors felt that classes in P3 could be more academic and related to research skills.</li> <li>Teaching staff found it difficult to create content on this because of the different student research backgrounds and experiences.</li> <li>Improved integration into P1 and P2 (Food and Life and Health)</li> </ul>	<ul style="list-style-type: none"> <li>Student perceptions suggest that research led research based values were integrated into their learning experience.</li> <li>From a teaching staff perspective this was not mentioned as integrated in their values. Potentially this is because most staff have a background in this already.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
	<ul style="list-style-type: none"> <li>Teaching Staff noted student struggles with Academic Writing and Research Skills in the Capstone phase. They found this difficult to teach because of different student backgrounds and disciplines.</li> </ul>	<p>modules, in particular in Social Innovation could be facilitated</p>	
Sustainability	<ul style="list-style-type: none"> <li>Sustainability was the best represented educational principles according to the students and the teaching staff</li> <li>Sustainability was most employed in the module design</li> <li>Supervisors noted that students had different levels of knowledge on sustainability theory, which also impacted on their projects. This suggests that within the <b>Sustainability</b> principle, theoretical aspects could be covered more explicitly in previous phases.</li> </ul>	<ul style="list-style-type: none"> <li>Assessing sustainability as an educational principle was found to be problematic</li> </ul>	<p>Educationalists felt that Sustainability was strongly integrated into staff and student values.</p>
Technology-enhanced	<ul style="list-style-type: none"> <li>From students' perspective, Technology enhanced was listed as one of the least addressed in three phases.</li> <li>According to the student focus group, Technology Enhanced learning is one of the most integrated educational</li> </ul>	<ul style="list-style-type: none"> <li>The standard of technology infrastructure and staffing levels differ between institutions. This could have an impact on this educational principle.</li> <li>Many mentioned technical difficulties with the hybrid</li> </ul>	<ul style="list-style-type: none"> <li>Technology enhanced learning is challenging and the level of experience of students and staff should be noted before working with them.</li> <li>Based on different situations, some educationalists considered that the</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
	<p>principles because of the hybrid classroom setting and the relevant teaching program</p> <ul style="list-style-type: none"> <li>• Capstone Supervisors and Second Readers considered that Technology Enhanced learning is one of the least addressed</li> <li>• Technology enhanced learning was heavily discussed by the teaching staff, both in terms of usability issues, and module integration issues. Some felt that local activities in the hybrid classrooms should be prioritized as it would enhance the teaching experience from being more of an online experience to a technology enhanced experience.</li> <li>• In addition, some felt that more focus should have been on the content rather than the technology aspect during the design phase. Finally, teachers mentioned that students should be given more support on the meaning behind using certain technologies (i.e. video).</li> </ul>	<p>classroom technology (e.g. Teams organization, audio issues) which impacted on the learning experience. Greater use of emerging technologies was mentioned as being a need for future iterations of the Master’s, and the use of more practical technologies such as SPSS.</p> <ul style="list-style-type: none"> <li>• Regarding the module design: Across all P1 and P2 modules, the Technology Enhanced was one of the educational principals least commonly applied into module design. In P1, Technology Enhanced learning was one of the least applied EP; In P2, Technology Enhanced learning was one of the least applied EP in the 3 tracks. So the integration of this EP should be improved both in P1 and P2.</li> <li>• In two of the Life and Health modules “Healthy Lives and Wellbeing” and “Health Systems and Policies” there was no alignment with PLO4</li> </ul>	<p>Technology-enhanced is one of the educational principles most integrated into CHARM-EU teaching and learning experiences, some considered it one of the least (be more present? Like, make the flipped classroom principle more present maybe? Or blended? Technology-enhanced should be more integrated / explained / supported, renamed? )</p> <ul style="list-style-type: none"> <li>• Technology enhanced learning is one of the least commonly documented as integrated into the weekly sessions. In contrast, technology enhanced learning is fully integrated into all aspects of the programme as most of the learning is done via a flexible format.</li> <li>• For academic teachers, Technology Enhanced learning is one of the EPs that need more focus in the future.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
	<ul style="list-style-type: none"> <li>Many problems were listed with both the hardware and software. Some teachers argued that in some cases less technology would be needed (some things should be done locally as students are sitting in the classrooms together which should be made use of)</li> </ul>	<p>(related to technological tools). PLO 7 (containing digital skills) was also not aligned with any module in this Phase.</p> <ul style="list-style-type: none"> <li>TE linked to PLOs 4 and 7.</li> </ul>	
Student-centred	<ul style="list-style-type: none"> <li>Based on student questionnaire data and the opinion of teachers, this principle was one of the most addressed in the program</li> </ul>	<ul style="list-style-type: none"> <li>Students could give concrete examples of how this was practically implemented in the Master's.</li> <li>Students also felt that peer to peer leaning should be included in this principle and that they'd need more info/instruction on how to learn from their peers during group work</li> <li>In line with this principle, capstone supervisors suggested that students should be able to choose modules or sessions based on their research ability</li> <li>The teaching and administrative staff felt that student-led activities were impressive</li> </ul>	<ul style="list-style-type: none"> <li>Based on students' perceptions of the program, this educational principle is probably in line with students' values. The request for a bigger emphasis on peer to peer learning seems to support this as well.</li> <li>Educationalists felt that student-centered learning was one of the most integrated into the values of teaching staff.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
		<ul style="list-style-type: none"> <li>• Student Centered Learning was perceived as very well represented by teachers. However, some teachers expressed concerns about the relationship between teachers and students being too one-sided, meaning that they were afraid of being accused of not being understanding enough.</li> <li>• Improved integration into P1 and P2 (Life and Health) modules would be needed</li> </ul>	
Situated learning	<ul style="list-style-type: none"> <li>• Participants had relatively diverse perceptions of situated learning.</li> <li>• Students felt that situated learning was not strongly integrated into the teaching experience</li> <li>• Teaching staff felt that situated learning was relatively present in most modules. However, some teaching staff found it difficult to find stakeholders.</li> <li>• External stakeholders felt that students should have more</li> </ul>	<ul style="list-style-type: none"> <li>• When presented with this principle in the focus group, students were able to provide concrete examples of this principle within the Master's.</li> <li>• Teaching staff felt that situated learning was present in modules but this was not uniform across all modules (e.g. Phase 1).</li> <li>• Situated learning was strongly integrated into the module design templates. However, it could be better integrated into Food Health Environment Nexus and Health Systems And Policies</li> </ul>	<ul style="list-style-type: none"> <li>• Students appreciated the involvement of external stakeholders in the teaching.</li> <li>• Educationalists felt that situated learning was one of the most integrated into the values of teaching staff.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
	<p>immersion into the professional world.</p> <ul style="list-style-type: none"> <li>• Capstone supervisors felt that situated learning was relatively well integrated into the teaching experience.</li> </ul>	<ul style="list-style-type: none"> <li>• External stakeholders felt that students could have more development in skills related to situated learning.</li> </ul>	
Transversal skills	<ul style="list-style-type: none"> <li>• Transversal skills should be clarified and given more context</li> <li>• Transversal skills were often seen as implicit within the module teaching through groupwork and communication activities, and presentations, and were well designed into the curriculum. However, some felt that students lacked awareness that they were building these skills through these activities, and knowledge about transversal skill development could have been more explicit and communicated.</li> </ul>	<ul style="list-style-type: none"> <li>• Large teams in the Capstone phase caused challenges for collaboration.</li> <li>• Transversal skills is one of the educational principles which are most integrated into CHARM-EU teaching and learning experiences. But we need to be more explicit as to what Transversal skills encompass (i.e. what are these skills). / Transversal skills is implemented but might be clarified with some specific skills associated? Communication / Group work, etc. / The recommendations about</li> </ul>	<ul style="list-style-type: none"> <li>• Educationalists felt that Transversal skills was one of the most integrated into the values of teaching staff.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
	<ul style="list-style-type: none"> <li>• Transversal Skills (TS) link to the PLO 5, 6 and 7</li> <li>• In the question “What competencies do CHARM-EU students have that you would seek in an employee? “, some stakeholders mentioned competencies that they would seek in an employee that were aligned with certain educational principles, including the transversal skills (networking, engagement, working in a team, communication).</li> </ul>	<p>Transversal Skills should be expanded on. There is a recommendation missing concerning the explicit teaching of those skills (not only implicitly by using them).</p> <ul style="list-style-type: none"> <li>• The assessment of Transversal skills is challenging</li> <li>• In Phase 1, Transversal Skills was one of the educational principles least applied.</li> <li>• In Phase 2 Food and Water, Transversal skills were was one of the educational principles most commonly applied.</li> </ul>	
Transdisciplinarity	<ul style="list-style-type: none"> <li>• Transdisciplinarity was suggested by the teachers and students as educational principles that need more focus in the future.</li> <li>• The students appreciated the opportunity to work with peers and stakeholders from different disciplines, providing diverse perspectives and valuable learning opportunities.</li> <li>• Transdisciplinarity is considered an aspect in higher education that CHARM-EU is trying to</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Transdisciplinarity</b> was noted as a challenging educational principle for academic staff to integrate and assess, and teaching staff noted the difficulties even for senior researchers to do transdisciplinary research.</li> </ul>	<ul style="list-style-type: none"> <li>• Transdisciplinarity takes time to emerge, and some felt that the time to do this was not sufficient in the Master’s. Finding a balanced cohort of teaching staff across multiple disciplines was absent in some modules, which also hindered transdisciplinarity.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
	<p>implement strongly that is not as common in other teaching experiences.</p>		
<p>Transnational and intercultural learning</p>	<ul style="list-style-type: none"> <li>• Students reported that Transnational and intercultural learning was one of the least addressed across all three phases.</li> <li>• Capstone supervisors felt that this principle was least addressed by students and their projects.</li> <li>• Teaching staff felt that this principle was well integrated. However, it was difficult to assess.</li> </ul>	<ul style="list-style-type: none"> <li>• Within the focus group students could only indicate one example of this principle and felt that more topics outside of Europe, more diverse stakeholders within lectures could be used.</li> <li>• Module coordinators felt that students benefited from an intercultural environment in the Capstone phase.</li> <li>• Teaching staff felt that the teaching experience could have included more meaningful content related to the Global South, intercultural readings, and understanding different worldviews. They felt it was more implicit rather than explicit.</li> <li>• Within the module analysis, this principle was relatively well</li> </ul>	<ul style="list-style-type: none"> <li>• Educationalists felt that Transnational and intercultural learning could have been better integrated into staff and student values.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
		<p>integrated. However, it could be better integrated into Transdisciplinary Research, Food Health Environment Nexus and Food Systems And Their Transformations</p> <ul style="list-style-type: none"> <li>• Educationalists felt that Transnational and intercultural learning could have been better integrated into the teaching experience, and that this was a challenging principle to integrate.</li> </ul>	
Inclusivity	<ul style="list-style-type: none"> <li>• Students reported that inclusivity was least addressed in two phases but they appreciated the approach been taken by CHARM-EU.</li> <li>• Capstone supervisors felt that inclusivity was least addressed by students and their projects.</li> </ul>	<ul style="list-style-type: none"> <li>• Students could identify two activities related to inclusivity within the teaching experience.</li> <li>• Teaching staff felt that inclusivity was least integrated into teaching experiences.</li> <li>• Across P1 and P2 modules inclusivity was least integrated into module designs. Only one module had inclusivity built into a MLO.</li> </ul>	<ul style="list-style-type: none"> <li>• Educationalists felt that CHARM-EU's multidisciplinary approach and mixed environment created an inclusive learning environment that accommodated diverse cultures and backgrounds.</li> <li>• Some teaching staff could find integrating inclusivity challenging because they do not understand its potential, or because it does not align with their existing practices or mindset.</li> </ul>

Educational Principle	Perceptions	Integration in teaching experience	Integration in staff and student values
		<ul style="list-style-type: none"> <li>Inclusivity was not explicitly built into the PLOs text and potentially because of this, module designers could be less focused on including aspects of this into their weekly sessions.</li> </ul>	

### 3.4. EDUCATIONAL PRINCIPLES CONTENT

Following the educational principles analysis, WP3.1 moved to examining the current content of the educational principles. Their task was to:

- Review the **content** of the educational principles in terms of consistency and coherence.
- Explore whether **new** educational principles should be added based on the analysis
- Explore whether educational principles can be **refined** based on the analysis
- Explore whether educational principles can be **removed** based on the analysis

Multiple individuals were consulted in this revision:

- Educationalists
- DEI Office
- Mobility Office
- Academic Council

#### 3.4.1. EDUCATIONALIST HACKATHON

Having presented the analysis to Educationalists, a workshop was organized to explore whether CHARM-EU needs to modify, clarify, remove, or merge any educational principles. 12 CHARM-EU Educationalists were present at a WP11 meeting in Utrecht in September 2023, and this event was used to host the workshop. Before the workshop, each educationalist was asked to read the evaluation document, and complete a SCAMPER [tool](#) on Miro.

##### 3.4.1.1. DISCUSSION OF TROUBLESOME PRINCIPLES

In the first part of the workshop, principles that emerged from the Miro Board as ‘troublesome’ were discussed (i.e., they were mentioned multiple times by different educationalists in the Miro Board, they were least understood, they were problematic in their context and/or definition). These principles were selected, and discrete tasks were given to three breakout groups. The tasks and their outputs are described below.

#### Transversal Skills Breakout Group

##### Task 1: Describe the transversal skills taught in a CHARM-EU context

The breakout group described how we should

- Use the PLOs to identify the transversal skills.
- Explore the transversal skills framework used for the Educational Principles

**Recommendation:** Description of individual transversal skills should be clearly presented in the Educational Principles document related to CHARM-EU.

**Action:** An educationalist to investigate the PLOs and existing framework to identify all transversal skills. These should be added to the Educational Principles document if not already within.

**Task 2: Recommend whether Challenge based, Situated Learning, Technology Enhanced, Transnational and Intercultural should be within, outside, or inverted (i.e. CBL encompasses TS) within this principle**

The breakout group discussed how

- Challenge based learning, situated learning and technology enhanced are all linked to transversal skills in different ways.
- Transnational and intercultural learning was described as a transversal skill in itself.

**Recommendation:** Transnational and intercultural learning should be integrated into transversal skills.

**Action:** Transnational and intercultural learning should be considered as part of transversal skills, however the mobility office should be consulted.

### **Technology Enhanced Learning Breakout Group**

**Task 1: Recommend how TEL should be positioned within the educational principles; As an explicit principle (no change), embedded within another principle, as an overarching concept across all principles, removed completely, something else...**

**Task 2: Recommend whether TEL should be retitled or redefined**

The breakout group had two key considerations:

- Whether the focus be on technology as a means of improving the teaching and learning experience (i.e. the pedagogy) or
- As mainly a way of supporting the hybrid teaching approach
  - If we want to focus on using technology as a pedagogical tool then it should be an explicit principle
  - If we want to focus on using technology as a way of supporting the hybrid teaching approach, it could be subsumed into Challenge based learning.

The breakout group also considered whether TEL is currently being used

**Recommendation:** Given the focus on Emerging Technologies in the CHARM-EU initial project, and the use of technologies such as the PEEK app in the Master's teaching, it is evident that technology enhanced learning is not just for supporting the hybrid teaching approach. The recommendation would be that technology enhanced learning remains as an explicit principle.

**Action:** The section on TEL in the educational principles document should be reviewed by an Educationalist.

### **Inclusivity Breakout Group**

**Task 1: Recommend how inclusivity could be reframed within the educational principles; As an explicit principle (no change), embedded within another principle, as an overarching concept across all principles, removed completely, something else...**

The breakout group discussed how inclusivity could be refocused by emphasizing its approach for enhancing teaching, and by using inclusive pedagogical principles. They felt that this is an overarching concept which connects all of the educational principles.

**Recommendation:** A refocus on the pedagogy of inclusivity is recommended.

**Action:** The section on inclusivity in the educational principles should be rewritten and approved by the inclusivity office. An educationalist with experience in this should do this action.

**Other recommendations**

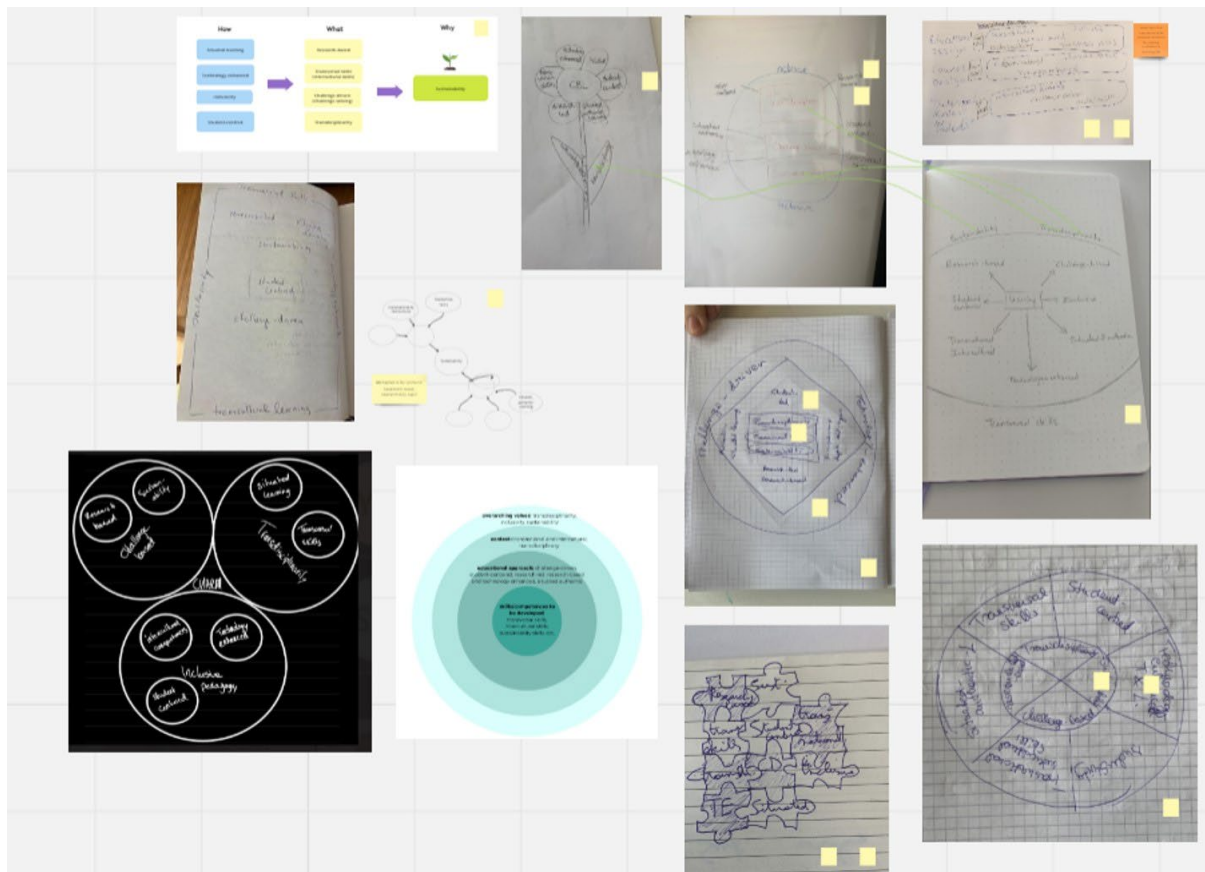
To align with the literature:

- Challenge driven learning should be retitled Challenge Based Learning (CBL)
- Research led Research based should be retitled as Research Based Learning (RBL)

**Action:** An educationalist should retitle these in the Educational Principles document.

**3.4.1.2. CREATIVE SESSION ON GROUPING EDUCATIONAL PRINCIPLES**

Given that key themes emergent from the Miro Board was the grouping or conceptualization of the educational principles, and the development of a new visual representing the educational principles the workshop was tasked to draw their own ideas of how the educational principles could be visualized.



**Figure 12** Visualizations of the Educational Principles

A thematic analysis of the images was conducted to ascertain consistency in design, grouping, and contextualization. The following results were emergent from the analysis:

Thematic area	Analysis
<b>Representative shape</b>	The use of a <b>circle</b> as a visualization tool was used in 6 visuals explicitly, with one that could be reformed in a circle (i.e. it was a rectangle but could be formed in a circle without reframing or losing the concepts) (n=7)
<b>Other symbols or metaphors</b>	A jigsaw, a flower, flowcharts, and a rectangle.
<b>General Conceptualization</b>	All except for one visualization conceptualized the educational principles in terms of each other.  However, one conceptualized the educational principles in terms of the people who would use them (i.e. the people involved, students, teachers etc...).
<b>Periphery Vs Center</b>	In analysing where each educational principle is located, the analysis separated any principle located at the periphery of the visual to those located at the center. The rationale for this was to ascertain groupings at a higher or lower level.  The majority of educationalists had <b>inclusivity</b> as a peripheral educational principle
<b>Connected principles</b>	This analysis was challenging as most of the educationalists grouped the educational principles in different ways. This does make it difficult to link and group the principles. However, there are some groupings that did emerge. <ul style="list-style-type: none"> <li>• Sustainability and transdisciplinarity were connected multiple times in some graphics</li> <li>• Technology enhanced and situated learning were connected multiple times in some graphics</li> <li>• Transversal skills and transnational were connected in multiple times in some graphics</li> </ul>
<b>Isolated principles</b>	Inclusivity was often isolated from other educational principles.

	Sustainability was often isolated from other educational principles.
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Given the complexity and differences between all of the graphics, it is recommended that a substantial change to the educational principles graphic may be difficult. However, the following recommendations could be posited:

- Use of a circle as a way of framing the educational principles
- Positioning inclusivity in the periphery of the graphic
- Positioning sustainability in the periphery of the graphic
- Connecting some educational principles in terms of another in the center of the graphic

All actions were investigated and a draft version of the educational principles document and visual was shared with Educationalists based on the workshop for review.

### 3.4.2. REVISION OF EDUCATIONAL PRINCIPLES TEXT

Based on the evaluation and workshop, two versions of the educational principles text were share with Educationalists for their input. Both versions had text based updates, but one had 9 principles with two subsumed (transnational and intercultural was integrated into transversal skills), and the other had the initial 10 principles. Having discussed and updated both versions, these were then sent to the Academic Council for discussion. The Academic Council requested that 10 principles remained and approved the final updated version on the 30<sup>th</sup> May 2024.

### 3.4.3. EDUCATIONAL PRINCIPLES ACTIONS

Following the analysis, and updating of the educational principles text, actions were identified by WP3.1 to address recommendations that had emerged. This aligns with the action aim:

- Based on results of the previous aims, improve **student outcomes, staff development and curriculum design** by providing clear actions for Educationalists, Academic Council and Teaching Staff.

Activities based on the recommendations provided by students and staff to improve student outcomes, staff development and curriculum design were prioritized in terms of educational principles identified as needing most focus. The following table details the actions. In addition to these specific actions implemented, after each phase review that is conducted during the Master’s, specific recommendations related to the educational principles are presented to Module Coordinators. This phase review includes details from student and staff evaluations of the Master’s. Thus, both explicit actions based on this analysis and emergent recommendations from phase reviews are now implemented for the Master’s.

Educational Principle	Action	Implementation
Inclusivity	<p>Facilitate greater inclusivity training for teaching staff</p> <p>Facilitate improved integration of inclusivity into the Masters</p> <p>Facilitate inclusivity training for students</p>	<p>During July 2024, a dedicated inclusivity <a href="#">session</a>, focused on Universal Design for Learning, was implemented at the Barcelona Hackathon for CHARM-EU teachers to prepare and incorporate activities related to inclusivity during the Master's. This was facilitated by the Educationalists and a DEI expert.</p> <p>In addition, during onboarding sessions with new Teachers, inclusive education was highlighted.</p> <p>A dedicated orientation session for new students is held annually with a focus on inclusivity prepared by the DEI office.</p>
Transnational and intercultural learning	<p>Facilitate greater transnational and intercultural teaching in the Masters.</p> <p>2024 CHARM-EU Annual conference</p> <p>Intercultural training module for students</p>	<p>During July 2024, a dedicated <a href="#">session</a> focused on transnational and intercultural learning, was implemented at the Barcelona Hackathon for CHARM-EU teachers to prepare transnational and intercultural activities during the Master's.</p> <p>The <a href="#">2024 CHARM-EU Annual Conference</a> focused on intercultural and transnational learning. Many teaching staff and students were present at specific sessions related to this educational principle and this was key for professional development in this space.</p> <p>An intercultural training module was developed for all alliance students embarking on a mobility and will be piloted in 2025.</p>

Transversal skills	<p>Clarification of transversal skills acquisition</p> <p>Improved mentor training</p>	<p>An alumni survey was published in February 2024 which documents the transversal skills that graduates possess following the Master's. This communicated the transversal skills that graduates possessed post-Master's to potential students.</p> <p>A revised mentor training programme was implemented where mentors were trained on how to scaffold various transversal skills during mentor appointments.</p>
Technology enhanced	Improved communication and training of technology	<p>Training sessions on assessment technology were refined and implemented for teaching staff and students. Feedback from teaching staff of their training needs was incorporated.</p> <p>Dedicated sessions on the technology being used in CHARM-EU were implemented for students during orientation.</p> <p>A resource on how to access software using the UU portfolio was developed by the JVITO and shared with students.</p> <p>Dedicated sessions on 'Check your portfolio' for students to support them in their submissions using Scorion technology were implemented. New sessions related to eJournal were implemented.</p> <p>A new resource was created on the technology tools used in the Master's teaching for teaching staff (i.e. how Teams, Moodle and Scorion are integrated).</p>
Sustainability	Greater coverage in early phases	<p>Phase 1 teaching staff improved their content related to sustainability in cohort 3. More positive evaluations towards this educational principle within this Phase was noted after this action.</p>

<p>Student-centered</p>	<p>Provide more student contact sessions before the Master's starts to better prepare them for the Master's and gain their input.</p> <p>Greater engagement with students during the Master's</p>	<p>Video meetings during the summer with new student cohorts were implemented by JVAO to better prepare students for the Master's.</p> <p>Coffee mornings with students were implemented twice per phase by the JVAO to gain insights and improve communication with students.</p>
<p>Transdisciplinary</p>	<p>Sharing sessions to improve alignment across Phases</p>	<p>Sharing sessions across and between modules were facilitated by the Programme Board.</p>

## 4. OPTIMISE IN-CLASS AND ONLINE LEARNING EXPERIENCE AND SUPPORT

### 4.1. TASK AIM

As part of WP 3.1 Evaluation of the Master's, a sub task "Optimizing the in-class and online learning experience and support" was identified in the proposal.

**This task seeks to identify recommendations to optimize the in-class and online learning experiences and support for the Master's in Global Challenges for Sustainability.**

As part of this task, an evaluation and analysis of current and new data sources was conducted to identify elements that can be optimized to improve the student and teaching experience in the Master's. Some of the recommendations that emerged have been taken ownership by this WP (e.g. a mentor improvement programme). However, others may fall under the remit of other WPs (e.g. Professional Development activities in WP11). This report seeks to clarify and document recommendations based on our analysis for other WPs that can take ownership of these tasks.

### 4.2. DEFINITIONS

The following definitions provide clarity to the aim of this sub-WP.

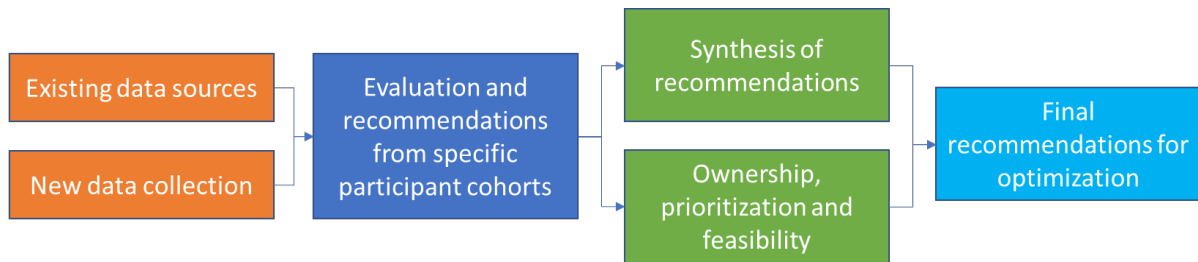
- **Optimization:** Changing an existing CHARM-EU experience or process to increase favourable outcomes and reduce undesirable outcomes.
- **In-class learning experience:** Any learning experiences within the CHARM-EU hybrid classroom.
- **Online learning experience:** Any learning experience facilitated by CHARM-EU applications such as MS Teams, Moodle, Wooclap, whiteboard, etc. where the student is either not located in the location of the teaching activity, or is communicating with another student in a different location.
- **Support experience:** This relates specifically to mentoring in the context of this WP but other support elements that emerge from the analysis including financial, accommodation and mental health are included.

### 4.3. METHODOLOGY

Existing data sources and new data collection were analyzed to identify tasks related to in-class and online learning experience and support that require optimization. This was a mixed methods approach using both quantitative survey results, and qualitative feedback.

Based on this evaluation, recommendations were then provided from the perspective of each participant cohort (i.e. student recommendations).

Following this, synthesised recommendations are then provided with specific actions, and owners with levels of feasibility and prioritization.



**Figure 13** Methodological approach for identifying recommendations to optimize the teaching and learning and support experience

#### 4.4. DATA SOURCES AND PARTICIPANTS

To evaluate all perspectives of the CHARM-EU Master's teaching and learning experience, and provide recommendations, a variety of different participants involved in the Master's in Global Challenges for Sustainability were consulted. These included students, teaching staff, administration staff, mentors, JVAO, Hybrid Classroom Team, Teaching Assistants, and Educationalists. **Table 20** describes the data sources used from these participants.

**Table 20** Data sources used for analysis

<b>Data source</b>	<b>Description</b>	<b>Date</b>	<b>No. of respondents</b>
Student Phase Review Surveys (4)	Four Phase Review surveys (P1, P2, P3 cohort 1, P1 cohort 2) were analysed for information regarding the teaching experience and hybrid classroom.	03/02/2022 01/07/2022 31/01/2023 26/01/2023	221
Teaching staff and administrative staff survey	C1 P3 and C2 P1 teaching and administrative staff survey.	13/03/2023	15
Hybrid Classroom Team Miro Board	Members of the Hybrid Classroom team participated in two brainstorming sessions to identify key elements of good practice, and opportunities to improve the hybrid classroom.	30/09/2022 02/12/2022	5
Teaching Assistants / Fellows focus group and interview	A focus group with Teaching Assistants and Fellows was conducted on the 28 <sup>th</sup> of March.	28/03/2023	5
Educationalists focus groups	Focus groups with Educationalists were held on the Educational Principles and Programmatic Assessment. Relevant results have been included here.	22/03/2023 13/04/2023	5 + 5

Mentor survey	A short survey was disseminated to mentors to ascertain their perceptions towards their role in CHARM-EU.	March 2022	10
Mentor feedback session	A focus group with mentors was held in April 2023 to gain their perceptions and challenges with the CHARM-EU mentor programme.	02/04/2022	14
Mentor co-ordinator session	A session with CHARM-EU mentor co-ordinators was held in March 2023 where recommendations emerged.	27/03/2023	5
JVAO interview	An interview with the JVAO officer responsible for mentor co-ordination was held in March 2022	15/02/2023	1
Total participants			281

## **4.5. RESULTS**

The following sections provide a summary of the results of each data source and recommendations that emerged. It is important to note that these initial recommendations are presented from the perspective of each participant cohort. This was to ensure clear alignment of a recommendation and participants (i.e. who recommended what). However, in section 5, a synthesized version of these recommendations with actors, feasibility and prioritization are provided (i.e. recommendations are amalgamated from all participant cohorts).

### **4.5.1. STUDENT PHASE REVIEW SURVEY**

Four student phase review surveys were used to investigate perceptions of the hybrid classroom and related learning experiences; Phase 1, 2 and 3 for cohort 1 (2021-2023), and Phase 1 in (2022-2024). Based on this survey a qualitative examination of open-ended questions was conducted and key themes emerged from the data. A full report is available in Appendix D. The key themes identified in the analysis, a brief description of each theme, and aligned recommendations are presented in the table below:

**Table 21** Results and recommendations for optimisation from a student perspective

Theme	Description from data	Recommendations
Hybrid Classroom issues with physical space	Comments on the physical environment. The students identified issues faced regarding the technology and space and included suggestions for improvement.	<ul style="list-style-type: none"> <li>Review the rooms used in every location and assess their appropriateness for long days of online lectures. The sensory input from sources other than the lecture should be minimised as much as possible.</li> <li>Provide a second option of a space that students can use when they need to work on different group tasks.</li> </ul>
Hybrid Classroom issues with audio	Comments on the audio in the hybrid classroom	<ul style="list-style-type: none"> <li>Review the microphones in every room and increase the number of microphones available. Efforts to provide microphone in every table or headsets for each student, especially in rooms where the microphone is in a fixed location away from the students.</li> </ul>
Reducing the number of platforms	This theme was evident in all surveys but was the most commented on in Cohorts 1 & 2 of Phase 1. The students found the use of more than one platform to pose a significant difficulty in communication and reduce efficiency.	<ul style="list-style-type: none"> <li>Review the need and function of each platform (Scorion, Teams, and Moodle) in the programme.</li> <li>Ensure that there is one clear channel of communication for students and staff where all the information can be found easily and it gets updated regularly.</li> </ul>
Scorion	Comments on the use of Scorion. The majority of the comments derived from Cohorts 1 & 2 of Phase 1 and focused on Scorion not being user friendly.	<ul style="list-style-type: none"> <li>A full review of Scorion is recommended</li> <li>Ensure that technical support is provided for Windows and iOS users regarding the use of VLE platforms.</li> </ul>
Moodle	Comments on the use of Moodle. The comments questioned the necessity of Moodle as a platform, as the majority of the information found in Moodle could be found in Teams.	<ul style="list-style-type: none"> <li>Review the need and function of each platform (Scorion, Teams, and Moodle) in the programme.</li> <li>Ensure that technical support is provided for Windows and iOS users regarding the use of VLE platforms.</li> </ul>

Theme	Description from data	Recommendations
Teams	Comments on the use of Teams. The comments were mostly highlighting technical issues faced by users (mostly IOS users), as working on Teams for several hours can cause overheating and/or lagging issues.	<ul style="list-style-type: none"> <li>Review the need and function of each platform (Scorion, Teams, and Moodle) in the programme.</li> <li>Ensure that technical support is provided for Windows and iOS users regarding the use of VLE platforms.</li> </ul>
Training	This theme highlights the need for training on how to use the platforms by staff and students alike.	<ul style="list-style-type: none"> <li>Training at the beginning of each phase for students and staff alike on the purposes of each VLE platform is key. Provision of continuous technical support would improve the student experience.</li> <li>More specifically, the student experience would improve further if CHARM teaching staff and guest lecturers were provided training on how to teach, access and upload material on VLE platforms.</li> </ul>
Timetable	The theme emerged as a large number of comments focused on a) the need for an easily accessible calendar that is updated regularly and b) the need for the staff to be informed of the calendar and follow the timetable so that last-minute changes are avoided.	<ul style="list-style-type: none"> <li>The use of one channel of communication about the timetable is key. Ensure that all updates are communicated in a timely manner and followed by all teaching staff.</li> <li>Consider the use of an academic calendar that can sync with individual calendars, so that it is easily accessible by all, and all updates and changes are communicated at once.</li> </ul>
Other supports (financial, accommodation & mental health)	In the theme the students' request for additional support is highlighted. The comments on financial and mental health struggles, along with difficulties in finding accommodation in Utrecht and Dublin, were extensive and seemed to highly affect the learning experience of the students in the Master's.	<ul style="list-style-type: none"> <li>Review more financial support mechanisms for students, that correspond to the cost of living in each location.</li> <li>Accommodation support and affordable solutions for Utrecht and Dublin especially are urgently needed.</li> <li>Timely payment of grants</li> <li>Review of payment methods for fees (payment in parts)</li> <li>Non-EU support with visa requirements and financial aid.</li> </ul>

Theme	Description from data	Recommendations
		<ul style="list-style-type: none"><li>• Ensure that all students know and can register quickly and can access counselling services, disability services and inclusion offices in all locations of CHARM-EU. Make sure there is a point of contact in each location to help students with difficulties in registering and accessing those services.</li></ul>

#### 4.5.2. TEACHING PHASE REVIEW SURVEY

A survey was disseminated to Teaching and Administrative staff at the end of Phase 1 and Phase 3 of the Master's in February 2023. This survey asked respondents to reflect on these Phases generally and share challenges and best practices. The results from this survey were explored to ascertain if any data was relevant to this analysis. The following recommendations (Table 2) should be taken into account for optimizing the in-class and online learning experiences and support.

**Table 22** Results and recommendations for optimisation from a teaching and administrative staff perspective

Theme	Description from data	Recommendations
General technical infrastructure	The technological infrastructure is not standardized across all institutions.	<ul style="list-style-type: none"> <li>CHARM-EU should explore the feasibility of standardizing the technological infrastructure across all institutions. This will help ensure that all institutions have access to the same resources, enabling them to offer high-quality education to their students.</li> </ul>
Timetable	Last minute timetable changes and maintenance are challenging from a teaching and administrative perspective.	<ul style="list-style-type: none"> <li>CHARM-EU should explore strategies to minimize last-minute timetable changes and maintenance to mitigate the challenges that arise from a teaching and administrative perspective. By providing timely notification of any changes, institutions can better plan and adjust accordingly, ensuring a smoother and more efficient academic process.</li> </ul>
Scorion	Maintaining and updating Scorion is challenging and time consuming for administrative staff, assessors and teaching staff. Related, addressing Scorion technical challenges for stakeholders and onboarding new staff on the technology is time consuming. Students also find the technology challenging to use, especially at the end of a phase.	<ul style="list-style-type: none"> <li>CHARM-EU should consider investing in resources and training programs to address the challenges faced by administrative staff, assessors, teaching staff, and students in maintaining and updating Scorion, the platform used for assessment and evaluation. By providing adequate resources and training, CHARM-EU can mitigate the time-consuming nature of addressing technical challenges and onboarding new staff on the technology. Additionally, providing adequate support to students on using the platform can help improve their experience with Scorion</li> </ul>
Hybrid Classroom issues with physical space	Some students lacked a meeting space to meet with other students and stakeholders.	<ul style="list-style-type: none"> <li>CHARM-EU should ensure that adequate meeting spaces are available for students to meet with other students and stakeholders. Providing designated spaces for meetings can help foster collaboration and engagement among students and stakeholders, ultimately enhancing the learning experience.</li> </ul>

Theme	Description from data	Recommendations
Training	Greater staffing for technological support is needed for module coordinators.	<ul style="list-style-type: none"> <li>CHARM-EU should consider increasing staffing for technological support to assist module coordinators. By providing additional support, module coordinators can receive the necessary guidance and resources to effectively integrate technology into their modules, ultimately enhancing the overall quality of education.</li> </ul>
Capstone team matching procedure	The team matching procedure for Capstone Challenges was time intensive and resource heavy.	<ul style="list-style-type: none"> <li>A new tool for team matching should be explored.</li> </ul>

#### 4.5.3. HYBRID CLASSROOM TEAM MIRO BOARD

Members of the Hybrid Classroom team participated in two brainstorming sessions (30/09/2022 and 02/12/2022) to identify key elements of good practice, and opportunities to improve the hybrid classroom. These ideas were collected on a [Miro Board](#). The following recommendations (Table 3) should be taken into account for optimizing the in-class and online learning experiences and support.

**Table 23** Results and recommendations for optimisation from a Hybrid Classroom Team perspective

Theme	Description from data	Recommendations
Hybrid Classroom issues with audio	<p>There are sound problems in hybrid classrooms (i.e. Microphone in TCD, echo in UU, and general noise in the classrooms).</p> <p>Acoustics wall on castors</p>	<ul style="list-style-type: none"> <li>CHARM-EU should consider investing in improving the audio equipment in TCD and UU by installing new microphones, and providing noise-canceling headphones for students to enhance the quality of audio during lectures and other educational activities.</li> <li>An acoustics wall on castors should be explored.</li> </ul>
Hybrid Classroom issues with physical space	<p>There are a variety of issues related to the physical environment including the non-use of Pods in some locations, the lack of a cosy corner in UU and UM, the size of the hybrid classroom is small in some locations, and there can be too many groups working together in a small location which disturb the work.</p>	<ul style="list-style-type: none"> <li>Pod use should be standardized in all locations by creating a Pod guide.</li> <li>A cosy corner should be implemented in all locations where possible.</li> <li>Provide a second option of a space that students can use when they need to work on different group tasks.</li> </ul>
Hybrid Classroom issues with vision	<p>Use two screens so that teaching staff can see slides and students at the same time.</p>	<ul style="list-style-type: none"> <li>All classrooms should have two screens.</li> </ul>
Training and support	<p>Position of the teacher in the room and how the camera can make students in other locations feel sick.</p>	<ul style="list-style-type: none"> <li>WP11 should create resources specific to hybrid teaching approaches.</li> <li>WP11 should implement resources for teaching staff on how to create local learning experiences.</li> </ul>

Theme	Description from data	Recommendations
	<p>How to increase participation in the classroom when the Teacher is not present.</p> <p>Best practices for teaching position in the hybrid classroom (i.e. where they are located)</p> <p>More/better blend of online, hybrid, and local activities</p> <p>Improve situated learning activities</p> <p>Student preference to work locally</p>	<ul style="list-style-type: none"> <li>Teaching Assistants should be used to scaffold local activities.</li> </ul>
Training and support	<p>New resource on quick tips on how to use the Hybrid Classroom for both students and Teaching Assistants.</p>	<ul style="list-style-type: none"> <li>WP11 should create a resource on how to use the hybrid classroom for both students and Teaching Assistants.</li> </ul>
Staffing	<p>Members of the hybrid classroom team: a minimum of one member of each university is required to have the correct perspective of needs and practice in every institution</p> <p>Organisation of the hybrid classroom team: the amount of hours needed should be defined based on needs collected by the JVITO. At least one monthly meeting is suggested at the beginning to know each other and exchange on local practices around learning spaces.</p>	<ul style="list-style-type: none"> <li>Clear guidelines for communicating with the local IT office should be provided to anyone working in the Hybrid Classroom.</li> </ul>

<b>Theme</b>	<b>Description from data</b>	<b>Recommendations</b>
	Local IT Offices participation: a connection with local's IT office is fundamental	

#### **4.5.4. TEACHING ASSISTANTS / FELLOWS FOCUS GROUP AND INTERVIEW**

A focus group with Teaching Assistants and Fellows was conducted on the 28<sup>th</sup> of March. A total of five Teaching Assistants from three partners were represented. The following recommendations and key issues emerged (Table 4).

**Table 24** Results and recommendations for optimisation from a Teaching Assistants/Fellows perspective

Theme	Description from data	Recommendations
Hybrid Classroom issues with audio	The main issue for TA staff is related to sound rather than vision. Technical standards in terms of sound and microphones differ across institutions, which causes difficulties for students trying to hear. Microphones fixed on tables are not recommended, but the microphones in UU have been commended.	<ul style="list-style-type: none"> <li>CHARM-EU should consider investing in improving the audio equipment in TCD and UU by installing new microphones, and providing noise-canceling headphones for students to enhance the quality of audio during lectures and other educational activities.</li> <li>An acoustics wall on castors should be explored.</li> </ul>
Hybrid Classroom issues with vision	In some locations, the camera is fixed and when lecturers move around, they are out of frame. A moving camera or mobile camera would be more suitable.	<ul style="list-style-type: none"> <li>CHARM-EU should consider investing in a mobile camera in all locations.</li> </ul>
Hybrid Classroom issues with physical space	Improve the use of Pods to encourage a sense of belonging	<ul style="list-style-type: none"> <li>Pod use should be standardized in all locations by creating a Pod guide.</li> </ul>
VLE issues	<p>Materials should always be aligned between Moodle and Teams.</p> <p>Having two platforms can be confusing.</p>	<ul style="list-style-type: none"> <li>Review the need and function of each platform (Scorion, Teams, and Moodle) in the programme.</li> <li>Ensure that there is one clear channel of communication for students and staff where all the information can be found easily and it gets updated regularly.</li> </ul>

Theme	Description from data	Recommendations
Timetable	<p>The teaching plan is not always clear to the students and TAs, and can change from the documented timetable. This can cause confusion.</p> <p>Often the timetable is not updated, missing a session, or updated at the last minute, and students struggle with this.</p> <p>Improve the accessibility and updating procedure of the calendar.</p>	<ul style="list-style-type: none"> <li>• Communicate to Teaching Staff that changes to the teaching plan should be minimal once they have been decided.</li> <li>• The use of one channel of communication about the timetable is key. Ensure that all updates are communicated in a timely manner and followed by all teaching staff.</li> <li>• Consider the use of an academic calendar that can sync with individual calendars, so that it is easily accessible by all, and all updates and changes are communicated at once.</li> </ul>
Training (Hybrid Teaching)	<p>There are different levels of hybrid teaching experience across the module. Some teachers are very well equipped to teaching in an online/hybrid environment, but others have less experience. Some sessions are very interactive, and others, not as much. Some are well presented on Teams, and others not. This causes differences in teaching quality. Teachers should be better trained on how to teach in a hybrid environment.</p>	<ul style="list-style-type: none"> <li>• WP11 should create resources specific to hybrid teaching approaches including presentation skills, timing and workload, content chunking, designing for an online cohort, room equipment, interactivity, best practices, and sample activities.</li> <li>• Local activities should be expanded.</li> <li>• A one page document on the requirements for teaching in the hybrid classroom should be produced (WP7).</li> <li>• A checklist for teaching staff before they teach in the hybrid classroom should be produced.</li> <li>• TAs should be more involved in the development of module activities.</li> <li>• TAs and Module Coordinators should be introduced and collaborate on optimizing the hybrid classroom.</li> </ul>

Theme	Description from data	Recommendations
	<p>Presentation skills of teaching staff: Lack of awareness of where to look and not engaging with the camera.</p> <p>New professional development for teaching staff on Technologies used and the VLE to improve their confidence in using these tools.</p> <p>Presentation skills in a hybrid classroom</p> <p>Content chunking</p> <p>Designing for an online cohort</p> <p>Room equipment</p> <p>Timing and workload: Some lectures can be too long, or there is an overload of information.</p> <p>Many teachers do not know how to use the technology, and a one-page document on the requirements for teaching in the hybrid classroom for teachers should be produced.</p>	

Theme	Description from data	Recommendations
	<p>In addition, a checklist for teaching staff should be produced before they come to the classroom.</p> <p>TAs are sometimes involved in the teaching activities in the classroom, both locally and remotely. Most TAs would like to be more involved in the local teaching activities (i.e. leading discussions, moderating, facilitating questions and timing), and the content of the lectures.</p> <p>Module Coordinators should be made aware of the background and abilities of TAs as they may be useful for teaching.</p> <p>Improve local and peer to peer activities</p>	
<p>Student learning experiences</p>	<p>Some lecturers forget to give students a break during the day which can lead to tiredness in students.</p> <p>Some students lack confidence in asking questions during sessions.</p> <p>Student confusion in the first weeks of the course: Many new tools and ideas are shared with students and it can take time for them to get to grips with them. Integrate</p>	<ul style="list-style-type: none"> <li>• Hybrid Classroom resources should highlight the need for breaks.</li> <li>• Hybrid teaching approaches training should highlight issues with students asking questions and how to improve this.</li> <li>• Targeted activities using the VLE during the first weeks of the Master's should be developed to give students experience of the tools.</li> <li>• Facilitate student Teams champions to support peer to peer learning.</li> </ul>

Theme	Description from data	Recommendations
	<p>Teams and real experiences in early assessment, and have student Teams champions.</p>	
Classroom management	<p>In some locations, students move between classrooms. This is problematic as the technical and physical requirements differ in different classrooms. Having one classroom would improve this.</p> <p>TAs are sometimes asked to manage slides during a presentation. This is often shared at the last minute. It would be more helpful for slides to be shared earlier to TAs.</p> <p>TAs often need to contact teaching staff but do not have their details. TAs should have contact details of teachers.</p>	<ul style="list-style-type: none"> <li>CHARM-EU should endeavor to have one classroom where possible.</li> <li>Communication between Teaching Staff and Teaching Assistants should be improved. This could be done using a checklist and introductory email.</li> </ul>
Training	<p>A more formalized and centralized approach to TA training should be created.</p> <p>More technical training during the onboarding of a TA is requested.</p> <p>Improve onboarding of new Teaching Assistants and use of job shadowing</p>	<ul style="list-style-type: none"> <li>WP11 should create a Teaching Assistant onboarding programme including job shadowing.</li> </ul>

Theme	Description from data	Recommendations
Staffing	Some TAs have weekly meetings with administration staff, or ad hoc meetings with module coordinators, which gives them a good oversight of what is required and their expectations. However, this does not always happen across all partners, modules or phases.	<ul style="list-style-type: none"><li>• Teaching Assistants should have weekly meetings with Module Coordinators.</li></ul>

#### 4.5.5. EDUCATIONALISTS INTERVIEWS

Two focus groups with Educationalists were conducted on the 22/03/2023 and 14/04/2023 on Programmatic Assessment and the CHARM-EU Educational Principles. As part of these focus groups, certain elements related to the teaching and learning experience and support emerged. The following recommendations and key issues emerged.

**Table 25** Results and recommendations for optimisation from an Educationalists perspective

Theme	Description from data	Recommendations
Scorion	Scorion caused frustration in teaching staff because of its user-unfriendliness.	<ul style="list-style-type: none"> <li>• A full review of Scorion is recommended</li> </ul>
Educational Principles	Some educational principles could be better integrated into teaching and learning activities	<ul style="list-style-type: none"> <li>• A full review of the educational principles is recommended.</li> </ul>
Programmatic Assessment	Programmatic Assessment causes difficulties for staff and students	<ul style="list-style-type: none"> <li>• A full review of programmatic assessment is recommended.</li> </ul>

#### 4.5.6. MENTOR SURVEY, FOCUS GROUP, INTERVIEW, AND JVAO MENTORING INTERVIEW

A separate analysis on mentoring was conducted. The recommendation was for a full review of the mentor programme. This is available in appendix E.

#### 4.6. SYNTHESIZED RECOMMENDATIONS AND ACTIONS

A total of 65 different recommendations were extracted from the analysis. However, many of these were duplicated.

The following synthesized recommendations have been generated from our data analysis. This means that recommendations from each participant cohort have been evaluated and combined into targeted recommendations for optimizing the teaching and learning experience. Each of these recommendations were prioritized and given a level of feasibility, and owners attributed. **Table 26** provides details of the actions that were conducted in response to these recommendations.

**Table 26** Synthesized recommendations with actions

Theme	Recommendations	Actions
<b>Student learning experiences</b>	Hybrid teaching training should highlight issues with students asking questions and how to improve their communication within the classroom.	The Teaching Assistants are doing a session on how to use the hybrid classroom for students during orientation. A two-pager with practical tips on how to teach in a hybrid classroom has been developed.
<b>Timetable</b>	The use of one channel of communication about the timetable is key. Ensure that all updates are communicated in a timely manner and followed by all teaching staff, provide a clear procedure for it.	The JVITO has researched several technical options on how to implement a standardized timetable. The calendar function within Moodle seems the most feasible option; work is ongoing. Differing preferences between the teaching staff of the three tracks of the programme remains a challenge.
<b>Training</b>	More specifically, the student experience would improve further if CHARM teaching staff and guest lecturers were provided training on how to teach, access and upload material on VLE platforms and how to update the calendar.	A resource has been created by the JVITO about how to work with Teams, Moodle and Scorion for Teaching staff.
<b>Training (Hybrid teaching)</b>	CHARM-EU should consider increasing staffing for technological support to assist module coordinators. By providing additional support, module coordinators can receive the necessary guidance and resources to effectively integrate technology into their modules, ultimately enhancing the overall quality of education.	The Joint Virtual IT Office of CHARM was established at the beginning of 2024. It contains different international teams, one of which is dedicated to the support of CHARM teachers with IT matters. This team is under leadership of JMU.

	WP11 should create a resource on how to use the hybrid classroom for both students and Teaching Assistants.	A new Teaching Assistant guide was developed by Teaching Assistants which includes information on how to facilitate the hybrid classroom.
	Local activities should be expanded.	This finding was presented to all module coordinators in feedback during their phase reviews. They will aim to incorporate this into their teaching.
	A document on the requirements for teaching in the hybrid classroom should be produced	Task group 7.4 have produced a detailed handbook on the requirements for developing and teaching in the hybrid classroom.
	A checklist for teaching staff before they teach in the hybrid classroom should be produced.	Task group 7.4 have produced a one page Teacher Handbook on practical tips for teaching in the hybrid classroom.
	TAs should be more involved in the development of module activities.	TAs were present during the Barcelona Master's Teaching Staff hackathon where input to improvements to the Master's were discussed and actioned.
	TAs and Module Coordinators should be introduced and collaborate on optimizing the hybrid classroom.	The TAs and Module Coordinators now meet weekly to discuss the activities within the hybrid classroom.
<b>Hybrid Classroom issues with audio</b>	Review the microphones in every room and increase the number of microphones available. Efforts to provide microphone in every	The request to check the local audio equipment of the Hybrid Classroom was discussed in the 7.4 task group. The idea of centrally provided headsets for

	<p>table or headsets for each student, especially in rooms where the microphone is in a fixed location away from the students.</p>	<p>each student was discarded due to hygiene- and organizational concerns which administering all those headsets would imply.</p>
	<p>CHARM-EU should consider investing in improving the audio equipment for example in TCD and UU by installing new microphones, and providing noise-canceling headphones for students to enhance the quality of audio during lectures and other educational activities.</p>	<p>The request to check the local audio equipment of the Hybrid Classroom was discussed in the 7.4 task group. The idea of centrally provided headsets for each student was discarded due to hygiene- and organizational concerns which administering all those headsets would imply.</p>
<b>Hybrid Classroom issues with physical space</b>	<p>Provide a second option of a space that students can use when they need to work on different group tasks.</p>	<p>This has been communicated to local teams</p>
	<p>Pod use should be standardized in all locations by creating a Pod guide.</p>	<p>The necessity of pods was discussed with Academic Council and Programme Board and they decided to keep the pods and work on a uniform instruction on how they should be used.</p>
	<p>A cosy corner should be implemented in all locations where possible.</p>	<p>The necessity for a cosy corner was included in the list of minimum requirements for CHARM hybrid classrooms.</p>
<b>VLE issues</b>	<p>Review the need and function of each platform (Scorion, Teams, and Moodle) in the programme.</p>	<p>The necessity of three platforms was discussed in an ad hoc group composed of WP7, WP3 and WP11. The conclusion was that all three platforms have a specific purpose and should not be discarded. A two-pager was developed to explain to Teaching</p>

		Staff how the platforms relate to each other and which platform should be used for what purpose.
	A full review of Scorion is recommended	Scorion will be discarded. A new system, eJournal, will be implemented for C4 Phase 1.
<b>Capstone team matching procedure</b>	A new tool for team matching should be explored.	The Capstone are using software (Masterschallenge) for team matching.
<b>Classroom management</b>	Communication between Module Coordinators, Teaching Staff and Teaching Assistants should be improved.	A weekly meeting is now been held between these individuals.
<b>Educational Principles</b>	A full review of the educational principles is recommended.	See Systematic Review of the Educational Principles Task
<b>General technical infrastructure</b>	CHARM-EU should explore the feasibility of standardizing the technological infrastructure across all institutions. This will help ensure that all institutions have access to the same resources, enabling them to offer high-quality education to their students.	CHARM-EU are exploring the implementation of SRAM to facilitate identity and access management.
<b>Programmatic assessment</b>	A full review of programmatic assessment is recommended.	See review of Programmatic Assessment
<b>Reducing the number of platforms</b>	Review the need and function of each platform (Scorion, Teams, and Moodle) in the programme.	The necessity of three platforms was discussed in an ad hoc group composed of WP7, WP3 and WP11. The conclusion was that all three platforms have a specific purpose and should not be discarded. A two-pager was developed to explain to Teaching

		Staff how the platforms relate to each other and which platform should be used for what purpose.
	Ensure that there is one clear channel of communication for students and staff where all the information can be found easily and it gets updated regularly.	The Moodle environment should be the central platform where all course-related information should be found easily.
<b>Other supports (financial, accommodation &amp; mental health)</b>	Review more financial support mechanisms for students, that correspond to the cost of living in each location.	CHARM-EU bursaries are provided every year (est. 6 students at 500e) to students.  Local supports are now better communicated to eligible students.
	Accommodation support and affordable solutions for Utrecht and Dublin especially are urgently needed.	Dublin now provides dedicated accommodation options for all CHARM-EU students.
	Timely payment of grants	For some institutions the process for paying grants has been optimized and CHARM-EU are exploring the use of Erasmus with Paper (EWP).
	Non-EU support with visa requirements and financial aid.	The UM JVAO created a visa guide which is also part of the CHARM student services guide shared with all students.  Non-EU students are identified and emailed by the JVAO to support them in their visa requirements prior to mobility.

	<p>Ensure that all students know and can register quickly and can access counselling services, disability services and inclusion offices in all locations of CHARM-EU. Make sure there is a point of contact in each location to help students with difficulties in registering and accessing those services.</p>	<p>Students are provided information about the CHARM-EU DEI office during onboarding sessions.</p>
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## 5. EVALUATION OF THE IMPACT

### 5.1. TASK

Deliverable 3.1 of CHARM8 WP3 sought to evaluate the impact of the Master's in Global Challenges for Sustainability on alumni. This report presents an evaluation of the impact of the Master's on the students who completed the first iteration of the Master's (2021-2023). It includes information about the destination of students post Master's, their satisfaction with the programme, and other important aspects of alumni life post graduation.

### 5.2. ESG ALIGNMENT

Alongside the need for this report from a WP3.1 perspective, this evaluation is crucial for aligning with Standards and Guidelines for the Quality Assurance in the European Higher Education Area (ESGs), sections:

- 1.7 *Institutions should ensure that they collect, analyse and use relevant information for the effective management of their programmes and other activities.*
  - *The following are of interest: "Career paths of **graduates**."*
- 1.8 *Institutions should publish information about their activities, including programmes, which is clear, accurate, objective, up-to date and readily accessible.*
  - *Institutions provide information about their activities (...) as well as **graduate** employment information.*
- 1.9 *Institutions should monitor and periodically review their programmes to ensure that they achieve the objectives set for them and respond to the needs of students and society. These reviews should lead to continuous improvement of the programme. Any action planned or taken as a result should be communicated to all those concerned.*

The results of this survey will be shared both as a CHARM8 Deliverable for WP3, and to the CHARM-EU Academic Council where recommendations can be made to improve the Master's programme.

### 5.3. METHODOLOGY

#### 5.3.1. SAMPLE

The first cohort of students graduating from CHARM-EU's Master's in Global Challenges for Sustainability program consisted of 65 students, 50 females and 15 males. Out of the 65 students, 35 belonged to the 20-24 age group, 24 of them were between 25-29 years old, and 6 students were between 30-39 years old, and they came from 15 different countries including Austria, Belgium, England, France, Germany, Hungary, India, Ireland, Italy, Lithuania, Mexico, Netherlands, Poland, Portugal and Spain.

### 5.3.2. SURVEY DESIGN

As part of the impact assessment of the Master's in Global Challenges for Sustainability program, a destination survey was designed in order to shed light on how participation in the CHARM Master's program affected the future possibilities of CHARM graduates. This information can be considered useful for several reasons. First of all, it provides crucial data for future CHARM applicants about the employment and educational opportunities that might be available for them with this degree.

Moreover, important details are revealed about how the intended aims of the program translate into real world job opportunities and further education possibilities, that is, whether the unique educational approach that is at the heart of the CHARM-EU Master's program does in fact train graduates that are in demand. Finally, the acquired pieces of information can be used to modify and improve the Master's program if needed by the Alliance partners.

The compilation of the questionnaire took place in several steps. First of all, the exit or destinations questionnaires of several Alliance partners were reviewed, and questions judged potentially useful for the CHARM questionnaire were extracted from them. Decisions were made about the main sections to be included in the survey; at the design phase, five main sections were judged essential for collecting valuable data without making the questionnaire unnecessarily long. These included:

- 1) Details about the respondent's participation in the CHARM Master's with special emphasis on the track selected for the flexible phase,
- 2) Their employment or study status
- 3) Their satisfaction with the CHARM Master's program,
- 4) Demographic information, and
- 5) Future contact details of the participants.

Care was taken to avoid country-specific details and questions, for occupational categories the ISCO-8 framework was selected while for fields of education the ISCED-8 categories were used in line with international and European standards. Salary levels were also adjusted to make them applicable across all the countries of the Alliance. At this point, we also familiarized ourselves with the Eurograduate project, whose phase 2 pilot started in 2022, and checked their available master questionnaires for further ideas (see: <https://www.eurograduate.eu/about/documents>). The draft version of the questionnaire was then sent out for feedback to the relevant Work Package representatives.

The draft questionnaire was then shared with the Academic Council for comments in October 2023. Following this, a student feedback session was held in November 2023, to gain student insights and initiate potential changes to the questionnaire.

The final survey questions were uploaded into the Qualtrics survey tool.

A final step was to include a Data Protection agreement within the survey which was approved and added.

A version of the survey is available in Appendix G.

### **5.3.3. SURVEY DISSEMINATION**

The survey was disseminated via the CHARM-EU Alumni LinkedIn page on a single posting in December 2023 for a four-week period. Although this was not ideal, due to data protection issues, CHARM-EU were not permitted to contact alumni directly via their non-institutional email. This has been rectified for future cohorts where CHARM-EU has asked students for their permission to contact them after the completion of their Master's.

As such, a limitation of this survey includes the possibility of an alumni not being aware of the survey if they are not a member of the LinkedIn page. However, all efforts were made to gather alumni on this page by multiple postings on social media, and informal discussions with alumni who contacted CHARM-EU after completing their course.

### **5.3.4. SURVEY ANALYSIS**

The survey data was analysed by three researchers (two from TCD and one from ELTE) during January and February 2024 using Microsoft Excel.

## **5.4. RESULTS**

A total of 24 responses were received from the 2021-2023 alumni survey. This indicates a 36% response rate. Of these responses, all but one had at least one question relevant to this report (i.e. one response was blank). Note that not all respondents answered all questions, and as such the aggregate numbers may not add up to the total numbers of respondents.

### **5.4.1. MASTER'S CATEGORY AND DEMOGRAPHIC INFORMATION**

Of the 24 respondents, 50% (n=12) indicated they were female, 20% (n=5) indicated they were male, and the remaining 29% (n=7) did not indicate their gender.

All respondents who stated their birth year were born between the years of 1990 (34 years) and 2000 (24 years).

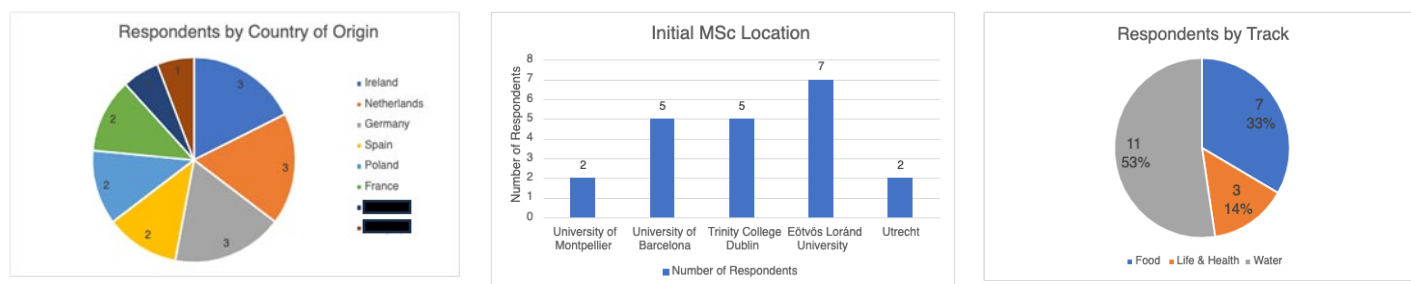
There were no respondents who indicated that they had children under the age of 18.

29% (n=5) had one parent who had completed College or University education, 53% (n=9) reported that both parents had completed College or University education, and 18% (n=3) reported that neither parent had completed College or University education.

Of the alumni who responded, Ireland, Netherlands and Germany were the most common nationalities (n=3 each), followed by Spain, Poland and France (n=2 each) alongside one respondent from two other countries (details redacted for anonymity).

All partner universities were represented in the respondents' initial Master's locations with ELTE being the most common initial location amongst respondents (n=7) and University of Montpellier and University of Utrecht the least represented (n=2).

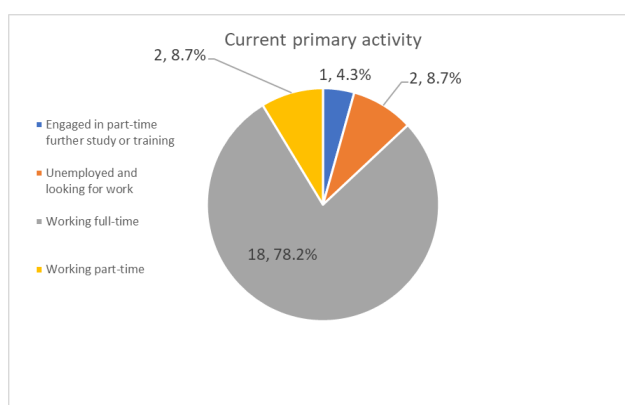
Of the respondents who indicated their chosen track for phase 2, the majority completed the Water track (52.4%), one third studied Food, and the remaining 14.3% completed the Life & Health track.



**Figure 14** Country of origin, initial Master's location and Track for Phase 2

#### 5.4.2. CURRENT EMPLOYMENT OR STUDY STATUS

Most respondents reported being in full (78.2%, n=18) or part-time (8.7%, n=2) employment as their primary activity. One respondent (4.3%) reported being currently unemployed and seeking employment, one indicated they were doing another activity (4.3%) (subsequently described in a comment as seeking employment), and one respondent (4.3%) reported being in part time study<sup>3</sup>. As such, the two respondents currently seeking employment were aggregated.



<sup>3</sup> Note: One student is studying for a PhD and indicated that she was in full time employment, not education. As such, they are included in the full time employment data as they self selected employment rather than education.

**Figure 15** Respondents current primary activity

### 5.4.3. DESCRIPTION OF EMPLOYER

Of those respondents who indicated their primary activity as full or part time employment, 14 respondents provided information on the name of the company they were in full or part time employment.

**Table 27** Name and business type summary of companies worked for by respondents

Company Name	Business Type Summary <sup>4</sup>
Grant Thornton	Professional services focusing on audit, tax, and advisory services.
ECOLEARN	Specializes in sustainability education and training.
Wageningen University	Public research university specializing in life sciences.
Stedin	Manages energy grids and facilitates the energy market.
European Commission	Executive body of the European Union.
EIT Urban Mobility	Initiative focused on improving urban mobility and livability.
Wildlife Justice Commission	International foundation combating wildlife, timber, and fish trafficking.
GreenCycle (PreZero)	Specializes in waste management, sorting, and recycling.
EcoVadis	Provides business sustainability ratings and insights.
Solidança Fundació	Non-profit focused on social and labor inclusion and environmental services.
Education and Training Boards Ireland (ETBI)	Advances education and training in Ireland.
Flynck	Provides call center solutions including outsourced sales and lead generation.
LIMIT Media	Engaged in various activities within the media industry.
Rév8 Zrt.	Focuses on urban development and rehabilitation in Budapest.

<sup>4</sup> This information is provided by the researchers for context based on a web search.

The respondents self-described the industry they felt their employment was in. The majority (26%, n=4) felt their employment was within the category “Other e.g. residential care, social work, creative arts and entertainment, libraries, archives and museums”, 20% (n=3) described it as ‘education’, and all other respondents were a combination of single responses (6%) to ‘Financial, insurance and real estate’, ‘Human health and social work’, ‘Information and communication’, ‘Professional, scientific and technical’, ‘Public administration and defence’, and ‘Transportation and storage’.

#### 5.4.4. DESCRIPTION OF ROLE

13 respondents provided specific titles of their role, which included:

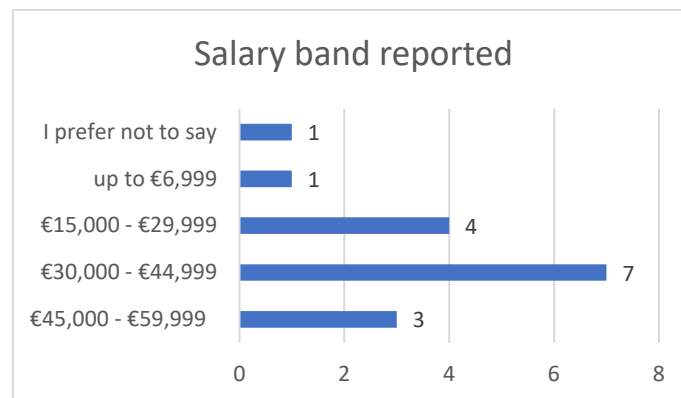
- Sustainability Consultant (x 2)
- Project Manager / Coordinator (x 3)
- Junior Professional Circular Systems
- Environmental and Social Coordinator
- Director
- Policy and Economics Assistant
- Targeted Projects Officer
- Junior Fundraising Officer
- Customer Success Coordinator
- HR Administrator

Alumni were asked to indicate their occupation using the ISCO-08 list. The majority indicated that there were Professionals (60%, n=9), followed by Managers (27%, n=4), one respondent selected Clerical Support (7%), and one as a Service and Sales Workers (7%).

The majority of respondents had a permanent or open-ended contract (56%, n=9), with lesser numbers in fixed term contracts lasting 12 months or longer (31%, n=5). One respondent was in a temporary role, and one in a fixed term contract lasting less than 12 months.

Two respondents (13%) noted that they were ‘self employed/freelance/starting their own business’, and 13 (86%) described themselves as an employee.

61% (n=10) of respondents noted that they were earning a salary from €30,000 to €59,000, with 25% (n=4) earning from €15,000 to €29,000. One respondent was earning up to €6,999.



**Figure 16** Salary band indicated by respondents in current employment

#### 5.4.5. LOCATION OF EMPLOYMENT

Respondents were asked where they were currently located for their employment, and how this may have been impacted by their CHARM-EU mobility. 57% (n=8) are currently working in their country of origin, 29% (n=4) are working in a country they were located in for a phase of the Master's, 7% (n=1) in a country they were living in prior to studying with CHARM-EU, and 7% (n=1) in a country they have not lived in before.

#### 5.4.6. MOBILITY EXPERIENCE AND EMPLOYMENT

Four respondents noted that CHARM-EU mobility helped them gain employment. In further comments, two respondents described how their Capstone project facilitated gaining their employment, and one respondent noted that CHARM-EU mobility helped with "Expanding networks and getting to know professional options."

#### 5.4.7. MASTER'S INFLUENCE ON CURRENT ROLE.

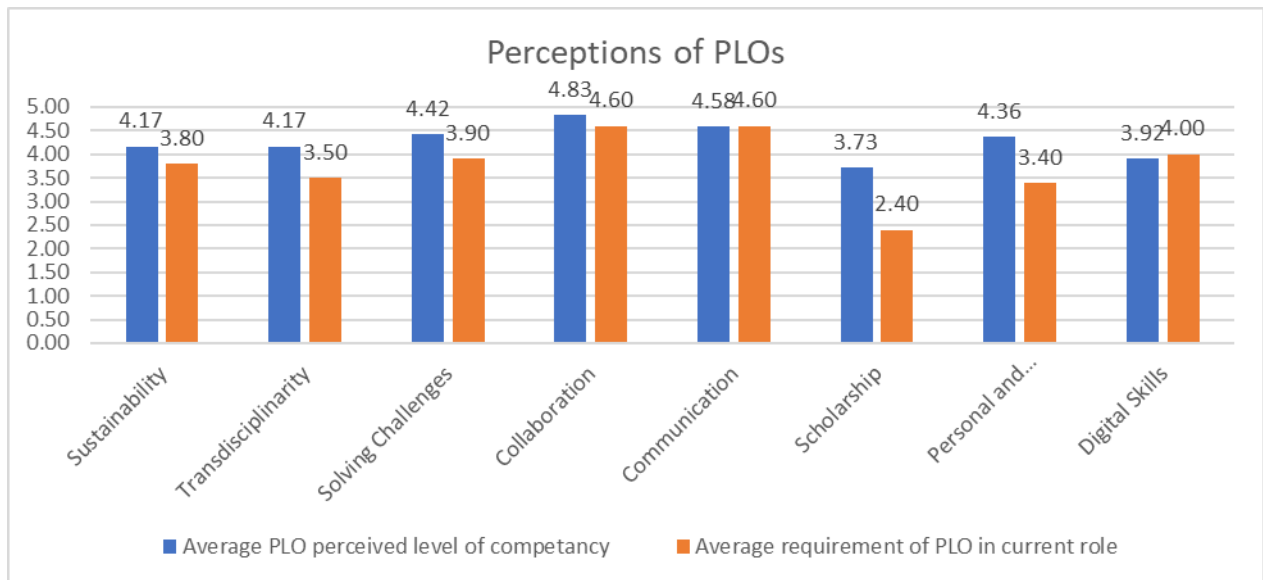
The majority of respondents (56%, n=9) felt that the Master's qualification gave them an advantage to their current role, 19% (n=3) indicated that it was a formal requirement, and three (19%) noted that it was not a formal requirement.

Respondents were asked to rate the relevance of the Master's to their current role, from Very Irrelevant (0) to Very Relevant (5). Almost half (n=8) responded that the Master's was relevant to their current role, 25% felt it was neither relevant or irrelevant (n=4), and four responded that the Master's was not relevant to their current role.

#### 5.4.8. PLO ALIGNMENT WITH CURRENT ROLE

Respondents were asked to indicate the level of requirement of each PLO within their role, and their perceived confidence of each PLO. On average, respondents felt that the Collaboration and Communication PLOs were the highest requirement in their current role, with Scholarship being the least required. Communication and Collaboration were the two highest perceived level of

competencies, followed by Solving Challenges. Respondents felt that they had a higher level of competency than what was required in their role for all PLOs except for Communication and Digital Skills where there was a 0.02 and a 0.08 discrepancy between their perceived level and the level required respectively.



**Figure 17** Perceptions of PLOs

#### 5.4.8.1. RESPONDENTS WHO INDICATED THEY WERE CURRENTLY IN FULL OR PART-TIME STUDY

One respondent reported to be currently undertaking part-time study in a location that they attended during the Master's. This respondent also reported working part-time alongside this. They described that CHARM-EU mobility influenced their current location due to personal connections that they gained during the mobility. This respondent felt that they had high perceived level of competency across all PLOs, however two PLOs were not particularly relevant to their current part time role (Sustainability and Transdisciplinarity).

#### 5.4.8.2. RESPONDENTS WHO INDICATED THEY WERE UNEMPLOYED, LOOKING FOR WORK, OR ENGAGED IN ANOTHER ACTIVITY

Two respondents indicated that they were currently unemployed, one has not been employed since graduating from the Master's, and the other had been employed but is currently seeking employment.

One respondent reported to be unemployed but currently seeking employment. This respondent detailed that on graduating from the Master's, they already had a job; however, they have now resigned from this to seek employment in the EU. However, this individual has faced cultural and structural barriers to employment. They also noted that they had a high perceived competency across all PLOs.

The other respondent who is currently unemployed indicated that they have not been employed since finishing the Master's and have been looking for a job from that time. No further information was provided on their current situation.

#### 5.4.9. PROGRAMME SATISFACTION

The majority (82.4%) of respondents reported they would be either extremely or somewhat likely to study the same course again.

Respondents were then asked a series of questions related to the content and structure of the Master's related to employability.

##### What could be included in the Master's to enhance employability?

In the survey, respondents were asked to reflect on what could have been included in the Master's to enhance their employability. The following themes were extracted from the open-ended question.

- **Technical Skills:** Respondents expressed a desire for more technical skills for the workplace like Excel, R, Python, statistics, and data analysis.
- **Sustainability knowledge related to the workplace:** Some noted the need for more technical sustainability knowledge, such as corporate sustainability and regulations, or conversely, more practical sustainability knowledge (i.e. outside of theories and frameworks).
- **Internships and practical experience:** Students saw internships, real-life examples, and concrete projects (organizing events or conferences) could have been included in the Master to enhance employability.
- **Policymaking:** Multiple students noted that they would have liked more knowledge of policymaking and EU policy.
- **Career planning:** Students emphasized the need for more concrete career plans, specialization options, and information about job opportunities.
- **Networking and employer interaction:** Students expressed requests for additional talks with potential future employers, better stakeholder connections, and engagement with employers from different sectors.

##### 5.4.9.1. WHAT ASPECTS OF THE COURSE MOST ENHANCED YOUR EMPLOYABILITY?

In the survey, respondents were asked what aspects of their course most enhanced their employability. The following themes were extracted from the open-ended question.

- **Transdisciplinary skills:** Students valued transdisciplinary collaboration and exposure to challenges from multiple disciplinary perspectives as enhancing their employability.
- **Collaboration and group work:** Multiple students noted how international and transdisciplinary group work enhanced their employability.
- **Flexibility and adaptation:** The flexibility of the course content, challenge selection and development, and group work enhanced their adaptability and employability.

- **Personal development:** Two students noted how working on their Personal Development Plans (PDPs) and professional development enhanced their employability.
- **International experience:** Exposure to international perspectives and experiences, including the opportunity to work with people from different cultural backgrounds, was considered a major enhancement to their employability.
- **Specificity:** Multiple students noted specific tracks within Phase 2 and challenges/projects they worked on as enhancing their employability.
- **Sustainability perspectives:** Knowledge of sustainability science and disciplines was noted as enhancing employability.

#### 5.4.9.2. PERCEPTIONS OF MASTER'S BEING OFFERED BY A EUROPEAN UNIVERSITIES ALLIANCE

The respondents were asked to reflect on their and their employers' perceptions of the Master's being offered by a European University Alliance.

**Do you see the Master's being offered by a European University Alliance as a benefit or drawback? Why?**

The respondents were asked whether the Master's being offered by a European University Alliance was considered a benefit or a drawback. The following themes were extracted from the open-ended question.

- **Benefits:** Most students viewed the Master's as an alliance offering positively. Benefits described included international experience, preparation for working in an intercultural environment, expanded networks, greater opportunities due to involvement of multiple universities, recognition from five universities, and increased cultural interaction. Two students highlighted how the teaching staff and development of the Master's from multiple universities was perceived as a positive.
- **Drawbacks:** The mobility aspect was considered both a benefit and a potential drawback, with some students noting the strain on mental health during frequent relocations.

**During your discussions with employers, or universities you are studying in, what were their perceptions of a degree offered by a European Universities Alliance?**

The respondents were asked what they felt were the perceptions from employers that the Master's was offered by a European University Alliance.

- **Positive perception from employers:** Respondents indicated that employers used the following terms to describe the Master's: "interested", "curious", "fantastic", and "progressive".
- **Multicultural experience:** Respondents indicated that employers were very positive about how the Master's was across multiple countries and backgrounds.
- **Enhances employability:** Multiple respondents perceived that it was positive for employability. For example, as text on their C.V., as a discussion point during job interviews,

- **Recognition and Awareness:** Some respondents mentioned that the degree's recognition varied among employers, with some expressing uncertainty or lack of awareness about the European Universities Alliance system.

## 5.5. DISCUSSION

The following key discussion points have arisen from this research:

- The majority of Master's alumni were satisfied about their experience of the Master's and are currently in employment.
- The majority of roles they are currently employed in are within organizations related to sustainability or are doing a sustainability role within an organization.
- Respondents have a high level of perceived competency with CHARM-EU Master's PLOs.
- Most PLOs were perceived as important for their employment, with collaboration and cooperation being regarded as the most important.
- The majority of respondents felt that the delivery of the Master's from an alliance was positive both from their perspective, and the perspective of employers.

## 6. INCLUSION OF EUROPEAN CITIZENSHIP AND GLOBAL, DIVERSE PERSPECTIVES, CULTURAL EXPERIENCES IN EXISTING MODULES

### 6.1. TASK AIM

As part of WP3.1 “Evaluation of the Master’s in Global Challenges for Sustainability” a sub-task originated from text in the CHARM8 proposal

*“Inclusion of European Citizenship and Global, Diverse perspectives, cultural experiences in existing modules”*

This task included:

- Investigate the presence and absence of these themes in existing modules
- Explore integration activities in European Citizenship into existing modules
- Explore integration activities of local, European, and global diverse perspectives into existing modules
- Explore integration activities of cultural experiences into existing modules
- Align new themes with current educational principles
- Creation of resources in conjunction with Educationalists for Professional Development and module development

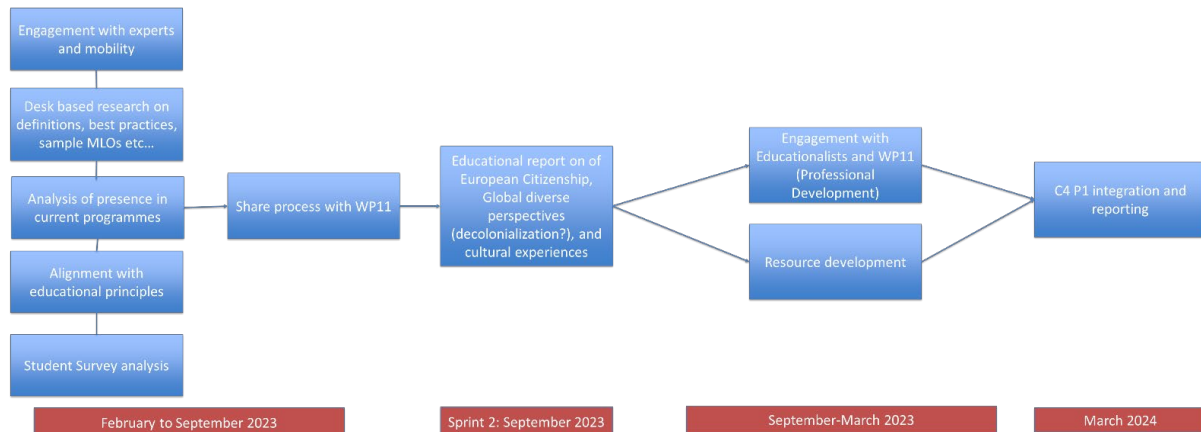
### 6.2. METHODOLOGY

To explore how these three themes could be integrated in the Masters, the following methodology was implemented.

First, an exploration and definition of these themes was conducted by engaging with experts in these themes, desk based research on defining the themes, collation of best practices from CHARM and externally, and collation of sample module learning objects.

In addition, analysis of the presence or absence of these themes within the current Master’s program to inform recommendations at a phase level was conducted. To ensure pedagogical alignment, the new themes will be explored in terms of the CHARM-EU educational principles. Results from student phase review surveys were also analyzed where relevant.

Following the development of the initial ‘Educational Report’ documenting these findings, the report was shared with Educationalists and WP11 (Professional Development), and actions were developed.



**Figure 18** Process of Inclusion of European Citizenship and Global, Diverse perspectives, cultural experiences in existing modules

The following are key task outputs for this WP:

- Educational Report on European Citizenship, Global, Diverse Perspectives and Cultural Experiences (September 2023)
- Resources on European Citizenship and Global, Diverse perspectives, cultural experiences (March 2024)
- Final report for D3.1 “A revised curriculum design for the Master’s in Global Challenges for Sustainability” (December 2024)

### 6.3. INTEGRATION IN CURRENT CHARM-EU TEACHING

To inform the first aim “Investigate the presence and absence of these themes in existing modules” a preliminary investigation of their presence within the bedrock of the CHARM-EU educational experience and the Master’s itself was necessary. Three sources were analysed:

1. The CHARM-EU educational principles text
2. The Master’s in Global Challenges for Sustainability Programme Learning Objectives
3. The Master’s in Global Challenges for Sustainability Module Learning Outcomes

This will inform future module development and professional development opportunities. The following sections describe the analysis of these three sources.

#### 6.3.1. EDUCATIONAL PRINCIPLES ALIGNMENT

The CHARM-EU educational principles were used to investigate whether European Citizenship, Global Diverse Perspectives and Cultural Experiences were included in their text. Appendix F provides the text for the educational principles. Two types of analysis were conducted, explicit mentions and implicit mentions.

### 6.3.1.1. EXPLICIT

In the educational principles, the three themes were explicitly mentioned in the following locations (i.e. the word or part of the word was used in the description of the educational principles).

**Table 28** Explicit mention of themes in educational principles

	European Citizenship	Global perspectives	diverse	Cultural experiences
Challenge-driven		x		
Research-led, research-based				
Sustainability				
Technology-enhanced				
Student-centred				
Situated learning				
Transversal skills	x	x		
Transdisciplinarity		x		
Transnational and intercultural learning				x
Inclusivity				

### 6.3.1.2. IMPLICIT

In addition to exploring the explicit mention of new themes, an implicit analysis was also conducted. This means that if a thematic area is mentioned in the educational principles, that relates to the new themes, an alignment was noted. For example, mobility could be linked to cultural experiences.

**Table 29** Implicit mention of new themes in educational principles

	European Citizenship	Global perspectives	diverse	Cultural experiences
Challenge-driven		x		x
Research-led, research-based				
Sustainability		x		
Technology-enhanced				
Student-centred				x
Situated learning		x		x
Transversal skills	x	x		x
Transdisciplinarity	x	x		x
Transnational and intercultural learning	x	x		x
Inclusivity		x		

### 6.3.1.3. KEY FINDINGS

Explicit mentions of the new themes are few in the educational principles, for example, European citizenship is never mentioned, but global citizenship is. Cultural experiences are also only mentioned once.

However, implicitly, many of the educational principles refer to these themes within their description. For example, cultural experiences and global diverse perspectives could be encompassed within many of the educational principles including inclusivity. European citizenship less so, but could be included within transdisciplinarity and transnational and intercultural learning.

### 6.3.1.4. POSSIBLE RECOMMENDATIONS

- If these three new themes are to be added to the Master's, their terms could be explicitly mentioned in the educational principles as they are defined in the proposal. This would mean updating the educational principles or noting the implicit nature of their integration. This would benefit the visibility of these themes for students and staff members.

- When planning module design, the themes should be incorporated into elements which refer to their related educational principles.

#### 6.4. INTEGRATION INTO PROGRAMME LEARNING OBJECTIVES AND DOMAINS

The Programme Learning Outcomes (PLOs) describe the profile of a CHARM EU Master’s graduate. At the end of the Master’s programme the student has to meet these outcomes to be awarded the Master’s. Since these PLOs are complex and consist of multiple components (including skills, knowledge and competencies, and graduate attributes), it is challenging for assessment (e.g., PLO 1 is about solving challenges, transdisciplinarity, and sustainability knowledge). Therefore, for a simple, reliable and logical understanding and measurement of the PLOs, the PLOs were categorized in eight domains “PLO Domains”. Assessing the PLO domains means that all PLOs are covered. The PLO domains are used for mapping assessments in the curriculum and for visualizing the student’s long-term development across all module assessments.

The text of the three new themes was explored in the PLO domains and their indicators.

A similar analysis was conducted using the PLO domains and their indicators with both implicit (grey) and explicit (black) mentions indicated in **Table 30**.

**Table 30** Implicit and explicit mentions of three new themes in the PLO indicators

PLO Domain	European Citizenship	Global diverse perspectives	Cultural experiences
<b>Sustainability</b>			
1. Critically analyses and evaluates the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors (PLO1)			
2. Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages <sup>1</sup> .			
<b>Transdisciplinarity</b>			
1. Formulates an advanced understanding of transdisciplinary practice, knowledge and epistemologies (PLO5)			
2. Reflects upon and integrates multiple disciplinary and transdisciplinary perspectives, to understand the relevant	x		

PLO Domain	European Citizenship	Global diverse perspectives	Cultural experiences
ethical issues and the role of active citizenship, in particular within a European context (PLO1, PLO3)			
3. Prepares, executes and evaluates a transdisciplinary (research) project (PLO3)			
<b>Solving challenges (PLO1, PLO2, PLO6, PLO7)</b>			
1. Analyses, investigates and evaluates complex societal challenges (PLO2)			
2. Explains how sustainability challenges are caused, dealt with and addressed by various stakeholders (PLO1)			
3. Uses a range of methodologies and theoretical frameworks to appraise the complexity of and solve societal challenges (PLO2)			
4. Interprets and connects complex challenges to diverse stakeholder, disciplinary and intercultural perspectives that encompass global and European citizenship (PLO6)	x	x	
5. Identifies, selects and devises robust, adaptable, ethical solutions, using intercultural perspectives (including gender) (PLO2)		x	
6. Acquires advanced competency of problem solving, creative thinking, entrepreneurialism and innovation (PLO7)			
<b>Collaboration (PLO2, PLO5, PLO6, PLO7)</b>			
1. Demonstrates expertise in the collaborative and facilitative skills to support their practice as a transdisciplinary team member (team work) (PLO5, PLO7)			
2. Collaborates with relevant stakeholders e.g., colleagues, peers, experts, professionals, clients and other external stakeholders (PLO2, PLO5)			

PLO Domain	European Citizenship	Global diverse perspectives	Cultural experiences
3. Demonstrates inclusivity and (inter)cultural competence in teamwork (PLO2, PLO6)			
<b>Communication (PLO5, PLO6, PLO7)</b>			
1. Demonstrates expertise in the communicative skills to support their practice (PLO5)			
2. Communicates effectively with diverse stakeholders, e.g., clients, colleagues, peers, other relevant stakeholders and the public (PLO5, PLO6, PLO7)			
3. Communicates effectively on complex issues that aim for behavioural change (PLO6)			
<b>Scholarship (PLO3)</b>			
1. Understands and critically evaluates research and literature and other data sources <sup>2</sup>			
2. Rigorously assesses, designs and integrates different disciplinary and transdisciplinary research methodologies (PLO3)			
3. Connects research questions, data and findings to their challenges (PLO3)			
<b>Professional and personal development (PLO5, PLO7)</b>			
1. Demonstrates reflexive skills (PLO5)			
2. Shows skills fostering lifelong learning (PLO7) (e.g., career development, self-management, feedback literacy)			
<b>Digital skills (PLO4, PLO6, PLO7)</b>			
1. Demonstrates expertise in the identification and application of the latest technological tools (PLO4)			
2. Analyses, handles, uses and communicates complex bodies of data ethically (data management, modelling and visualization) (PLO4)			

PLO Domain	European Citizenship	Global diverse perspectives	Cultural experiences
3. Demonstrates digital skills (PLO7)			
4. Identifies and critically interprets different types of media and information (media and information literacy) <sup>3</sup>			
5. Utilises a broad range of appropriate communication tools and digital technologies to create materials for dissemination and communication (PLO4, PLO6)			

#### 6.4.1. KEY FINDINGS

Similar to the previous analysis of Educational Principles, there were few explicit mentions of the three themes in the PLOs, but implicitly they were apparent across many PLOs.

#### 6.4.2. RECOMMENDATIONS

- During the module and assessment design process, the new themes should be explicitly included in the text of the PLO domains to allow for teaching staff to incorporate them into their design and as a means of assessment.
- The PLO domains that refer to the new themes should be extracted and focused upon when designing learning activities related to the new themes.

For example, when integrating Global Diverse Perspectives, the following PLO domains could be used to scaffold educational experiences related to this theme.

- Critically analyses and evaluates the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors (PLO1)
- Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages.
- Explains how sustainability challenges are caused, dealt with and addressed by various stakeholders (PLO1)
- Interprets and connects complex challenges to diverse stakeholder, disciplinary and intercultural perspectives that encompass global and European citizenship (PLO6)
- Identifies, selects and devises robust, adaptable, ethical solutions, using intercultural perspectives (including gender) (PLO2)
- Collaborates with relevant stakeholders e.g., colleagues, peers, experts, professionals, clients and other external stakeholders (PLO2, PLO5)
- Demonstrates inclusivity and (inter)cultural competence in teamwork (PLO2, PLO6)
- Communicates effectively with diverse stakeholders, e.g., clients, colleagues, peers, other relevant stakeholders and the public (PLO5, PLO6, PLO7)

## 6.5. MODULE LEARNING OBJECTIVE ALIGNMENT

Within the Master's in Global Challenges for Sustainability, each of the PLOs was linked to a Module Learning Objective (MLO). Analyzing the presence of the three themes in the MLOs of the Master's would inform future development by:

- Investigating which modules currently are using these themes in their teaching. These could be used as best practices.
- Investigating which modules use these themes to a lesser extent. These modules could be supported in introducing them.

### 6.5.1. KEY FINDINGS

#### European Citizenship

European citizenship was not explicitly mentioned in any of the MLOs for the current Master's.

#### Cultural experiences

Although cultural experiences were not commonly mentioned, MLOs related to culture, were common and included the following:

**Table 31** Inclusion of culture / cultural experiences in existing MLOs

Module	MLO
Social Innovation	MLO 1.3: Develop skills to work sensitively and professionally as peers and team members, demonstrating both empathy and leadership in the management and integration of diverse intercultural, interpersonal, intersocietal and inter/trans-disciplinary communication. [PLO.2, PLO.5, PLO.6]
Social Innovation	MLO 1.6: Understand different methods for mobilising political, social and business action for sustainability transitions, drawing critically on knowledge and theories around societal changes and transformations from different sustainability perspectives, including gender, intercultural and religious ones [PLO.1, PLO.2]
Social Innovation	MLO 1.8: Identify and critically appraise the many ways in which (understandings of) sustainability issues and their consequences involve matters of socio-cultural identity construction and politics (including gender, ethnicity, religion, education, geo-politics and

Module	MLO
	generations) and consider these matters when designing for and assessing methods for social action. [PLO. 1, PLO.2, PLO.4]
Sustainability	MLO 2.1: Operationalise and critically discuss the concepts of sustainability and sustainable development from different cultural, historical, inter- and transdisciplinary perspectives. [PLO1]
Sustainability	MLO 2.10: Acquire a systems and sustainability ethics perspective to study and address complex sustainability challenges, with appreciation for cross-sectoral and intercultural dynamics. [PLO5]
Food Systems And Their Transformations	MLO 11.7: Differentiate between the different cultural, political and (inter)disciplinary framings of food systems and food-related sustainability...
Water 1	MLO 4.2: Identify both the impacted communities as well as various stakeholders and understand their social- cultural contexts, motivations...
Health Systems And Policies	MLO 7.3: Recognise the social, economic and cultural context and requirements of health policy-making processes as well as “health in all policies”. (PLO 3)
Healthy Lives And Wellbeing	MLO 9.2: Identify and analyse social, economic, cultural and environmental determinants of health and health inequalities. [PLO.1]
Healthy Lives And Wellbeing	MLO 9.7: Analyse health status trends (e.g. life expectancy, avoidable mortality, etc.) and key public health issues (e.g., obesity, addictions, etc.) – under varying social, economic, and cultural dimensions. [PLO.1, PLO.3]
Capstone	MLO 13.8. Outline different disciplinary approaches, intercultural perspectives, and their interrelationships to identify (e.g. social, cultural, political, economic) actors involved in and affected by the challenge. [PLO.1, 2, 3, 5]

This suggests that cultural experiences could be easily integrated into these MLOs if they have not been done already.

For those modules that have not addressed culture or cultural experience, this is an opportunity to integrate them more fully. In particular, Transdisciplinary Research Methods could be a good pilot for this.

### Global diverse perspectives

Keywords such as global and perspectives were examined in the MLOs and appeared commonly throughout the different modules.

**Table 32** Inclusion of global diverse perspectives in existing MLOs

Module	MLO
Water 1	MLO 4.4: Identify complex challenges in extremes or natural hazards from a combination of different disciplinary and global perspectives...
Social Innovation	MLO 1.6: Understand different methods for mobilising political, social and business action for sustainability transitions, drawing critically on knowledge and theories around societal changes and transformations from different sustainability perspectives, including gender, intercultural and religious ones [PLO.1, PLO.2]
Sustainability	MLO 2.1: Operationalise and critically discuss the concepts of sustainability and sustainable development from different cultural, historical, inter- and transdisciplinary perspectives. [PLO1]
Sustainability	MLO 2.3: Capture the complex interlinkages between different sustainability challenges from social, economic, environmental, (geo)political, legal and developmental perspectives. [PLO1, 2]
Sustainability	MLO 2.10: Acquire a systems and sustainability ethics perspective to study and address complex sustainability challenges, with appreciation for cross-sectoral and intercultural dynamics. [PLO5]
Water 1	MLO 4.4: Identify complex challenges in extremes or natural hazards from a combination of different disciplinary and global perspectives...
Health Systems And Policies	MLO 7.1: Demonstrate an understanding of health outcomes and health system performance from multiple stakeholders' perspectives ...
Healthy Lives And Wellbeing	MLO 9.1: Explain the most important concepts and theories of the study subject from a biological and medical perspectives. [PLO.3]

Healthy Lives And Wellbeing	MLO 9.6: Explain different perspectives regarding sustainability in life and health and apply sustainable practices for healthy lifestyles and health promoting living- and working environments. [PLO.1]
Capstone	MLO 13.7. Describe and critically appraise a real-world sustainability challenge from various disciplinary perspectives to determine and frame the challenge. [PLO.2, 3, 5]
Capstone	MLO 13.8. Outline different disciplinary approaches, intercultural perspectives, and their interrelationships to identify (e.g. social, cultural, political, economic) actors involved in and affected by the challenge. [PLO.1, 2, 3, 5]
Capstone	MLO 13.10. Articulate and develop sustainable and ethical solution prototypes to a complex societal challenge, as part of a transdisciplinary team, while considering the needs and perspectives of multiple stakeholders and disciplines [PLO.1, 2, 3, 5, 6]
Capstone	MLO 13.14. Implement, monitor and critically evaluate the solution for the identified challenge, using appropriate (technological) tools and combining various disciplinary perspectives. [PLO.3, 4, 6]

This also suggests that integrating Global Diverse Perspectives could be easily integrated in modules that already have MLOs mentioning this in them. Similar to the previous analysis, Transdisciplinary Research Methods does not mention this theme.

### 6.5.2. POSSIBLE RECOMMENDATIONS

- Transdisciplinary Research Methods appears to have less integration of both cultural experiences and global diverse perspectives in its MLOs. As a pilot exercise, integrating the new themes into this module could be beneficial.
- European Citizenship is a theme that is not currently integrated in any way into the Master's. Work should be done on exploring how the modules could integrate this.

## 6.6. DESK BASED RESEARCH ON THEMES

Following the initial exploration of the themes with CHARM-EU teaching, a desk based research report was produced for each theme. These reports focused on:

- **Background and definitions:** How each theme should or could be defined
- **Key research based aspects of the theme:** Further exploration of key aspects of the theme that would be appropriate to include into teaching and learning.
- **Practical applications of thematic aspects:** Provision of sample practical activities that related to the thematic aspects

- **Sample Module Learning Outcomes:** A list of potential module learning outcomes.

The content of these reports provide a scaffold for further integration of the themes into CHARM-EU teaching and learning.

In addition to the desk based research activities, experts within each of the three themes were consulted from our partner universities.

### 6.6.1. EUROPEAN CITIZENSHIP

In the 21st century, European citizenship has become increasingly relevant due to the globalization and interconnectedness of European countries. European citizenship is, in its basis, a legal status granted equally to all European Union Member States nationals, that grants citizens the right to live, work, and study in any EU member state. It is important to note that European citizenship encompasses more than just a legal status, as it is a broader concept that includes values such as democracy, human rights, and social justice. Thus, it is important to integrate this broader concept into the CHARM-EU Master's in Global Challenges for Sustainability.

To this end, this report will examine the relevant literature on European citizenship and explore research-based approaches to facilitate its incorporation into teaching for *sustainability*, in particular.

#### 6.6.1.1. BACKGROUND AND DEFINITIONS

European citizenship is a multifaceted concept and many definitions exist in the literature, focusing on different aspects of this concept.

##### **Classical sense of citizenship**

The establishment of "European citizenship" through the Maastricht Treaty in 1993 guaranteed EU citizens the right to non-discrimination and free movement across member states, as well as the ability to elect representatives to the EU parliament and other related rights. According to Gyeny (2020), this legal aspect of European citizenship contributes to the consolidation of the EU as an autonomous political and constitutional order, making it a *classic interpretation* of the term *citizenship*.

##### **The "green" citizenship: towards an interpretation of European Citizenship for Teaching Sustainability**

"Green" citizenship refers to the active and engaged participation of environmentally conscious citizens in addressing issues related to the environment and sustainability. This type of citizenship has been conceptualized in theoretical models and practical implications, as noted by Machin and Tan (2022). According to Dobson and Valencia Saiz (2005), "green" citizenship involves more than just applying traditional notions of citizenship to environmental issues; rather, it necessitates a

fundamental reimagining of the very concept of citizenship, putting into sharp focus the idea of *active participation*.

This shift towards an active model of citizenship acknowledges that along with rights come concomitant duties and virtues. Machin and Tan (2022) note that this has led to a call for a more radical overhaul of the way in which citizenship is viewed, allocated, and practised. They identify four intersecting components of "green" citizenship: *rights, duties, virtues, and practices*, which can each be understood and prioritized in different ways. The aim of "green" citizenship is to create a more sustainable and environmentally friendly society through the collective efforts of citizens.

This movement towards a "green citizenship" aligns with the aims and objectives of the CHARM-EU Master's in Global Challenges for Sustainability and it is this "green" aspect of European citizenship that we recommend the Master's will foster.

#### **6.6.1.2. KEY RESEARCH-BASED ASPECTS FOR EUROPEAN CITIZENSHIP AND TEACHING FOR SUSTAINABILITY**

In this section we will explore key research-based aspects of European Citizenship and Teaching for Sustainability, which aim to equip learners with the knowledge, skills, and values needed to address environmental, social, and economic challenges in a holistic and integrated manner.

Firstly, it is important to recognize the interconnected and interdependent nature of the three dimensions of sustainable development: *economic, social, and environmental*. As the United Nations Environment Programme highlights, sustainable development should be approached in a comprehensive and balanced manner that considers all three dimensions. Therefore, teaching for sustainability should integrate content from ecological science with social and economic perspectives, in order to promote a *holistic understanding of sustainability that recognizes the interconnections between these dimensions*.

Secondly, when designing teaching strategies for sustainability, it is important to also recognize those three dimensions. While the environmental pillar has historically received the most attention, there is a growing recognition of the need to address social justice issues in sustainability education. Education for Sustainability must therefore take a more democratic approach to societal change, emphasizing the knowledge and skills required to address social justice issues both locally and globally.

In recognising the critical value of the social dimension, the role of citizens in driving the transition towards sustainability cannot be overstated. As Machin and Tan (2022) note, citizens have a crucial role to play in adopting sustainable consumption habits, changing their lifestyles and behavior, and actively participating in policymaking. Therefore, teaching strategies for European citizenship and sustainability should promote active citizenship, encouraging students to become engaged and environmentally conscious citizens who are committed to promoting sustainable practices and policies. This also means mixing ecological science content with interdisciplinary or multidisciplinary collaborative work with social and economic content.

The suggested approach should highlight several key aspects that are crucial for understanding the relationship between European citizenship and sustainability.

- Firstly, define the concept of European citizenship and explain its relevance to sustainability.
- Secondly, examine the interplay between citizenship and dimensions of sustainability, demonstrating how sustainable practices can be integrated into European citizenship.
- Thirdly, use case studies to illustrate the real-life impact of sustainable practices and how citizens can take an active role in promoting sustainability.
- Finally, it is key to promote critical thinking skills and encourage students to analyze the effectiveness of policies and initiatives on a global and local level.

However, it is also important to ensure that the teaching is relevant to both Non-EU and EU students, and that the discussions are inclusive to students from all nationalities.

### **6.6.1.3. PRACTICAL APPLICATIONS**

Key aspects mentioned above have been translated into possible practical applications within the Master's and some suggested activities have been proposed.

**Table 33** Suggested practical applications of European Citizenship in the Master's

Key aspect	Aim	Practical Application and Activity Suggestions
Definitions of European Citizenship	Define and explain the concept of <i>European citizenship</i> and its relevance to sustainability	<ul style="list-style-type: none"> <li>• <b>Concept Mapping:</b> Have students create a concept map that illustrates the relationship between European citizenship and sustainability. This activity will encourage students to think critically about the concept of European citizenship, its definition, and how it relates to sustainability.</li> </ul>
Interplay between Citizenship and Dimensions of Sustainability	<p>Discuss the various rights and responsibilities that come with <i>European citizenship</i>, including the promotion of sustainable development.</p> <p>Analyze the <i>impact of globalization on citizenship and sustainability</i> and explore the notions of European identity and transnational citizenship.</p>	<ul style="list-style-type: none"> <li>• <b>Debate:</b> Divide the class into groups and assign each group a specific right or responsibility that comes with European citizenship. Have each group research and prepare arguments for and against their assigned topic, then hold a debate in class. This activity will encourage students to think critically about the different rights and responsibilities associated with European citizenship and how they relate to sustainability.</li> <li>• <b>Citizenship Education Across Borders:</b> This activity will enable students to understand how citizenship education is applied nationally, cross-nationally, and globally. Students will research and compare the approaches to citizenship education in different countries, focusing on the similarities and differences. They will also consider the implications of global citizenship education and its potential impact on sustainability.</li> </ul>
Case Studies and active "green" citizenship	Use <i>case studies from different European</i> countries to illustrate sustainable practices in various contexts.	<ul style="list-style-type: none"> <li>• <b>Case Study Analysis:</b> Assign students different case studies from various European countries that illustrate sustainable practices in different contexts. Have them analyze the case study and identify the role of the community and citizens in these practices. This activity will encourage students to think critically about the ways in which citizens can promote sustainable practices and policies.</li> </ul>

Key aspect	Aim	Practical Application and Activity Suggestions
	Explore the role of the community and citizens in these practices.	<ul style="list-style-type: none"> <li>• Divide the students into small groups and assign each group a different European country. Ask each group to research and gather information on sustainable practices implemented in their assigned country. They should focus on areas such as energy, waste management, transportation, agriculture, and urban planning. Each group should prepare a presentation summarizing the sustainable practices and their impact on the environment and society and also discuss the role of the community and citizens in implementing and promoting these practices.</li> </ul>
Critical thinking and the role of citizens on policies and initiatives (global and local level)	Encourage <i>critical thinking</i> by analyzing the effectiveness of current policies and initiatives for promoting sustainability and proposing new ideas	<ul style="list-style-type: none"> <li>• Policy Analysis: Assign students to research current policies and initiatives for promoting sustainability inside and outside Europe. Have them critically analyze the effectiveness of these policies and initiatives and propose new ideas. This activity will encourage students to think critically about the ways in which policies can be improved to promote sustainability.</li> <li>• Proposal for Sustainable Policy Reform in Europe: Divide students into small groups. Assign each group to research a specific sustainability policy or initiative in a European country. Examples of policies could include renewable energy targets, waste management strategies, sustainable transportation policies, and green building codes. Have each group critically analyze the effectiveness of the policy or initiative they researched.</li> </ul>

#### 6.6.1.4. SAMPLE MODULE LEARNING OUTCOMES (MLOs)

Considering the analysis, below are some sample learning outcomes that may help support the further development of European Citizenship in the Master's.

At the end of the module, you should be able to:

- Demonstrate an understanding of the concept of European citizenship and its relevance to sustainability
- Define the concept of citizenship (in general and in the European context).
- Explain the rights and responsibilities that come with citizenship.
- Discuss the concept of European citizenship and how it differs from national citizenship.
- Illustrate different scenarios where one can exercise their rights and fulfill their responsibilities as a citizen.
- Compare and contrast the concepts of citizenship in different contexts (e.g., European vs national citizenship).
- Identify the factors that can influence a person's sense of citizenship.
- Assess personal experiences or case studies to determine when and how one feels most like a citizen.
- Critique the existing definitions and norms of citizenship, taking into consideration its implications and shortcomings.
- Formulate a personal definition of what it means to be a citizen in a dynamic, multicultural society.
- Propose strategies or initiatives that can enhance the sense of citizenship among marginalized groups, immigrants, or temporary inhabitants.
- Explain the various rights and responsibilities that come with European citizenship, including the promotion of sustainable development.
- Demonstrate an understanding of the three dimensions of sustainable development and how they are interdependent, and explain why a holistic approach to sustainability is crucial for promoting sustainable citizenship practices and policies.
- Evaluate the role of citizens in promoting sustainability and analyse the effectiveness of current policies and initiatives for promoting sustainability at both the global and local levels.
- Promote active citizenship and encourage students to become engaged and environmentally conscious citizens who are committed to promoting sustainable practices and policies.
- Reflect on citizenship as a socio-legal construct and what this means for different groups in society. How this plays in to concepts as inclusiveness/exclusiveness
- Evaluate different strategies for participating and contributing effectively in dynamic societies.
- Identify ways in which temporary inhabitants (e.g., immigrants, travellers, international students) and marginalized groups can contribute to society.

## 6.6.2. CULTURAL EXPERIENCES

Academic studies can provide students with knowledge surrounding different cultures. However, this knowledge alone is not sufficient to motivate students and inspire cultural awareness and impart the skills required to interact in different cultures (Sasnett, Royal, & Ross, 2010). Participating in study abroad has the potential to enhance a student's personal development and cultural competence (Maharaja, 2018; Sanner, 2010). Further to this, Erasmus students, or those studying abroad, such as CHARM-EU students, can be influential in developing sustainable tourism (Marin-Pantelescu et al., 2022).

Transnational and intercultural learning to develop skills required to communicate and interact effectively with different cultures is a key component of CHARM-EU's educational principle. Exploring Cultural Experiences (CEs) is a fundamental part of this learning. This report will examine how CE is defined in the literature and explore research-based approaches to facilitate meaningful cultural learning from these experiences.

### 6.6.2.1. BACKGROUND AND DEFINITIONS

The definition of culture relates to a set of ideas, customs, attitudes, values, practices and beliefs that are shared by a particular group, organisation, society or country. The concept of experience can be defined as the practical observation of, and contact with, certain events or facts. This can be further described as not only the observation of but the participation in these activities as a form of knowledge acquisition. When combining these two terms together, CEs can be defined as activities within different environments that allow individuals to interact with other individuals from different cultures to their own.

The ability to appropriately and effectively communicate and engage in differing cultural contexts is a fundamental learning of any higher-level education. The opportunity to study abroad is often considered an effective way of achieving this learning outcome (Knight & de Wit, 2018). Erasmus programmes offer University students an opportunity to learn and appreciate diverse cultures around the world, specifically engaging in the culture of the city or country in which they are studying (IGI Global).

Study abroad offers many benefits to students both in terms of personal development and for their chosen future careers. The established benefits to exchange programmes (such as the EU's Erasmus+ programme) include improving foreign language skills, enhancing understanding of other cultures, becoming more independent and self-confident as well as feeling a sense of connection as a European citizen. Engaging in CEs can also encourage students to consider cultural diversity and critically analyse their own cultural identity and beliefs (Maharaja, 2018).

A study by Sobkowiak (2019) indicated that studying abroad did not necessarily offer an opportunity to connect and immerse fully into the local community. Instead, students studying abroad tended to gain cultural experiences from their local and other international peers. In addition, these connections

with peers from different cultures were more likely to motivate students to explore foreign cultures and gain a further understanding of cultural diversity.

Erasmus students provide a great opportunity to help develop sustainable tourism. As a collective, these students have been shown to be interested in cultural enrichment, engaging with the local people, making new connections and friends and exploring new tourist attractions and cultural/heritage sites (Marin-Pantelescu et al., 2022; Kratzke and Bertolo, 2013). This report will highlight the current best practices discussed in the literature on providing holistic and meaningful CEs for students studying abroad, specifically considering the students enrolled in the CHARM-EU masters programme. Additionally, there will be mention made to how these CEs can be linked to learnings related to global sustainability.

### **6.6.2.2. RESEARCH BASED APPROACHES TO FACILITATE MEANINGFUL STUDENT CEs**

#### **Experiential Learning (to involve reflection)**

The Experiential Learning Theory, first proposed by Kolb et al. in 2001, relates to learning through the act of doing or experiencing and importantly reflecting on the activity afterward. Studies have suggested that experiential learning in the form of study abroad programmes can have a positive influence on developing cultural awareness and needs assessment skills in students.

Research also found that if exchange students are actively asked to reflect on their experience the cultural sensitivity skills are enhanced. This active reflection helps students to move from: 'they do things different, that is interesting/strange/weird' to 'what does this tell me about me and my values etc.

Students in previous studies have benefitted from visiting local communities and completing daily reflection journals specifically designed to encourage students to be reflective, analytical and thoughtful to avoid giving only basic summaries of events/CEs (Nzaranyimana, Orvis and Russell, 2019).

#### **Immersion into the local community**

Sampling cuisines, visiting museums, attending festivals and other events celebrating culture act as entry points or pathways into cultural immersion (J. Bronxite, Tourism Academy). Studies would suggest that immersive CEs facilitate students to further develop their self-identity and cultural awareness (Yang et al., 2016). This is a very powerful tool in developing self-reflection and communication skills. Findings have indicated however that to maintain transformative change associated with cultural immersion, short stay Erasmus students should continue to engage in reflection on their immersive CEs on returning to their society/community (Onosu, 2021).

#### **Culturally responsive practices**

This relates to in class teaching and outside class activities, making use of different cultural backgrounds amongst the students. These practices encourage students to be aware of the other

cultures around them within the peer group whilst using their own culture to contribute to the group’s learning. (Elaborate & Reference)

### **Reflection on, and examination of, the student’s own culture and perceptions**

Academic teaching regarding culture and language proficiency alone is not a sufficient method of cultivating cultural awareness (Sasnett, Royal, & Ross, 2010). It is important to encourage and facilitate CEs for students to develop their cultural competence in a way that is not limited by preexisting personal values, beliefs, attitudes and perceptions (Sanner, 2010). International CEs can provide students with the opportunity to critically examine and self-analyse their sense of identity within their own culture (Sobkowiak, 2019).

Through engagement and discussion with fellow international peers, students can work together to promote their cultural awareness and reflect on their CEs within the host country in a more objective manner.

### **Sustainable Tourism**

This concept relates to not only environmental sustainability but also the societal/cultural and economic aspects of sustainability and development in tourism. A balance between these three dimensions is required for long-term sustainability of tourism. The term Sustainable Tourism has been defined by the UN World Tourism Organization and UN Environment Program as “tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities” (UNEP & UNWTO, 2005: 11-12. Making Tourism More Sustainable – A Guide for Policy Makers).

Through immersive engagement in CEs of their host country/city/community, students of the CHARM-EU Masters programme should be able to identify and critically examine the balance of these three dimensions.

#### **6.6.2.3. PRACTICAL APPLICATIONS**

Examples of how these key research-based approaches to CEs could be put into practice have been provided in the table below. The suggested sample activities have been developed specifically considering the needs of CHARM-EU masters students.

**Table 34** Suggested practical applications of Cultural Experiences in the Master’s

Key aspect	Practical Applications of CE Approaches
Experiential Learning (to involve reflection)	<ul style="list-style-type: none"> <li>Students work in local peer groups with a local stakeholder related to local culture and/or tourism, after students will produce a reflection essay on this;</li> </ul>

Key aspect	Practical Applications of CE Approaches
	<ul style="list-style-type: none"> <li>• Visiting and finding buildings, art, archaeological sites etc. and reflecting on the experience either verbally in peer groups or as a written reflection.</li> <li>• Students could maintain a reflection journal/diary of CEs for each phase.</li> </ul>
Immersion into the local community	<ul style="list-style-type: none"> <li>• City tours from local guides; Attending ‘gigs’ such as Irish comedy, poetry reading/literature, traditional music etc.;</li> <li>• Offering students to join classes in the native language;</li> <li>• Presentations/information sessions from departments who organize cultural experiences during orientation week and in student handbook. (e.g. Trinity hiking group – international and Irish student members);</li> <li>• Experience linguistic and oral traditions, the performing arts, social practices and traditional crafts.</li> </ul>
Culturally responsive teaching practices	<ul style="list-style-type: none"> <li>• Group projects and/or debates surrounding cultural differences of the students’ cultures and preconceptions of the culture in the host country. This would encourage exploring similarities between students’ own culture and host country’s culture (comparing these against preconceived ideas or perceptions).</li> </ul>
Reflection & examination of student’s own culture and preconceptions	<ul style="list-style-type: none"> <li>• Group work/discussion/debate at the beginning on each phase and then again at the end to encourage reflection on learnings from CEs</li> <li>• Presentation on cultural clashes in each phase during orientation week.</li> </ul>
Sustainable Tourism	<ul style="list-style-type: none"> <li>• Field Trips in each phase;</li> <li>• Cultural activities relating to nature (local landscape, flora &amp; fauna);</li> <li>• Interaction with stakeholders involved in sustainability or industries associated with sustainability change (e.g. food industry etc).</li> </ul>

#### 6.6.2.4. SAMPLE MODULE LEARNING OUTCOMES (MLOs)

Considering the analysis, below are some sample learning outcomes that may help support the further development of European Citizenship in the Master's. Some of these have been taken from existing courses<sup>5</sup>, and others have been developed.

At the end of the module, you should be able to:

- Collaborate with local stakeholders to understand cultural and tourism aspects, and synthesize experiences into a reflective essay
- Identify and define key attitudes necessary for intercultural competence, such as respect, openness, and curiosity.
- Recall and describe the different components of knowledge required for intercultural competence, including cultural self-awareness, culture-specific knowledge, deep cultural knowledge, and sociolinguistic awareness.
- Explain the significance of attitudes in the development of intercultural competence and how they contribute to effective intercultural interactions.
- Summarize the various skills involved in intercultural competence and understand their role in processing knowledge and engaging with diverse individuals.
- Demonstrate the ability to apply observational, listening, and analytical skills to understand and interpret intercultural information and contexts.
- Apply cultural self-awareness and sociolinguistic awareness to adapt behaviors and communication strategies when interacting with individuals from different cultural backgrounds.
- Analyze and evaluate the effectiveness of one's own attitudes, knowledge, and skills in promoting intercultural competence and developing flexibility, adaptability, and empathy.
- Evaluate the impact of external outcomes of intercultural competence, such as behavior and communication skills, on building positive relationships and fostering intercultural understanding.
- Create strategies and action plans to enhance attitudes, knowledge, and skills related to intercultural competence, considering individual strengths and areas for improvement.
- Generate innovative approaches for promoting intercultural competence in educational or professional settings, taking into account the diverse needs and backgrounds of individuals.
- Analyze cultural artifacts, such as buildings, art, and archaeological sites, and articulate reflections on these experiences verbally or in writing.
- Document and evaluate personal learning and growth in cultural experiences throughout different phases using a reflective journal

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<sup>5</sup> Munster Technological University's (Carlow Institute of Technology) module on Irish Language and Contemporary Society, Nzaranyimana et al., 2019. In addition, the Digipass project handbook also contains some sample module learning objectives that may be useful. <https://digi-pass.eu/Handbook>

- Participate in local cultural activities and appraise their impact on personal understanding and appreciation of the local culture
- Apply the knowledge of the native language to engage more deeply with the local culture and community.
- Summarize the key takeaways from various cultural experiences offered during orientation week, as demonstrated through a presentation or discussion.
- Experiment with various forms of local cultural expression and reflect on the significance of these practices in the wider cultural context.
- Compare and contrast cultural differences, challenge preconceptions, and identify commonalities between their own and the host country's cultures through group projects or debates.
- Present an analysis of cultural clashes experienced during each phase, demonstrating an understanding of the complexities of cultural interaction.
- Apply knowledge gained from field trips to enhance understanding of the cultural context in each phase.
- Connect with local nature through cultural activities, and express the influence of these experiences on their understanding of the local culture.
- Demonstrate an awareness of Ireland's cultural heritage and contribution to the literary and visual arts.
- Demonstrate an understanding of evolving cultural characteristics and practices in an Ireland undergoing rapid transformation.
- Describe social, economic and political features of modern Ireland.
- Research aspects of Irish society in an interactive manner
- Offer a critical assessment of recent developments in Irish society.
- Identify and understand both the physical and intangible aspects of Irish (or appropriate country's) culture.
- Debate the relationship between the tourism industry and heritage and culture with a focus on sustainability. (From Dundalk IT module on Tourism, Policy, Heritage and Culture)
- Apply classroom knowledge and science technologies through extension methodologies to assist partners in addressing their challenges;
- Demonstrate intercultural knowledge and effectiveness to successfully communicate, understand, and interact among people with differing assumptions that exist because of ethnic and cultural differences;
- Demonstrate the ability to communicate appropriately while considering audience and purpose in a different cultural setting;
- Understand cultural communication and public engagement methods
- Critically compare how verbal and written communication differs between cultures
- Apply culturally appropriate methods of group conversation and presentation
- Demonstrate the ability to work constructively as part of a bi-national problem-solving team.

These Learning Outcomes could be adapted to further suit the interests of the CHARM-EU students.

### **6.6.3. GLOBAL DIVERSE PERSPECTIVES**

Infusing global diverse perspectives in teaching is key for students to understand the interconnectedness of global cultures, economies, technologies, ecology and political relationships (Merryfield, 1998). However, the analysis of global diverse perspectives was investigated differently

than the previous two themes. WP3.1 asked Teaching staff from the Master's to provide their understanding of this term based on their experiences in an online survey disseminated in March 2023. Only a small number of responses were received but a potential definition based on their responses was crafted.

#### **6.6.3.1. BACKGROUND AND DEFINITION**

"Global diverse perspectives" in the context of CHARM-EU teaching refers to a transdisciplinary and inclusive educational approach that fosters an understanding and appreciation of various viewpoints, experiences, and challenges from around the world. It goes beyond Eurocentric perspectives by actively incorporating non-European case studies, inviting speakers from diverse backgrounds and geographical regions, and including initiatives and issues from the Global South. It also includes literature and discussions which present contrasting perspectives, allowing students to critically examine different viewpoints and develop a nuanced understanding of complex global issues.

#### **6.6.3.2. RESEARCH BASED ASPECTS**

Merryfield (1998) provides some common elements teaching staff use to present global perspectives in teaching.

- Teach students about their own cultures and diverse perspectives through multiple viewpoints and comparisons of both similarities and differences, so that students can understand the complexity of culture and demonstrate tolerance and respect for differences.
- Connect global content to students' lives.
- Have students make connections across time and space
- Provide cross cultural experiential learning
- Use themes, issues, or problems to organize and integrate global concepts.
- Expand the curricular focus to include less-taught parts of the world and address global issues.
- Incorporate current global events into instruction.

#### **6.6.3.3. PRACTICAL APPLICATIONS**

Within the current Master's, sample activities were provided by teaching staff, including

- There are dedicated sessions on the Global South (e.g. Antarctica, South Africa, Australia, Small Island Developing States), also invited speakers from, e.g. South Africa and Australia, students can do their research project on non-local challenges (e.g. Peru, Senegal, Iraq, Nigeria, Kazakhstan).
- Collection of challenges for the Capstone from EU and non-EU stakeholders, from local to global challenges, from diversity of stakeholders (UN, government, business, NGOs, grassroots, etc.) and across the 5 universities. Point students to the need to include diversity of perspectives and take account of marginalised groups of society in their analyses and solutions.

#### 6.6.3.4. SAMPLE MODULE LEARNING OBJECTIVES

- Recognize the interconnectedness of global cultures, economies, technologies, ecology, and political relationships through the lens of diverse perspectives.
- Develop a comprehensive understanding of the concept of "global diverse perspectives" and its significance in addressing sustainability challenges.
- Analyze and critically evaluate non-European case studies to gain insights into diverse global challenges and solutions.
- Engage in cross-cultural experiential learning to enhance empathy, tolerance, and respect for diverse viewpoints.
- Integrate multiple viewpoints and comparisons to understand the complexity of culture and promote intercultural understanding.
- Make connections across time and space to contextualize global issues and explore their historical and geographical dimensions.
- Demonstrate the ability to identify and analyze global events to enhance the real-world relevance and topicality of sustainability issues.
- Critically evaluate the limitations of Eurocentric perspectives to include underrepresented regions of the world, fostering a broader understanding of global challenges and solutions.
- Apply diverse perspectives, including those from non-European contexts, to analyze and propose innovative solutions for local, regional, and global sustainability challenges, with a particular emphasis on addressing the needs of marginalized groups and engaging diverse stakeholders.

Following the evaluation and development of the Cultural Experiences, Global Diverse Perspectives, and European Citizenship Educational Report, WP3.1 have developed concrete actions to ensure that these themes are integrated into the Master's in Global Challenges for Sustainability.

The following section describes the proposed actions, how they will be implemented, and results from the implementation.

## 6.7. ACTIONS

The following actions were implemented to improve the inclusion of Cultural Experiences, Global Diverse Perspectives, and European Citizenship in the Master's.

Action	Rationale	Implementation
<p>Identification of European Student Events and Conferences that can be shared with Students on the Master's.</p>	<p>Fostering student inclusion in European events and conferences aligns with the European Citizenship theme</p>	<p>A review of events and conferences of interest for Master's students related to European Citizenship was conducted. This was brought to the Programme Board on the 30/11/2023 and they agreed to share information to students via the student newsletter.</p> <p>This action has resulted in Master's students attending conferences related to this topic.</p>
<p>Reintroduce a session on intercultural competencies in student orientation sessions</p>	<p>Aligning student orientation with Global Diverse Perspectives and Cultural Experiences themes.</p>	<p>During the student orientation, each local classroom included a session on intercultural competencies.</p>
<p>Update the module design template with guidance on integrating Global Diverse Perspectives and Cultural Experiences</p>	<p>Aligning teaching staff and module design with Global Diverse Perspectives and Cultural Experiences themes.</p>	<p>Module descriptors have been updated to consider these elements in particular for the new Energy and Sustainable Cities track.</p> <p>At the 2024 Barcelona Hackathon for Teaching Staff a specific session on GDP was held and all teachers planned to include this in their teaching the following year.</p>

Action	Rationale	Implementation
Explore whether a session on European Citizenship could be included the Master's	Aligning teaching content with European Citizenship theme	<p>Development of resources related to student reflection of being part of a European Alliance are been considered for the 2024 cohort.</p> <p>As part of the alumni survey a question on being part of the EUA was included for post-Master's reflection.</p>
Include elements of intercultural learning in Master's development within the Hackathon	Aligning module design of P1 with the Global Diverse Perspectives and Cultural Experiences themes.	<p>At the 2024 Barcelona Hackathon a specific session was included for P1 teachers.</p> <p>As a deliverable of WP11 they will also make training plans about inclusive education and global diverse perspectives. These plans will be open access and shared with other alliances.</p>
Include a section of text in the student PDP to encourage them to reflect on the intercultural and diverse perspective element of their mobility.	Aligning student reflection with Cultural Experiences theme.	This section of text has been included in the student PDP.
Review existing onboarding resources to ascertain if there are updates required on global diverse perspectives and cultural experiences.	Updating any existing resources with guidance on Global Diverse Perspectives and Cultural Experiences.	WP11 are working on this task in the coming year.

Action	Rationale	Implementation
Workshop on intercultural communication could be provided for CHARM-EU administrative and WP staff.	Aligning Global Diverse Perspectives and Cultural Experiences with teaching staff professional development.	Initial contact has been completed on identifying staff members who could do this training in UM.
Workshop on Natura 2000 / Master Phase 1: European environmental regulations and projects	Aligning student awareness with Global Diverse Perspectives and Cultural Experiences themes/ European citizenship  This is a yearly workshop done with P1 students. European Environmental Policy.	Roland Thaler planned this 3-hour session on Monday November 20, 2023 with Master's students.
Montpellier Peek app	Food policies (starting with the European legislation to end with local initiatives).  <a href="https://docs.google.com/document/d/1YGcKh1Rnor0D-izw1DqKSLE57_eVUt3bCjcElxS_hzQ/edit#heading=h.blp5rffglrem">https://docs.google.com/document/d/1YGcKh1Rnor0D-izw1DqKSLE57_eVUt3bCjcElxS_hzQ/edit#heading=h.blp5rffglrem</a>	All students on the track "Food" have to complete a required field trip for Module 3 connected with European legislation
Intercultural skills and GDP workshop at MOXMO	Integration of intercultural skills within the Master's.	A session on intercultural skills was included in the MOXMO BIP
CHARM-EU Cultural Festival	The CF is aimed at showcasing CHARM-EU members' languages and cultures	The 2024 CHARM-EU Cultural Festival focused specifically on interculturality and "Bridging cultures, embracing diversity". A

Action	Rationale	Implementation
	and engaging visitors in activities that provide insight into CHARM-EU cultures in a playful way.	small number of Master's students were involved in this conference.
Intercultural training for Erasmus + Master's students	Training students before they go on mobilities with intercultural skills	A new KCT is working on a short and long version of this training within the Mobility Work Package.
Research on work Global South in Capstone	Improved integration of Global partners to the Capstone	A research paper was developed with the University of Pretoria related to the cultural experiences and positionality of students within the Capstone.
Revision of the educational principles	To include the themes within the text of the revised educational principles	Examples of these themes were included in the new educational principles, and the revised text included context related to these themes

## **7. SCALE UP PLAN TO INCREASE THE IMPACT: INCREASE THE NUMBER OF STUDENTS THAT PARTICIPATE IN THE MASTER'S**

### **7.1. INCREASE THE NUMBER OF STUDENTS THAT PARTICIPATE IN THE MASTER'S**

#### **7.1.1. INTRODUCTION AND TASK AIM**

The main task of the WP3.2 *Scale-up plan to increase the impact of the Master's Global Challenges for Sustainability* is to develop a plan and implement it to scale up the impact of CHARM-EU and the Master's programme.

This document outlines the process and outputs for achieving the aims of the following sub-task: increase the number of students that participate in the Master's.

#### **7.1.2. PROCESS**

The process of this sub-task involves:

- a. Analyse marketing and promotion campaigns and ways of reaching out to students, including info sessions by liaising with WP16 and the JVAO
- b. Analyse admission procedure, i.e. admission rounds, admission duration, and admission criteria, by liaising with the JVAO and the Quality Office
- c. Analyse the registration procedure by liaising with the JVAO and the Quality Office
- d. Recommend improvements for visibility and information sharing
- e. Review and recommend a new admission timeline and criteria
- f. Recommend improvements for a smooth registration process
- g. Review financial inclusivity and explore options to provide grants
- h. Investigate new collaborations and partnerships with industry that could promote the Master's (alignment with WP13)

The tasks of 3.2.1. involved consultation and engagement with the JVAO, DEI team, WP16, Programme Board, Academic Council and Executive Board.

#### **7.1.3. TASK OUTPUTS**

##### **7.1.3.1. ANALYSE MARKETING AND PROMOTION CAMPAIGNS AND WAYS OF REACHING OUT TO STUDENTS, INCLUDING INFO SESSIONS BY LIAISING WITH WP16 AND THE JVAO**

WP16 is responsible for overseeing marketing and promotion campaigns for the recruitment for the Master's in Global Challenges for Sustainability. This involves the strategic planning, development, and execution of promotional activities aimed at enhancing visibility, engagement, and outreach to target audiences. Based on student feedback and input from JVAO, the current marketing and promotion campaigns and ways of reaching out to students were analysed. This provided the following insights:

- Broader advertisement of the programme (to everyone, including minorities and underrepresented) is needed.
- More efficient methods of promotion via social media platforms are suggested.
- International study portals, such as MastersPortal and Findamaster, can increase the visibility of the master's programme.
- The website is overwhelming at first, which could exclude some people. A clearer structure with sub-links could help to make it more accessible.

Information sessions for potential students were generally believed to be *well-organised, informative, inspiring, warm, motivating* and *very helpful*. However, the following insights were provided by the respondents:

- The timing is unideal; more time slots are preferred.
- The information sessions are announced very shortly before them.
- Too much information was provided at the sessions.
- Shorter sessions are preferred.
- The programme content remains vague.
- A FAQ document with commonly asked questions would be beneficial.
- The sessions should rather focus on actual questions; more time is needed for Q&A.

This input served as a basis for recommendations and improvements formulated later in this document.

#### 7.1.3.2. ANALYSE ADMISSION PROCEDURE, I.E. ADMISSION ROUNDS, ADMISSION DURATION, AND ADMISSION CRITERIA, BY LIAISING WITH THE JVAO AND THE QUALITY OFFICE

Currently, the master's programme students are admitted through two(–three) admission rounds (depending on the available spots). This procedure ensures that only candidates who meet the required standards are admitted, balancing factors such as academic merit and diversity. UB, as the main responsible partner university for admission to the Master's in Global Challenges for Sustainability, provided the admission data for analysis. **Table 35** summarises the distribution of applicants during admission per **admission round**, as well as the **length** of admissions.

Based on the analysis, the following observations and insights can be provided:

- There was an increase from Cohort 2 in the number of applications.
- The majority of applications came during the first rounds.
- The gap between the total and complete applications was high, with an increasing trend from Cohort 2.
- Around 50% of the total applications were admitted, and 60–70% of the complete applications.
- Cohort 4's relatively low acceptance rate (57%) suggests a more selective process or fewer qualified applicants in that cohort.

- There was a huge gap between the number of admitted and actually enrolled students. Around half of the admitted students did enrol, which was  $\sim\frac{1}{4}$  of the total number of applications.
- The third round yielded a very small number of students in general.
- The share of non-EU students showed a slight increase, but it remained around 10%.
- The shorter rounds in Cohorts 3 and 4 could suggest an efficient screening process that quickly identifies suitable candidates and improvements in process efficiency or decision-making speed.
- Cohort 1's high enrollment rate (69%) pointed to a strong commitment among applicants, perhaps due to the programme's launch.

**Table 35** Distribution of the number of applicants, admitted applicants and enrolled students, number of enrolled non-EU students, and the length of admission over the first four cohorts. Note that detailed data were unavailable for Cohort 1

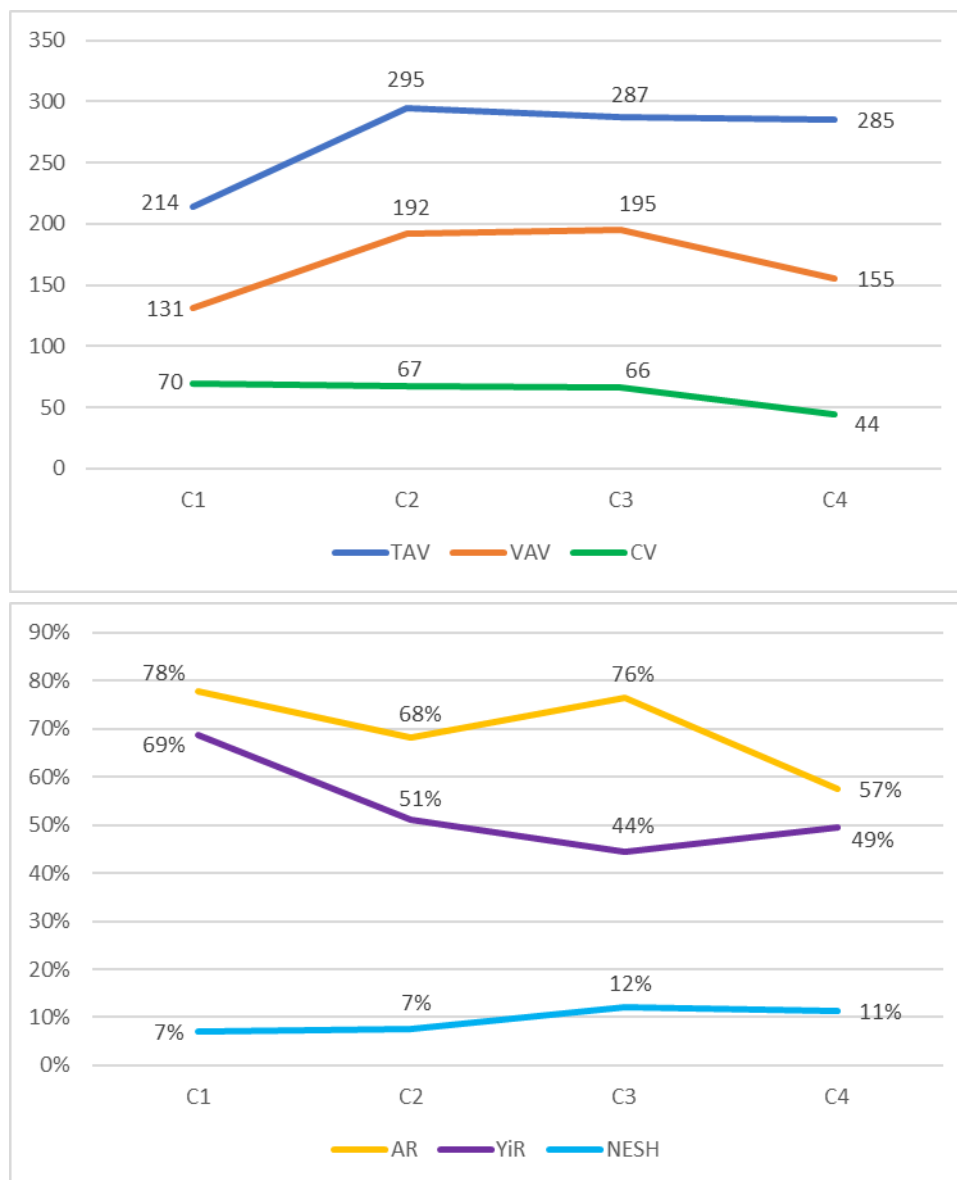
	Cohort 1	Cohort 2	Cohort 3	Cohort 4
<b>number of applicants</b>	<b>214</b>	<b>295</b>	<b>287</b>	<b>285</b>
1st round		188	229	144
2nd round		82	37	104
3rd round		25	21	37
<b>number of complete applications</b>	<b>131</b>	<b>192</b>	<b>195</b>	<b>155</b>
<b>number of admitted applicants</b>	<b>102</b>	<b>131</b>	<b>149</b>	<b>89</b>
1st round		87	123	51
2nd round		34	16	33
3rd round		10	10	5
<b>number of enrolled students</b>	<b>70</b>	<b>67</b>	<b>66</b>	<b>44</b>
1st round		42	57	30
2nd round		17	4	12
3rd round		8	5	2
<b>number of enrolled non-EU students</b>	<b>5</b>	<b>5</b>	<b>8</b>	<b>5</b>
<b>length of admission (days)</b>		<b>71</b>	<b>45</b>	<b>59</b>
1st round		28	16	21
2nd round		28	9	17
3rd round		15	20	21

In order to keep track of the admission procedure and applicants' numbers, three absolute and three relative **admission indices** are proposed to monitor the cohorts:

- Total application volume (TAV): The total number of applications.
- Valid application volume (VAV): The total number of complete applications.
- Cohort volume (CV): The number of students enrolled.
- Admission rate (AR): The percentage of applicants who are offered admission (number of accepted students / number of valid applicants).

- Yield rate (YiR): The percentage of accepted students who choose to enrol (number of students who enrol / number of students accepted).
- Non-European share (NESH): The percentage of non-EU students of the cohort (number of non-EU students / number of students enrolled). Please note that non-EU students are considered based on their nationalities. However, these students may have permanent residence in the EU and pay the tuition fees as EU students.

These indices (**Figure 19**) can also provide insights into the efficiency of marketing campaigns, changes in admission criteria, selection process and tuition fee/admission fee.



**Figure 19** Admission indices over the four cohorts

- High TAV values reflected a strong interest in the programme.
- Considerably lower VAV values could be due to application complexity, i.e. compared to other programmes, a recording and a sustainability-related piece need to be submitted.
- There was a decrease in CV, Cohort 4 had significantly fewer enrolled students, suggesting either lower applicant quality or more stringent selection criteria.
- AR was between 57–78%, with an average of 70%. The lowest admission rate of Cohort 4 could be attributed to the renewed admission criteria.
- YiR was between 44–69%, with an average of 53%. There was a gradual decrease in the yield rate. However, a slight rebound could be observed at Cohort 4, suggesting higher engagement.
- NESH was between 7–12%, with an average of 10%. Even though a high number of interest came from non-EU applicants, the higher tuition fees restricted their enrollment.

Further and more in-depth analyses require detailed primary (anonymised) data on the admission. This could shed light on the gap between the total (TAV) and valid application volumes (VAV), i.e. which documents/files are not provided; the lowest-scored assessment criteria, i.e. which ones are the most difficult to achieve high scores; the low yield rate (YiR), i.e. which further steps can be taken to increase retention.

Based on admission practice, WP3 suggested considering **rolling admission**. The idea was discussed by the Programme Board, including current students. The following advantages and disadvantages were collated for making a decision:

- Rolling admission is more student-friendly in that students won't have to wait a long time for an answer.
- Flexibility: rolling admission allows applicants to apply within a broad timeframe and submit applications anytime.
- Quick decisions: applicants typically receive admission decisions shortly after applying, there is usually a better engagement.
- Competitive: applicants generally apply for a minimum of 4 to 6 master's programmes. In this competition, it is important for students to commit to the Master's as soon as possible.
- Less intensive workload: the workload for JVAO, DEI team and assessors is distributed, not focused on a short period.
- Continuous enrolment: as applications are reviewed on an ongoing basis, accepted students can often enrol at various points throughout the year.
- Accessibility: the flexible nature of rolling admission can make education more accessible to a broader range of students, including those who may face barriers with traditional application timelines.
- Advantageous for non-EU students – if accepted earlier, they have better chances of getting funding.
- Rolling admission could be more inclusive as students with lower admission scores who apply early will have a better chance of getting on the programme. Also, there is

no evidence that students with lower admission scores perform less well on the masters.

- Competitive environment: since decisions are made continuously, spaces in the program may fill up quickly, making it potentially more competitive as time goes on.
- Limited planning: planning student allocation might be difficult, and the needs vary over the whole admission process.
- Competitive diversity: as spaces fill up, underrepresented groups may face increased competition, potentially affecting the overall diversity of the admitted cohort.
- Planning: proactive planning is needed so that JVAO, assessors and DEI are available for the longer duration of the admissions process.
- Rejected applicants (below 60 points) can resubmit their applications based on the feedback at a later stage.
- We need to consider, however, that ranking in the scores gives students priority over location allocation in the master's.
- Students said communication is critical around the opening and closing dates and when students can expect a response (other master's give decisions faster). Their preference, as students, would be for rounds rather than rolling admissions. For them, deadlines are important.

The Programme Board said this is worth exploring for the cohort in September 2025 as a pilot measure, but application rounds rather than rolling admissions were deemed more advantageous at this time, but clearer communication with students is required.

The **admission criteria** were reviewed using the Master's in Global Challenges for Sustainability – Rules and regulations – Admissions document. Here is a description of the criteria.

“The selection criteria will be assessed based on:

- Academic transcript with the GPA
- Curriculum vitae
- An essay
- A video presentation answering three/four predetermined questions.
  - Describe why you have decided to apply for the Master's in Global Challenges for Sustainability.
  - How your background (prior studies and/or experience) will help you to benefit from this programme?
  - How could this programme help you with your future career path?
  - What are your motivations to choose the track of your election for Phase 2?
- Optionally, an interview (i.e. if there is any doubt about the assessment of competence).

If an applicant has inclusivity requirements and cannot provide a video presentation, the Admissions Board will advise on an alternative.

The criteria include four categories that are assessed during the admissions.”

As *Verbal reasoning* is very similar to *Oral communication*, therefore, from the third cohort onwards, it has been replaced by *Knowledge SDGs* to align content-wise with the master's programme.

The admission assessors still formulated some insights on these criteria:

- *Visual presentation* is difficult to evaluate, as in most cases, a simple video recording was provided without any visual effects.
- Some inclusivity concerns have been raised related to *Visual presentation*.
- Recently, many generic essays have been submitted. The potential use of generative AI has been flagged.
- The rubric was ambiguous and had no explanation for the scores within the categories (e.g. insufficient: 1–4 points).

**Table 36** provides an overview of these criteria, including the sub-criteria and points to be awarded, as well as the way these are assessed.

**Table 36** Selection criteria during admission over the first three cohorts

Cohort 1–2		Cohort 3	
Criteria	Based on	Criteria	Based on
<b>Academic excellence (10)</b>	GPA	<b>Academic excellence (10)</b>	GPA
<b>Personal Competencies (40)</b>		<b>Personal Competencies (40)</b>	
Intercultural competence (10)	CV	Intercultural competence (10)	CV
Civic engagement (10)	CV	Civic engagement (10)	CV
Oral communication (10)	video	Oral communication (10)	video
Commitment to programme entry (10)	essay+video	Commitment to programme entry (10)	essay+video
<b>General Academic Competencies (40)</b>		<b>General Academic Competencies (40)</b>	
Critical thinking (10)	essay	Critical thinking (10)	essay
Analytical writing (10)	essay	Analytical writing (10)	essay
Verbal reasoning (10)	video	Knowledge SDGs (10)	essay
Visual presentation (10)	video	Visual presentation (10)	video
<b>Inclusivity (10)</b>	interview	<b>Inclusivity (10)</b>	interview

Additional issues linked to the admissions have been raised by the JVAO:

- Due to GDPR rules, admission assessors cannot access the same application materials as UB/JVAO. Downloading, uploading, and moving application documents costs a lot of time.
- Applicants have to wait a long time before getting a decision. They might select another master's, which will make it quicker to get back to them.
- The allocation decision for the 2nd phase is not made directly when the student is accepted but later. This is the cause of more emails and possible drop-outs.
- Round 3 is a heavy burden on admin with little reward.

This input served as a basis for recommendations and improvements formulated later in this document.

### 7.1.3.3. ANALYSE THE REGISTRATION PROCEDURE BY LIAISING WITH THE JVAO AND THE QUALITY OFFICE

The overall student journey – from application to graduation – with identified bottlenecks was created by JVAO and JVITO members based on student feedback, pre-programme survey results (Quality Office) and JVAO experience. The flagged issues were further analysed by WP3.2 and the Student Journey Bottlenecks Task Force (JVAO, JVITO, UB, and WP3).

The identified 24 bottlenecks were organised according to the student journey: admission (12), enrollment (10), study (1) and graduation (1) phase (**Table 37**). The majority of the bottlenecks were around admission and enrolment.

**Table 37** Student journey bottlenecks during the various phases

Phase	Bottleneck
Admission	1. The promotional information session is too long.
	2. The promotional information session is planned very shortly before it takes place
	3. Applicants missed the application window; it opens and closes quite randomly.
	4. There is no clear and transparent timeline for admission.
	5. Too many documents of applicants.
	6. Downloading, uploading and moving students' application documents costs a lot of time.
	7. Due to GDPR rules, assessors cannot have access to the same student application as JVAO.
	8. Round 3 of admissions is a heavy burden on admin with little reward.
	9. Students have to wait a long time before making a decision; they might decide on another master's, which is quicker to get back to them.
	10. The allocation decision for the 2nd phase is not made directly when the student is accepted but later. This is the cause of more emails and possible drop-outs.
	11. More advanced knowledge is needed on available spots and locations for tracks; this step creates drop-outs.
	12. Introduce application fees for students to reduce the amount of incomplete applications.
Enrollment	13. There are many difficulties with finding accommodation in Utrecht and Dublin.
	14. Pre-arrival information can only be sent out when the list of enrolled students is clear.
	15. Conditionally accepted students do not receive answers during the month of August. This month is critical because of visa, housing, and tuition fees/grant payments.
	16. Conditionally accepted students don't have information on their previous/BA/BSc diploma statuses, and they cannot meet the deadline (incoming continuous emails from students regarding this topic).

	17. The other JVAOs cannot answer or help students with enrollment because they do not know exactly what certified documents are required for complete enrollment.
	18. Share knowledge and educate other JVAOs on the enrolment requirements at UB. Prepare standard communication in advance.
	19. When new students or 2nd-year students miss the window to pay, there are issues. The window is very short and, therefore, easy to miss.
	20. UB opens the enrollment platform, and it closes after a short period. It is not possible to have two platforms (Phase 1 and Phase 3) open at the same time.
	21. Start enrolment/registration sooner. Start enrolment/registration at UU before full acceptance so students have a SOLIS-ID sooner.
	22. Registration and administration procedures at UB take considerable time to complete; thus, registration at other universities is blocked.
Study	23. It would be helpful to ensure students receive their mobility grants well in advance of mobility dates.
Graduation	24. The Diploma Certificate signing procedure makes students wait for a long time.

This input served as a basis for recommendations and improvements formulated later in this document.

#### 7.1.3.4. RECOMMEND IMPROVEMENTS FOR VISIBILITY AND INFORMATION SHARING

WP16 and its '**CHARM-EU Educational Marketing Strategy**' formulated the overarching goals and marketing elements of the Master's in Global Challenges for Sustainability. This strategy was consulted with WP3.2 and finalised in December 2023. The following parts come from the '**CHARM-EU Educational Marketing Strategy**' document.

"Marketing channels:

- CHARM-EU Social Media (Instagram, Facebook, Twitter, LinkedIn, and YouTube)
- CHARM-EU Website ([www.charm-eu.eu](http://www.charm-eu.eu))
- Each partner university's social media channels
- Each partner university website and intranet
- External websites ([topuniversities.com](http://topuniversities.com), [mastersportal.com](http://mastersportal.com), [masterstudies.com](http://masterstudies.com))

Communication kit:

- Main message
- Specific webpage
- Digital poster (Wall/Stories/Web)
- Digital brochure
- Promotional teaser
- News article
- Social Media hashtag
- Keywords
- Testimonials from students, academics, researchers, staff and other stakeholders."

#### “CHARM-EU Website

All the educational offers will have their own space on the CHARM-EU website. All CHARM-EU offers will be displayed in a common platform on the website, designed in line with the EU Directives regarding accessibility, which will include:

- Programme title
- ECTS (where relevant)
- Host university
- Detailed information about the programme and assignments
- Outcomes of the programme
- Information for prospective students
- “How to apply” section
- Testimonials
- FAQs
- Link to contact us form
- SEO/SEM reinforcement

#### Social Media Campaigns

The educational offers can be promoted through the channels below:

- News items
- Organic posts (on feed/grids of core social media channels)
- Reels
- Stories
- Testimonials
- Interviews
- Podcasts
- Paid advertisement on Facebook and Instagram.”

#### “Referral Strategy

Reinforce word-of-mouth communication, having academic and non-academic staff talk about the CHARM-EU educational offers, which will potentially attract new students and create a sustainable brand image inside the partner institutions.:

- Properly communicate through internal communication channels for students, academics and staff
- Share the communication kits with partner universities to support the interaction with prospective students and have a homogeneous message through different channels.

#### Informative sessions and promotional opportunities

- CHARM-EU online informative sessions which will be held in English and open to all learners interested in CHARM-EU educational offers
- Local informative sessions in partner universities which will be designed by each partner to try to reach their own students.
- If possible, partner universities will promote CHARM-EU offerings in their own universities’ open days.

#### Newsletters and mailing

- CHARM-EU Newsletter (sent on a quarterly basis to external and internal subscribers)
- CHARM-EU students’ newsletter (sent on a weekly basis to CHARM-EU students)
- Partner universities’ newsletters

- FOREU mailing.
- Specialised Media & Third party websites
- International level
    - United Nations Sustainable Development Goals Partnership Platform
    - Sustainable Development Solutions Network
    - Climatedtalk University Courses
    - Docsity: an online social learning network for worldwide students and professionals.
    - Find a Master's
    - Study EU (European level)
  - National level
    - Universia (Spain)
    - Universitats (Spain)
    - EducaWeb (Spain).
- In-person promotion
- Participation on a yearly basis at the EAIE
  - Participating in other fairs such as:
    - Saló de l'ensenyament – Spain
    - Futura – Saló de los másters y postgrados – Spain
    - Studyrama Fair – France
    - University of Montpellier Open Days in February – France
    - Higher Education Fair – France
    - Postgraduate Open Day Trinity College Dublin – Ireland.”
    -

The marketing suggestions of JVAO and WP3 are summarised in **Figure 20**.



**Figure 20** Marketing suggestions in order to increase the student numbers of the Master's in Global Challenges for Sustainability

A group of representatives of the Programme Board, JVAO, and WP16 redesigned the format of the **information sessions** based on the identified suggestions.

- The session has been changed to a Question&Answer format.
- Short clips have been made for the main topics of the master's programme (e.g. Phase 1, Phase 2 Food, Water, Life&Health, Capstone, Mobility) and displayed on the website. Potential students are advised to watch these brief videos before the session.
- Questions from potential students were collected beforehand, clustered and answered during the information session.

Furthermore, the **CHARM-EU website** is being redesigned and restructured by the website task force to create more visibility of information regarding the Master's in Global Challenges for Sustainability and other educational offers. WP3 representatives are engaged in this task.

#### 7.1.3.5. REVIEW AND RECOMMEND A NEW ADMISSION TIMELINE AND CRITERIA

Based on the analysis of a–d sections, the following recommendations are presented. In order to potentially increase the number of students in the Master's in Global Challenges for Sustainability, the admission timeline should be aligned with other master's offerings.

The new **admission timeline** was drafted by the JVAO and then first discussed with UB, the admissions coordinator, and WP16 to check its feasibility. After minor modifications, two admission timelines were proposed for consideration by the Programme Board on 6 June 2024 and by the Executive Board on 13 June 2024:

- one specific for Cohort 5 (**Figure 21**) due to the pending accreditation process, and
- one for the future editions, Cohort 6 and onwards (**Figure 22**).

During the discussions, the following points were raised:

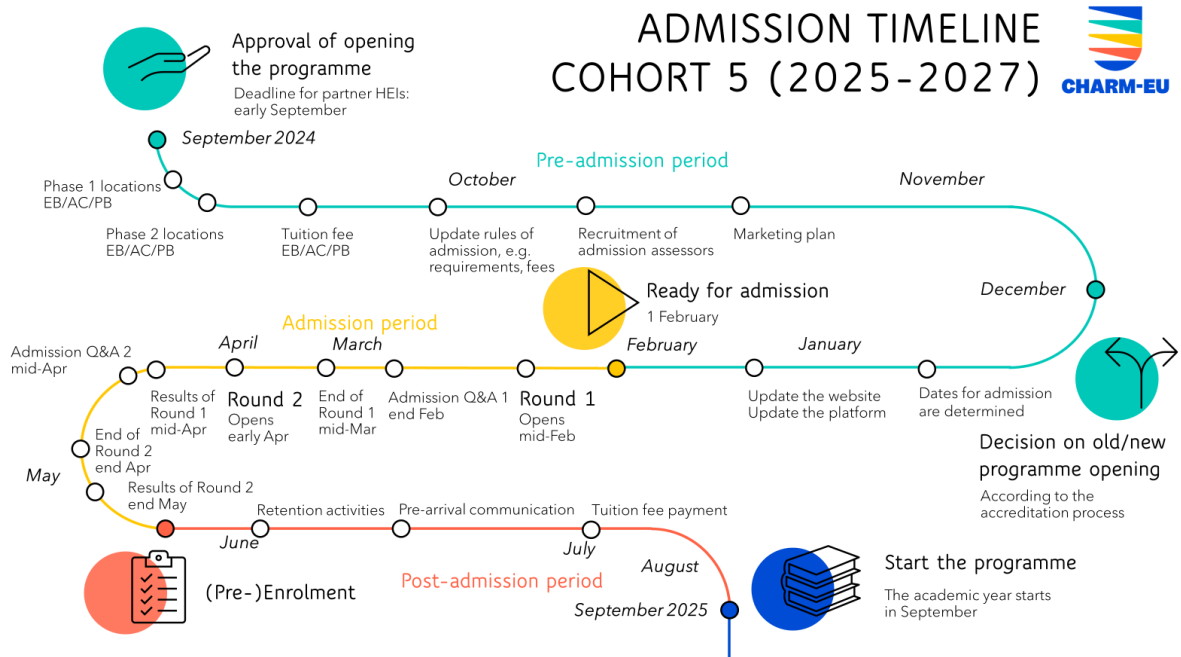
- It would be great to start the whole process earlier and notify students of all the relevant dates as early as possible.

Action: the announcement of the new cohort should happen in September already.

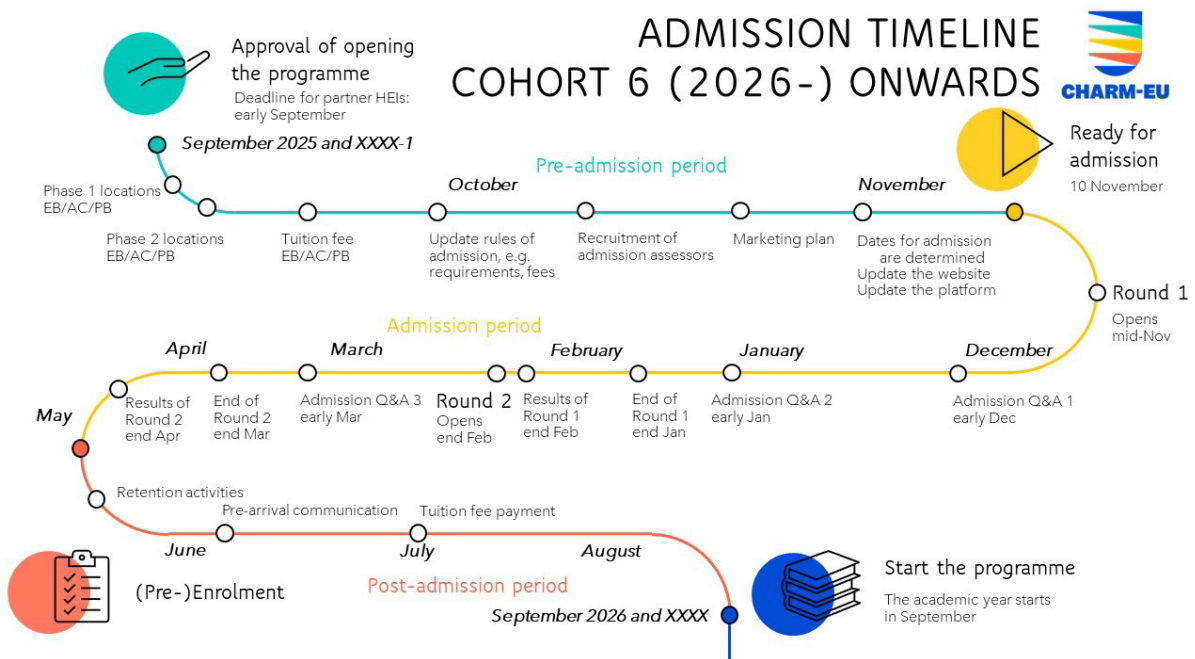
- Specific dates for the most important milestones should be assigned.

Action: these will be determined based on the actual calendar year.

- The Programme Board approved the timeline.
- The Executive Board approved the timeline. However, the institutional internal processes should be explored, and the feasibility of an internal approval by September needs to be investigated. Furthermore, due to the pending accreditation, communication rules of the new cohort should be looked at.



**Figure 21** Admission timeline, including specific actions and milestones for Cohort 5 of the Master’s in Global Challenges for Sustainability

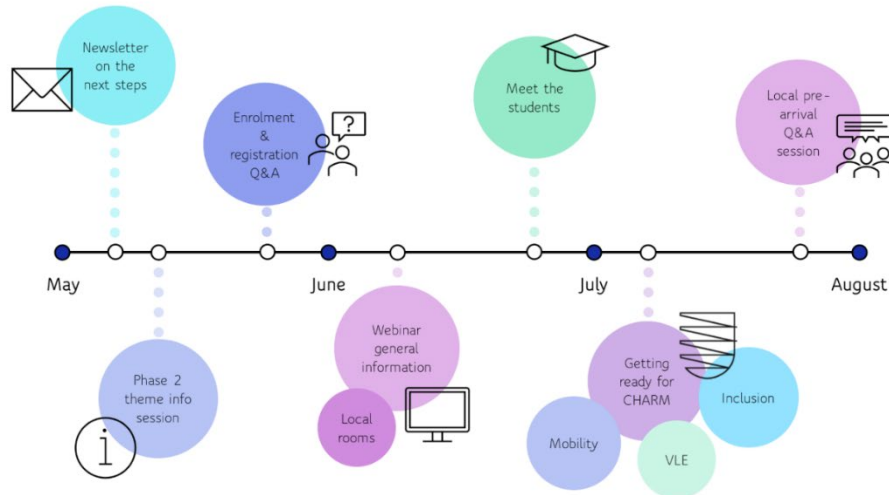


**Figure 22** Admission timeline, including specific actions and milestones for Cohort 6 and future cohorts of the Master’s in Global Challenges for Sustainability

**Retention activities** were organized to tackle the high drop-out rate of admitted students and keep them engaged, and pre-arrival communication was improved. **Figure 23** illustrates the

timeline of these retention actions. As the YIR improved for Cohort 4, the retention strategy seems worth investing in.

## RETENTION ACTIVITIES & PRE-ARRIVAL COMMUNICATION



**Figure 23** Timeline of retention activities and pre-arrival communication to increase the student numbers of the Master's in Global Challenges for Sustainability

After analysing the current trends in admission practices and consulting with the current students, assessors, JVAO, DEI team, Programme Board and Academic Council, the following changes have been incorporated.

### Documents to be submitted:

- Explicitly stated that applicants need to include clear sections on Intercultural experience (languages, relevant international and additional cultural experiences) and Civic engagement (relevant experiences and practical examples of the candidate's past and current engagement) in their CV.
- The video presentation can now also be an audio recording.
- The updated interview instructions and questions are:
  - Your video/audio should be limited to 5 minutes.
  - For this, please use the following structure:
    - Present yourself (name and surname and academic background)
    - Describe why you have decided to apply for the Master's in Global Challenges for Sustainability.
    - How do you think this programme and/or your fellow students can benefit from your experience/education/participation?
    - What are your motivations to choose the track of your election for Phase 2?
    - What kind of project would you prefer to work on during Capstone if you were free to choose?
    - How could this programme help you with your future career path?
    - List the opportunities and challenges you see associated with this master's.
    - List additional information that you might like to provide.

- The essay has been replaced by an open-format product, including but not limited to a poster, video, booklet, pamphlet, podcast and mindmap. The applicants need to choose a specific and local challenge related to sustainability (i.e. the challenge should not be general but specific to their surroundings, city or personal experience). Using this challenge, create a coherent and comprehensive product in English summarising the challenge, interrelated issues and potential solutions. Ensure to explain:
  - why they have selected this challenge;
  - their personal experience with this challenge;
  - analyse it in a critical way
  - through the lens of Sustainable Development Goals (SDGs).

Guideline: length 500–750 words, or 6–8 minutes to listen/watch/read.

Disclaimer: the use of artificial intelligence is discouraged for content generation. Any suspicious products may result in the rejection of the application.

Regarding the **admission criteria**, **Table 38** Selection criteria change from Cohort 3 to Cohort 4 summarises the changes compared to Cohort 3.

**Table 38** Selection criteria change from Cohort 3 to Cohort 4

Cohort 3		Cohort 4	
Criteria	Based on	Criteria	Based on
<b>Academic excellence (10)</b>	GPA	<b>Academic excellence (10)</b>	GPA
<b>Personal Competencies (40)</b>		<b>Personal Competencies (40)</b>	
Intercultural competence (10)	CV	Intercultural competence (10)	CV
Civic engagement (10)	CV	Civic engagement (10)	CV
Oral communication (10)	video	Oral communication (10)	video/audio
Commitment to programme entry (10)	essay+video	Commitment to programme entry (10)	video/audio
<b>General Academic Competencies (40)</b>		<b>General Academic Competencies (40)</b>	
Critical thinking (10)	essay	Critical thinking (10)	product
Analytical writing (10)	essay	Analytical skills (10)	product
Knowledge SDGs (10)	essay	Knowledge SDGs (10)	product
Visual presentation (10)	video	Personal reflection (10)	product
<b>Inclusivity (10)</b>	interview	<b>Inclusivity (10)</b>	interview

- The main updates are related to the format: shifting from the video interview to a more inclusive video/audio recording, and the open-format product, which follows the master's concept.
- The product-based assessment is aligned with the master's challenge-based learning educational principle. The admission process should focus on the candidate's capacity for formulating and critically thinking about a sustainability-focused challenge.

- By analysing a local sustainability challenge, there is less potential use of generative AI for direct content creation.
- Aligned to the open format, *Analytical writing* has been modified to *Analytical skills*.
- As *Visual presentation* has been flagged, *Personal reflection* is now the fourth criterion within *General Academic Competencies*. Reflection is a key part of the master's programme, therefore, including this aspect creates more alignment with its content.
- A short description is provided per criterion:
  - Intercultural competence: languages, relevant international and additional cultural experiences.
  - Civic engagement: relevant experiences and practical examples of the candidate's past and current engagement.
  - Oral communication: the applicant makes a convincing video/audio presentation of their commitment and expectations. The applicant makes good use of the allocated time and questions.
  - Commitment to programme entry: clear expectations from the programme, its structure, components and design; willingness to contribute.
  - Critical thinking: quality, originality, coherence, relevance of arguments in the product in relation to the chosen challenge, given different perspectives. Originality and feasibility of ideas and plans expressed in the product.
  - Analytical skills: the candidate's analytical skills show the thought processes they went through to arrive at a given conclusion and discuss the implications of this, in a structured and clear way, using suitable expressions. Arguments are presented with clarity and clear reasoning.
  - Knowledge SDGs: relation of the selected challenge to sustainability, awareness of the Sustainable Development Goals and identified linkage to these.
  - Personal reflection: explaining the personal (individual/communal) relation to the selected challenge, including lived experience.

Due to these changes in the admission criteria and format, new **supporting materials** have been created to prepare and guide the assessors. These include:

- Rubric: two indicators per criterion have been introduced, e.g., Clarity and structure and Delivery and engagement for Oral communication. To avoid broad and vague scales, there are only five levels/points to select from. A textual description is provided per indicator per level.
- Scoring sheet: a revised sheet has been provided to the assessors to facilitate their work. They need to put an 'X' below the selected level, and all the calculations are made automatically. The scores are automatically copied to a cover overview sheet, which the JVAO uses to collect the final scores.
- Training session: an interactive, case-based (**Figure 24**) workshop has been designed to go through applicants' materials individually and together, discuss the scores, and enhance alignment with each other's scoring philosophy. This workshop was used as a calibration session.



**Figure 24** Example of an applicant during the training session

The assessors evaluated the incorporated changes in a brief survey. **Table 39** provides an overview of the responses (n=6). The feedback indicates strong satisfaction with the new assessment process, particularly regarding the application of rubrics, the helpfulness of required artefacts, and the usefulness of the resources and training provided. The majority of respondents found these elements to be very clear or very helpful, suggesting that the changes effectively support the evaluation process. Some selected comments:

- The online onboarding was invaluable! Especially the discussion with the other assessors was extremely helpful.
- The training session was very useful.
- The spreadsheet is really easy to use, and the structure of folders on SharePoint is very intuitive.
- The most effective change is the use of the improved rubrics.
- There are too many descriptive synonymous adjectives for categories, which can be straight jackets disabling some flexibility.
- Reconsider the choice and weight of the criteria. All other aspects are great, the admission process works well.

**Table 39** Selected questions and their results of the assessors' survey on the new changes

	--	-	0	+	++
How clear was it for you to use the new assessment criteria?				67%	33%
How clear was it for you to use the new assessment indicators?				67%	33%
Reflecting on your use of the rubrics to evaluate a candidate, how clear was the process of applying the new rubrics? Consider the levels, descriptions and user-friendliness of the spreadsheet, as well.				33%	67%
How helpful were the required artefacts (CV, product and interview) in evaluating the candidates? Consider the open format and the challenge-based approach, as well.				17%	83%
How useful were the resources package and training in understanding the admission procedure? Think about the documents, recordings and case studies.				17%	83%

#### 7.1.3.6. RECOMMEND IMPROVEMENTS FOR A SMOOTH REGISTRATION PROCESS

The identified student journey bottlenecks were investigated, and both short-term and long-term measures were taken, including steps toward a future IT architecture of CHARM-EU (Table 40 and Table 41).

**Table 40** Actions, solutions and comments for the admission-phase student journey bottlenecks and their current status

Bottleneck	Actions, solutions, comments	Status
1. The promotional information session is too long.	Shorter videos were created of the last year's session. These brief clips were posted on the website, and the session was turned into a Q&A. Questions were collated beforehand through a form. New videos/prezi/H5P/interactive materials should be created for the new edition.	solved with follow-up
2. The promotional information session is planned very shortly before it takes place.	The provisional dates are part of the new admission timeline. The PB can take over the responsibility of planning and organising these sessions.	solved
3. Applicants missed the application window; it opens and closes quite randomly.	The timeline is communicated on the website.	solved

4. There is no clear and transparent timeline for admission.	JVAO made a draft timeline, which was consulted at the PB and EB meetings. The new admission timeline was approved (see section e).	solved
5. Too many documents of applicants.	The issue is linked to the admission criteria and requirements. These were reviewed and kept the same due to academic reasons.	solved
6. Downloading, uploading and moving students' application documents costs a lot of time.	JVAO helped UB with this thanks to JVAO's internal planning and task distribution. However, this is not a long-term and efficient solution.	solved with follow-up
7. Due to GDPR rules, assessors cannot have access to the same student application as JVAO.	This remained unsolvable under the current conditions.	unsolvable
8. Round 3 of admissions is a heavy burden on admin with little reward.	PB decided to cancel round 3 due to the evidence of previous cohorts. EB decided to have an extraordinary round due to a lack of enough applicants. The new admission timeline contains only two rounds, but these start earlier. Therefore, more applications are foreseen.	solved
9. Students have to wait a long time before making a decision; they might decide on another Master's, which is quicker to get back to them.	This issue is linked to a clear timeline. The decision is made as soon as possible. The DEI team and assessors receive a calendar blocker to plan their availability.	solved
10. The allocation decision for the 2nd phase is not made directly when the student is accepted but later. This is the cause of more emails and possible drop-outs.	This was available for Cohorts 3–4, but reconsideration is needed for Cohorts 5 and onwards, including the new partners.	solved with follow-up
11. More advanced knowledge is needed on available spots and locations for tracks; this step creates drop-outs.	This was available for Cohorts 3–4, but reconsideration is needed for Cohorts 5 and onwards, including the new partners.	solved with follow-up
12. Introduce application fees for students to reduce the amount of incomplete applications.	This was discussed and considered at the managers' meeting. It will be discussed again for the new edition of the master's programme.	to do

For the admission phase-related bottlenecks, these follow-up actions were raised:

- A: Compare the institutional application systems and their accessibility.

A list of requirements to be checked/completed by JVAO and new partners is created. The next step is then to inventory possible solutions at all partner institutions based on the list of requirements. The inventory will need to be a joint effort of JVITO and JVAO.

- B: Examine the possibility of integrating more data into the admission system. List the additional data needed for managing SOLIS-ID, but UB has to explore how to collect them in the Admissions platform.

UB will identify which data are required by all nine partners and in which timeframe. This is in progress. However, there is a data protection issue: we can not ask for data not needed for the specific process of admission.

- C: Look into the options for a rolling admissions process. This has an impact on the admissions algorithm, which is in place to ensure diversity.

As it was discussed earlier, this was put on hold.

**Table 41** Actions, solutions and comments for the enrollment-phase student journey bottlenecks

<b>Bottleneck</b>	<b>Actions, solutions, comments</b>	<b>Status</b>
13. There are many difficulties with finding accommodation in Utrecht and Dublin.	Timely communication upon acceptance is provided to the applicant in order to arrange accommodation.	solved
14. Pre-arrival information can only be sent out when the list of enrolled students is clear.	A list of enrolled students is available earlier.	solved
15. Conditionally accepted students do not receive answers during the month of August. This month is critical because of visa, housing, and tuition fees/grant payments.	Admissions resolutions are always signed before August. The instruction session (part of the retention activities) organised by JVAO helped, as there were fewer questions this year.	solved
16. Conditionally accepted students don't have information on their previous/BA/BSc diploma statuses, and they cannot meet the deadline (incoming continuous emails from students regarding this topic).	JVAO will organise a webinar to help students who have these issues in a personal way. This is also part of the retention activities.	solved
17. The other JVAOs cannot answer or help students with enrollment because they do not know exactly what certified	JVAO shared their knowledge during the Montpellier meeting. This is also part of the retention activities.	solved

documents are required for complete enrollment.		
18. Share knowledge and educate other JVAOs on the enrolment requirements at UB. Prepare standard communication in advance.	A mini-handbook can be prepared. This step-by-step guideline/checklist can be shared with students as well.	to do
19. When new students or 2nd-year students miss the window to pay, there are issues. The window is very short and, therefore, easy to miss.	Due to the UB system, this cannot be changed. UB informs the students about this.	unsolvable
20. UB opens the enrollment platform, and it closes after a short period. It is not possible to have two platforms (Phase 1 and Phase 3) open at the same time.	The platform is short-open because UB is available to help students enrol in these slots. If someone can not enrol in the specific slot, the platform can be reopened again. Registration for Phases 1 and 3 has different deadlines.	unsolvable
21. Start enrolment/registration sooner. Start enrolment/registration at UU before full acceptance so students have a SOLIS-ID sooner.	The main issue is the data transfer from UB to UU administration. Earlier delivery of datasets from UB looks possible. The inclusion of an identifier in the UB data sets makes it faster. The arrangements to standardise the formats of the data fields are still to be made. Full enrollment cannot be completed much earlier; however, registration for SOLIS-ID starts sooner (tuition fee payment at UB is around mid-July).	solved with follow-up
22. Registration and administration procedures at UB take considerable time to complete; thus, registration at other universities is blocked.	A list of enrolled students was available earlier, and the UB identifier was added to all versions of the application lists. However, this is not a long-term solution.	solved with follow-up

The one bottleneck related to the study phase is 23. It would be helpful to ensure students receive their mobility grants well in advance of mobility dates.

There seem to be two main reasons for this:

- Some international offices are understaffed. This is a general issue, and the JVAO cannot do anything about it.
- The CHARM-EU Erasmus call delays the start of the local procedure for some universities (UU, UM, TCD).

Proposed actions:

- WP5 can reach out to international offices to explain the importance of timely payments.

- WP5 can change the procedure for the Erasmus call, for example, not making it mandatory for all master's students but only for those universities that need it.
- JVAO can communicate to students that they need a backup plan in case the payments are not made on time.

This item is under 'to do' status.

The graduation-related bottleneck is 24. The Diploma Certificate signing procedure makes students wait for a long time.

As handing out diplomas with digital signatures is a very large undertaking, digitally handing out the extensive diploma supplement should be the main focus for now. The supplements are also currently signed by hand and handed out to the graduates both physically and digitally (scanned). It would make sense to have a physical diploma and only a digital supplement.

The diploma supplement should be created and signed digitally with a verified digital signature, and it doesn't need to be signed by everybody but by maybe one CHARM-EU representative and the chair of the Board of Examiners. Both the technical and the data privacy aspects should be considered.

The next step is to ask all the CHARM-EU partners whether digitally signed diplomas and diploma supplements are possible in terms of their legislation.

This item is under 'in progress' status, and it is tackled mainly by WP7.

As an overarching follow-up action, D: Have a 'virtual' shared self-service multi-phase CHARM-EU platform raised. This platform could potentially solve many bottlenecks. WP7 is looking into features required for an Admissions/Enrollment system, which is 'in progress'.

#### **7.1.3.7. REVIEW FINANCIAL INCLUSIVITY AND EXPLORE OPTIONS TO PROVIDE GRANTS**

The financial inclusivity aspects of the programme were discussed with the DEI team on 4 March 2024.

- Even though the cap on the share of non-EU students has been discarded, we need to find a way to be more inclusive with the non-EU tuition fees, which are very high. We need to fully investigate our institutional grants and our eligibility for grants from the Global South.
- The CHARM-EU Social Inclusion Grants are handled and awarded by the DEI team (final approval by the Programme Board/Academic Council and Executive Board). There is a DEI budget that might turn into grants for non-EU students. DEI team investigates the terms and conditions.
- Some stakeholders and extra-academic actors might be contacted and asked to provide sponsorship for students. The DEI team will liaise with WP13 and WP15.
- New partner higher education institutions are required to collate options and opportunities for scholarships and grants available locally.
- These actions are led by the DEI team, as they fall under their scope.

#### 7.1.3.8. INVESTIGATE NEW COLLABORATIONS AND PARTNERSHIPS WITH INDUSTRY THAT COULD PROMOTE THE MASTER'S (ALIGNMENT WITH WP13)

Extra-academic actors and collaborations should also be explored to reach a broader target audience of potential students. WP13 (External Relations Strategy) and WP15 (Worldwide Non-Academic Stakeholder Consolidation and Expansion) are working on these relations and strategies. Here are some ideas linked to their activities that could promote the Master's in Global Challenges for Sustainability.

- Utilise established connections with local communities and key stakeholders to identify potential industry partners that align with the programme's objectives. Collaborate with companies in renewable energy, conservation or sustainable development.
- Invite industry professionals to deliver guest lectures, lead workshops, or even co-teach courses. This can be promoted as a unique selling point of the Master's programme.
- Establish regional hubs or partnerships in key locations across Europe, where industry leaders can directly engage with the programme and offer insights, internships, and research opportunities (for the Experiential and Capstone phases) to Master's students.
- Utilise the needs analysis framework to strategically identify industry partners that fill gaps in the Master's programme or enhance its strengths. This process will ensure that new collaborations are aligned with CHARM-EU's mission and values, contributing to the program's growth and relevance.
- Establish CHARM-EU incubator hubs that facilitate collaboration between students, alumni, and industry partners to build start-ups, social movements, and innovation projects. These hubs can be a focal point for attracting industry partners interested in investing in young talent and innovative ideas.
- Explore linkages to regional, national, and European funding sources to support the scaling of successful incubator projects. Industry partners can provide mentorship, resources, and funding, making the Master's programme attractive to entrepreneurial students.
- Build a strong alumni network that includes industry professionals who have graduated from the Master's programme. This network can be leveraged for mentoring current students, offering internships, or creating job opportunities.
- Engage industry partners through the Sustainability Challenge Platform, where they can post challenges relevant to their fields. Master's students can work on these challenges as part of their coursework, internships, or research projects, creating direct value for industry partners while enhancing their learning experience.
- Develop research proposals in collaboration with industry partners to address the challenges posted on the platform. This could lead to long-term partnerships, co-funded research, and even team-based doctoral programs that align with industry needs.
- Build specific initiatives around engaging industry partners who are committed to diversity, equity, and inclusion. This could include exploring scholarships for marginalised students, developing global hybrid classrooms, or engaging with industry leaders who prioritise social responsibility.

- Partner with industries to fund scholarships and continuous education programmes for students from marginalised groups in Europe and the Global South. This will not only attract a diverse student body but also strengthen the Master's programme's global reach and reputation.
- Establish a continuous feedback loop with industry partners to refine and improve engagement strategies, ensuring that the Master's programme remains relevant and financially sustainable in the long term.
- Develop customised communication materials that highlight the benefits of collaboration with the Master's programme for different types of industry partners. This could include brochures, case studies, and digital content that showcase successful collaborations, innovative research, and the societal impact of the programme.

These analyses to increase the number of students in the Master's in Global Challenges for Sustainability have considered the admission procedure, criteria and timeline, marketing and promotion, student journey bottlenecks with the main focus on admission and registration, and financial inclusivity and provided recommendations and actions.

## 7.2. BROADEN THE TARGET GROUP OF OUR MASTER'S

### 7.2.1. INTRODUCTION AND TASK AIM

The main task of the WP3.2 *Scale-up plan to increase the impact of the Master's Global Challenges for Sustainability* is to develop a plan and implement it to scale up the impact of CHARM-EU and the Master's programme.

This document outlines the process and outputs for achieving the aims of the following sub-task: broaden the target group of our Master's (e.g. more variety in discipline, diverse backgrounds, own lived experiences, and access needs and nationality).

### 7.2.2. PROCESS

The process of this sub-task involves:

- a. Analyse the background, discipline and nationality breakdown and gaps in admission
- b. Review inclusivity of the admission, including share of non-EU students, inclusivity points and learning needs
- c. Recommend targeted reach out to students
- d. Investigate how to increase and maintain the alumni network
- e. Review financial inclusivity and explore options to provide grants.

The tasks of 3.2.2. involved consultation and engagement with the DEI team and WP16.

### 7.2.3. TASK OUTPUTS

#### 7.2.3.1. ANALYSE THE BACKGROUND, DISCIPLINE AND NATIONALITY BREAKDOWN AND GAPS IN ADMISSION

UB, as the main responsible partner university for admission to the Master's in Global Challenges for Sustainability, provided the admission data for analysis. The data could give insights into the geographical representation of enrolled students based on their nationality, the disciplinary background based on their bachelor's degrees and the share of males and females.

The analysis revealed:

- Dominance of Western European students, especially Dutch and German
- Minor representation of Southern European students, they are mainly Spanish and Italian
- Minimal share of Central and Eastern European students as well as non-European
- Only 1–2 students per cohort from the Northern European region
- Increasing representation of non-European students
- Around ½ of the cohorts come from SBL (Social Sciences, Business, Law), ⅓ from STH (Science, Technology, Health) and ⅙ from AHE (Arts, Humanities, Education) backgrounds
- Around ¾ of the students are female, and ¼ are male
- The shares of the three investigated aspects are generally the same over the cohorts.

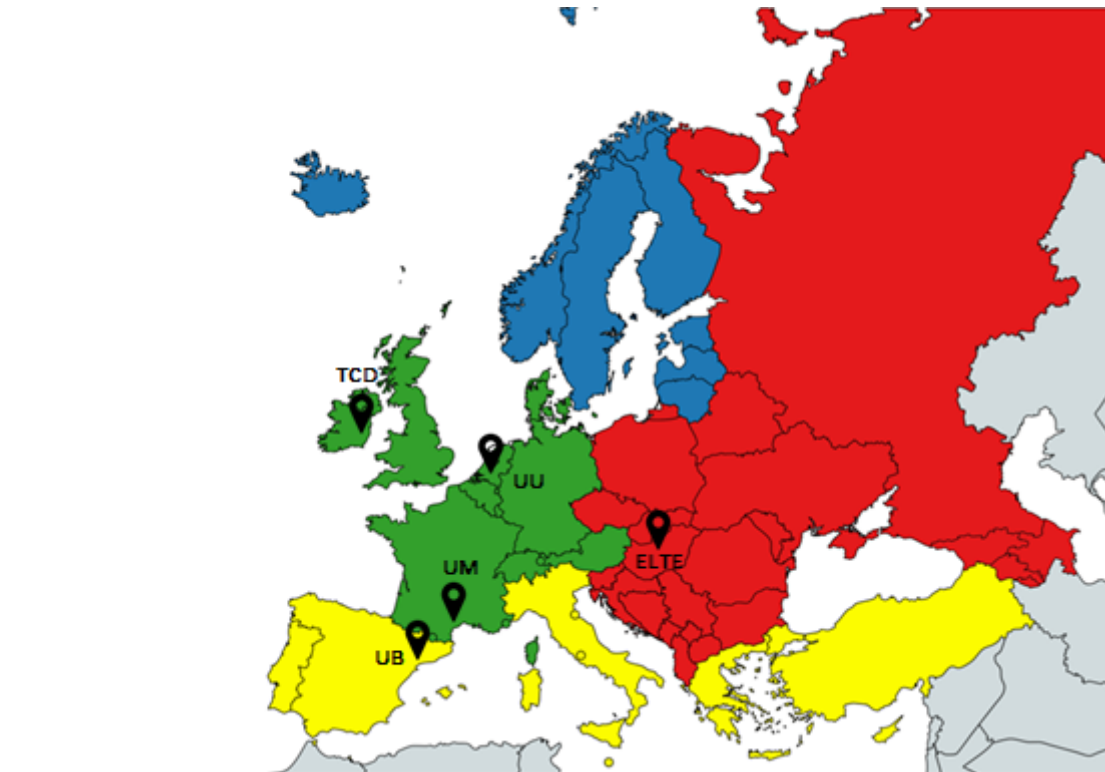
**Table 42** Distribution of students' backgrounds for the first three cohorts in terms of geographical areas, disciplines and gender

	Cohort 1	Cohort 2	Cohort 3
number of enrolled students	70	67	66
<b>geographical areas</b>			
Northern Europe	1%	1%	3%
Southern Europe	16%	13%	20%
Western Europe	71%	70%	61%
Central and Eastern Europe	6%	7%	5%
Non-European	6%	7%	12%
<b>disciplines</b>			
AHE	19%	21%	12%
SBL	53%	43%	59%
STH	28%	36%	29%
<b>gender</b>			
male	26%	23%	27%
female	74%	77%	73%

(AHE: Arts, Humanities, Education; SBL: Social Sciences, Business, Law; STH: Science, Technology, Health)

The reasons for the distributions could be:

- Sustainability and climate change-related topics and initiatives are in the spotlight in the Western European region
- Three partner universities of the joint degree are located in Western Europe
- There is no participating university in the Northern European region for the 90 ECTS Master's in Global Challenges for Sustainability
- Tuition fees (6.3 times higher) and relocation costs are considerably higher for non-European students
- Many European higher education institutions in various countries offer tuition-free programmes for European citizens
- Global Challenges for Sustainability is a Master of Sciences programme which students with a Bachelor of Arts (AHE background) may find out of their interest or too technical
- Females are generally more concerned about sustainability than men and tend to be more engaged with this topic<sup>1,2</sup>.



**Figure 25** The five core partners of CHARM-EU and the European regions according to EuroVoc, the classification used during the admission

The analysis identified the main target audience gaps:

- Northern European students
- Central and Eastern European students
- Non-EU students
- Students with AHE backgrounds
- Male students.

#### **7.2.3.2. REVIEW INCLUSIVITY OF THE ADMISSION, INCLUDING SHARE OF NON-EU STUDENTS, INCLUSIVITY POINTS AND LEARNING NEEDS**

The following actions were taken related to the inclusivity aspects.

- The Programme Board decided to remove the limit on the share of non-EU students (formerly 10%) for the upcoming cohorts on 21 December 2023.
- The inclusivity aspects of the admission procedure were discussed with the DEI team on 8 January 2024. The following improvements were suggested and implemented.
  - **Inclusion points:** Based on the previous experience, the practice of either eligible (10) or non-eligible (0) for the 10 inclusion points is brought forward.
  - **Timeline clarity for the DEI team:** As in most cases, the inclusion consideration of applicants cannot be proved by any documentation, only by understanding the applicants' circumstances through an individual interview, the DEI team needs a

clear timeline of the admission rounds and deadlines of evaluation. Also, that's why the granting of inclusion points cannot be automated.

- **Communication:** Improvements in the communication explaining the overall process of inclusivity consideration, including the timeline and deadlines for applicants, were suggested and implemented by the DEI and JVAO. The following paragraph is displayed on the admission portal: *„In order to ensure access and inclusion, applicants from under-represented communities (in terms of age, gender, family status, disability, sexual orientation, race and ethnic origin, religion, migration status, membership of the Roma and Traveller communities, and socio-economic background in all aspects of higher education, among others), that wish to be considered for these 10 additional points can indicate this on their application. Once those applicants have correctly uploaded the application documents by the deadline, they will then be contacted by a member of the DEI Team and invited to provide a relevant rationale by way of a short explanation with regards to barriers in their educational journey and/or underrepresentation in Higher Education. Where appropriate, applicants can provide supporting documentation (e.g. medical report confirming disability/document in relation to socio-economic status). Ticking the box to be considered for inclusivity points is optional for the applicant.”*
- **Application requirements:** The application requirements were reconsidered in a more open and inclusive way. The applicants can select the format/type of their submission: for the product on a specific and local challenge related to sustainability, the format is selected by the candidate, some options but not limited to essay, poster, video, booklet, pamphlet, podcast, mindmap; and the recording answering the predefined interview questions can be video or audio.
- The learning needs of master's students were discussed in the form of a focus group meeting with the Programme Board (PB) members on 19 March 2024. The PB will aim to implement these changes in the upcoming cohort.
  - If the number of students is increasing, the Programme Board need to ensure more streamlined solutions, e.g. policies and practices, in the day-to-day implementation of the master's programme following the 'inclusion by design' approach.
  - Reconsideration of the 'non-EU' term was suggested: the focus should be rather on race and ethnic diversity in addition to EU/non-EU.
  - Regular breaks during the teaching days are provided for students to move around, not imposing any rules on staying in the classroom.
  - Some assessments are flexible in format delivered by the student as long as the content achieves the task given.
  - There is some flexibility around deadlines by allowing extensions, particularly related to unforeseen circumstances.
  - Early and ongoing communication of the inflexibilities of some high-key deadlines is essential, e.g. for the Portfolio Assessment Committee, so students clearly know what to expect and see the boundaries.

- The learning outcome of group work is made explicit to students from the start, and students are required to learn to manage collaboration in respectful ways.
- Some students mentioned that being able to hold a part-time job is very important and financially essential to them. They understand that this is largely their responsibility, but considering the master's focus on inclusivity, they hoped that the possibility of taking a part-time job would be considered. Factors that are important for students are:
  - Classes being regular (starting and ending at predetermined times)
  - Knowing early on when increased self-study is required
  - Class dates and times are communicated early and not changed at the last minute.

### **7.2.3.3. RECOMMEND TARGETED REACH OUT TO STUDENTS**

Some strategies to address the target audience gaps:

- To increase the overall diversity in applicants to the master's programme, developing marketing strategies to showcase a diverse range of students, including male students, should be implemented. To further increase the number of male applicants, the use of male spokespeople/role models in marketing could be considered. Likewise, students of under-represented communities.
- Collaborating with undergraduate programmes in the partner universities (and beyond) would aim to engage students early in their academic journey, which may increase the likelihood of them considering CHARM-EU for postgraduate study. Engagement with undergraduate programmes across multiple disciplinary backgrounds could encourage diversity in the disciplinary backgrounds of applicants.
- Exploring new collaborations and partnerships with industry and universities based throughout Europe and beyond to attract applicants coming from diverse geographical regions. This is linked to the work of WP13 and WP15.

Furthermore, WP16 and its 'CHARM-EU Educational Marketing Strategy' formulated the overarching goals and marketing elements of the Master's in Global Challenges for Sustainability. This strategy was consulted with WP3.2 and finalised in December 2023. The following parts come from the 'CHARM-EU Educational Marketing Strategy' document.

"The main goals of this strategy regarding the Master's are:

- To recruit students to the Master's program
- Annual student recruitment targets
  - EU students
  - Non-EU students
- To diversify the student population in terms of geographical location, background and gender
- To make the CHARM-EU Master's a desirable program for students, staff and external stakeholders to engage with
- To improve the visibility and information of the master within CHARM-EU channels (website, social media, newsletter, etc.)

#### Secondary goals:

- To boost and consolidate CHARM-EU brand identity at the national, regional and international levels by using the visual identity manual and dissemination strategy.
- To reinforce the cooperation with university staff, academic and external stakeholders consolidating an international European university community.”

“The target groups are graduates of any discipline seeking to acquire advanced knowledge of sustainability by addressing global societal challenges, developing challenge analysis skills, and extending their capabilities to address complex problems.

#### Geographical profile

- Graduates from the CHARM-EU universities and other European HE institutions, including non-Western European institutions
- Graduates from non-European HE institutions

#### Educational profile

- Students with a bachelor’s and/or a former Master's degree, former students who are already working (life-long learners)
- Multidisciplinary audience who wishes to develop and build expertise on sustainability, transdisciplinary and solutions to global challenges
- Diverse and motivated students from multidisciplinary backgrounds seeking to work in sustainability in a transdisciplinary context, social innovation, and action within new or existing businesses or move into academic research
- Students/interns from global institutions/NGOs

#### Behavioural profile

- Students with interests in international challenges and international learning environments
- Students not trying to engage in a classical path, looking for novelty, something different and more tailored
- Entrepreneurial
- Students looking for the opportunity to make a change, to have an impact on the world they live in
- Actively involved in their community life and committed to developing a more sustainable way of living
- Students seeking to acquire knowledge on society and sustainability topics
- Innovative and ambitious
- Students interested in sharing their knowledge and embracing transdisciplinary learning
- Interested in global challenges
- Interested in a non-traditional approach to research, teaching and learning
- Entrepreneurial, self-motivated with good collaboration skills
- Able to engage with diverse groups of stakeholders
- Interested in tackling complex real-world problems using a transdisciplinary approach.”

“The objectives of the educational marketing strategy are:

- Attract diverse and motivated learners: Recruit a diverse and motivated cohort of learners who are passionate about addressing global sustainability challenges and other societal challenges.
- Increase awareness: Raise the visibility of the CHARM-EU offers among more diverse groups of prospective students and key stakeholders in the higher education sector.
- Enhance reputation: Strengthen CHARM-EU's reputation for excellence and innovation in transdisciplinary education.
- Boost learner's satisfaction: Ensure that learners have a positive and enriching learning experience that meets their expectations and aspirations.

Considering the elements described above, WP16 has developed a series of actions to communicate about the CHARM-EU educational offers with the aim of supporting the recruitment of students. As with the Communication and Dissemination strategy, there are three main strategic lines which will be used in all the educational offers:

- At the CHARM-EU level
- Through each partner institution's communication channels
- External channels at national, regional and international level.

CHARM-EU's Mission and Vision will be included as part of the communication in order to reinforce the brand (secondary goal). The communication strategy and the branding guidelines will be used to disseminate a coherent message through the different channels."

"Marketing channels:

- CHARM-EU Social Media (Instagram, Facebook, Twitter, LinkedIn, and YouTube)
- CHARM-EU Website ([www.charm-eu.eu](http://www.charm-eu.eu))
- Each partner university's social media channels
- Each partner university website and intranet
- External websites ([topuniversities.com](http://topuniversities.com), [mastersportal.com](http://mastersportal.com), [masterstudies.com](http://masterstudies.com))

Communication kit:

- Main message
- Specific webpage
- Digital poster (Wall/Stories/Web)
- Digital brochure
- Promotional teaser
- News article
- Social Media hashtag
- Keywords
- Testimonials from students, academics, researchers, staff and other stakeholders."

"The educational offers can be promoted through the channels below:

- News items
- Organic posts (on feed/grids of core social media channels)
- Reels
- Stories
- Testimonials
- Interviews
- Podcasts
- Paid advertisement on Facebook and Instagram."

“The main aim is to raise awareness of the CHARM-EU offerings, highlighting the unique selling points and practical information on how to apply.

- CHARM-EU online informative sessions, which will be held in English and open to all learners interested in CHARM-EU educational offers
- Local informative sessions in partner universities, which will be designed by each partner to try to reach their own students
- If possible, partner universities will promote CHARM-EU offerings in their own universities’ open days.”

Furthermore, the CHARM-EU website is being redesigned and restructured to create more visibility of information regarding the Master’s in Global Challenges for Sustainability and other educational offers.

#### **7.2.3.4. INVESTIGATE HOW TO INCREASE AND MAINTAIN THE ALUMNI NETWORK**

Some strategies addressing maintaining the alumni network:

- Keep the members informed about relevant updates, upcoming events and (job) opportunities through regular newsletters, emails, or social media posts. Platforms like LinkedIn, Facebook, or dedicated alumni websites can serve as hubs for alumni to connect, share experiences, and network professionally.
- Keep the members involved in shaping the future of the master’s programme.
  - The alumni network has been consulted during the extension of the programme already. The network might be surveyed in the future for any further changes related to the Master’s.
  - The network members might be invited to:
    - submit Capstone challenges and act as stakeholders due to their professional work
    - give guest lectures in the master’s programme
    - participate in the Cross-Thematic Blended Intensive Programmes
    - provide their insights at the local Open Days to promote the master’s programme
    - attend the annual conferences
    - be engaged with CHARM-EU and its WP13 and WP15 networks.
- Keep the members actively engaged by organising regular events, reunions, workshops or webinars specifically for alumni. These events provide opportunities for networking, professional development, and reconnecting with former classmates and academic staff.
- Promote lifelong learning and professional development opportunities to the members to help alumni enhance their skills and stay updated in their respective fields, e.g. micro-credentials.
- Establish mentorship programmes where alumni can mentor current students or recent graduates. This fosters a sense of giving back to the community and creates valuable connections between alumni and current students.

- Create local alumni chapters in the cities offering the master's programme. These local chapters can organise events and activities tailored to the interests and needs of the local alumni.

Overall, the alumni network members can serve as ambassadors of the master's programme to promote it in their professional networks.

The Alumni network was discussed by the Programme Board (PB) on 6 June 2024. The PB proposed to establish a Task force to manage the alumni network and its activities. The proposed composition: a representative of WP16, a representative of JVAO, a representative of PB and a representative of students. The Alumni network was discussed by the Executive Board (EB) on 13 June 2024. The EB supported the establishment of the Task force, and an additional representative of the EB volunteered to join. The EB suggested joining and aligning the efforts and including other relevant groups, e.g. the Student Council, European Student Assembly and WP 9.2 *Creation of working groups of staff and students on partner universities' central common services for sharing knowledge and good practices*. The Task force will explore the needs of students and alumni members, and formulate a general strategy.

#### **7.2.3.5. REVIEW FINANCIAL INCLUSIVITY AND EXPLORE OPTIONS TO PROVIDE GRANTS**

The financial inclusivity aspects of the programme were discussed with the DEI team on 4 March 2024.

- Even though the cap on the share of non-EU students has been discarded, we need to find a way to be more inclusive with the non-EU tuition fees, which are very high. We need to fully investigate our institutional grants and our eligibility for grants from the Global South.
- The CHARM-EU Social Inclusion Grants are handled and awarded by the DEI team (final approval by the Programme Board/Academic Council and Executive Board). There is a budget of DEI, that might be turned grants for non-EU students. DEI team investigates the terms and conditions.
- Some stakeholders and extra-academic actors might be contacted and asked to provide sponsorship for students. The DEI team will liaise with WP13 and WP15.
- New partner higher education institutions are required to collate options and opportunities for scholarships and grants available locally.
- These actions are led by the DEI team, as they fall under their scope.

### 7.3. RECRUIT KCT MEMBERS FROM NEW PARTNERS

#### 7.3.1. INTRODUCTION AND TASK AIM

The main task of the WP3.2 *Scale-up plan to increase the impact of the Master's Global Challenges for Sustainability* is to develop a plan and implement it to scale up the impact of CHARM-EU and the Master's programme.

This document outlines the process and outputs for achieving the aims of the following sub-task: recruit Knowledge Creation Team (KCT) members from new partners.

#### 7.3.2. PROCESS

The process of this sub-task involves:

- a. Analyse knowledge and human resource gaps within KCTs, including diversity
- b. Prepare a call for recruiting KCT members from new partners.

The timeline to achieve this sub-task:

1. 5 December 2023

KCT survey was sent out to P1, P2 Food, P2 Life&Health, P2 Water and Capstone to:

- list the current KCT members and their academic discipline
- identify missing partner institutions
- identify missing expertise.

2. 15 January 2024

KCT lists of P1, P2 Food, P2 Life&Health, P2 Water and Capstone were completed

- Knowledge gaps were identified by some of the KCTs
- Human resources gaps were identified by the KCTs
- Diversity of academic staff was analysed using the International Standard Classification of Education (ISCED) framework

3. 29 January 2024

A call for KCT members was sent out to old and new partners by the Academic Council after a discussion on a general renewal of KCT members.

4. 15 February 2024

Updated KCT lists were approved by the Academic Council with the following considerations:

- Some partner universities will add their representatives at a later stage.
- Maximum of three representatives per KCT and university, excluding educationalists. Four representatives might be allowed if they represent different disciplines/expertise.
- P2 Energy/Sustainable Cities KCT list was added.

Diversity of academic staff was analysed using the International Standard Classification of Education (ISCED) framework

5. 19 February 2024

An information email containing the tasks, timeline and related resources was sent out to all KCT members

- Task 1: Accreditation Proposal Updates
  - Sections of the proposal require updating since its initial approval based on (2bI, 2bII, 2c, 6i, 6ii):
    - Changes made since its initial implementation (e.g. Module Learning Aims, Module Learning Outcomes, Teaching Staff, Contact Hours, etc...)
    - Recommendations made from Phase Review surveys
    - Reviewing modules for any content gaps
    - Addition of new teaching staff.
- Task 2: Integrate new partner staff into your module teaching  
As part of updating the Master's, we are seeking to integrate teaching staff from our new partners. These are included in the overall KCT list. To achieve this:
  - Educationalists should ensure that new KCT members are trained in CHARM-EU educational principles and any other information required for their participation.
  - Their details are added to any KCT communications.
  - Involve them in the module updating process by participating in your KCT meetings, e.g. updating the content, teaching and learning activities, and assessment.
  - Involve them in teaching in 2024 to prepare them for 2025, e.g. as guest lecturers, assessors, supervisors, second readers, and challenge providers.
- Timeline
  - February 27th at 12 GMT / 13 CET / 14 EET: Q and A session for any questions, especially for the new partners.
  - February – March: Update documentation and integrate new partners into KCT
  - 25th March at 12 GMT / 13 CET / 14 EET: The final revised proposal document for the modules should be updated on Sharepoint.

6. 19 February 2024

KCT lists were made available under the general Address book on UB SharePoint

7. 27 February 2024

Q and A session organised to provide more information to KCT members

8. 7 March 2024

Final approval of the KCT lists by the Academic Council

### 7.3.3. TASK OUTPUTS

The completed KCT surveys provided the following insights:

- Some KCTs indicated internal knowledge gaps:
  - Phase 2 Food: Food waste management and recovery of nutrients from food waste; Agroecology; Food nutrition; Qualitative and quantitative food system evaluation
  - Phase 2 Water: Marine and freshwater biology – Ecology; Water and arts, ecocriticism; Climatology; Social sciences; Sanitation – Public health
  - Capstone: Humanities; History; Decolonial studies; Engineering.
- The five old partner institutions were generally represented in each KCT.
- Some of the new partner institutions were already involved in some KCTs; they provided mostly educationalists.
- The diversity of academic staff within the KCTs showed a balanced representation of the three disciplinary groups: AHE: Arts, Humanities, Education; SBL: Social Sciences, Business, Law; STH: Science, Technology, Health based on the International Standard Classification of Education (ISCED) framework.
- There was a balanced representation of institutions within the KCTs. Some institutions had larger shares due to student allocation, e.g. Life&Health, offered only at ELTE, and Water, offered only at UM.

**Table 43** Institutional and disciplinary representations within the six Knowledge Creation Teams based on the survey of early January 2024

	Phase 1	Phase 2			New Phase 3	Capstone
		Water	Food	Life&Health		
number of members	14	12	9	15	13	11
ELTE	7%	8%	22%	47%	8%	9%
TCD	14%	8%		13%	15%	18%
UB	21%	17%	33%	20%	15%	18%
UM	14%	33%	22%		8%	18%
UU	36%	17%	22%	20%	15%	27%
ÅAU		8%			23%	
HRW	7%	8%			8%	
JMU						9%
UiB					8%	
disciplines						
AHE	36%	33%	33%	20%	31%	27%
SBL	36%	25%	44%	33%	15%	27%
STH	29%	42%	22%	47%	54%	45%

(ÅAU: Åbo Akademi University; ELTE: Eötvös Loránd University; HRW: Ruhr West University of Applied Sciences; JMU: University of Würzburg; TCD: Trinity College Dublin; UB: University of Barcelona; UiB: University of Bergen; UM: University of Montpellier; UU: Utrecht University; AHE: Arts, Humanities, Education; SBL: Social Sciences, Business, Law; STH: Science, Technology, Health)

The updated KCT lists provided the following insights:

- All KCTs have been enlarged by an average of three representatives.
- Representation of the five old partner institutions has been improved.
- Representation of the four new partner institutions has been significantly improved. ÅAU and JMU have representatives in almost all KCTs. However, the representation of UiB remained limited.
- The diversity of academic staff within the KCTs showed a representation of the three disciplinary groups: AHE: Arts, Humanities, Education; SBL: Social Sciences, Business, Law; STH: Science, Technology, Health based on the International Standard Classification of Education (ISCED) framework (see Table 2). In some cases, the representation was unbalanced, e.g. P2 Food, P2 Life&Health and New Phase 3 KCTs. The most unbalanced is the P2 Energy/Cities KCT, with a minor representation of SBL and a predominant share of STH.
- Representation of institutions within the KCTs has been more balanced.
- P2 Food had the least institutional representation and had only five partner universities represented.
- Some internal knowledge gaps were addressed:
  - Phase 2 Food: experts in Agroecology and Food nutrition were added to the KCT
  - Phase 2 Water: experts in Social sciences were added to the KCT
  - Capstone: an expert in Engineering was added to the KCT.

**Table 44** Institutional and disciplinary representations within the seven Knowledge Creation Teams after a general renewal and incorporation of new partners in mid-February 2024

	Phase 1	Phase 2				New Phase 3	Capstone
		Water	Food	Life&Health	Energy/Cities		
number of members	17	16	12	20	22	13	13
ELTE	6%	6%	17%	25%	14%	8%	8%
TCD	12%	6%		15%	18%	8%	15%
UB	12%	13%	25%	15%	14%	15%	15%
UM	24%	25%	33%	20%	18%	15%	15%
UU	18%	13%	17%	15%	5%	15%	23%
ÅAU	18%	19%		5%	14%	23%	8%
HRW	6%	6%				8%	
JMU	6%	13%	8%	5%	14%		15%
UiB					5%	8%	
disciplines							
AHE	41%	31%	25%	20%	18%	31%	23%
SBL	18%	25%	17%	20%	5%	15%	31%
STH	41%	44%	58%	60%	77%	54%	46%

(ÅAU: Åbo Akademi University; ELTE: Eötvös Loránd University; HRW: Ruhr West University of Applied Sciences; JMU: University of Würzburg; TCD: Trinity College Dublin; UB: University of Barcelona; UiB: University of Bergen; UM: University of Montpellier; UU: Utrecht University; AHE: Arts, Humanities, Education; SBL: Social Sciences, Business, Law; STH: Science, Technology, Health)

## **8. EXPLORATION OF ALTERNATIVE THEMES FOR THE SECOND SEMESTER (FLEXIBLE PHASE) OF THE PROGRAMME**

### **8.1. TASK AIM**

From 2021 - 2024, the Master's had three flexible thematic areas: Food, Water, and Life & Health. This sub-WP explored the possibility of new themes for the flexible phase of the Master's in Global Challenges for Sustainability for its reaccreditation in 2024/2025.

The aim of this sub-WP is to research, evaluate and recommend the optimum new theme for Phase 2.

Optimum is defined in terms of:

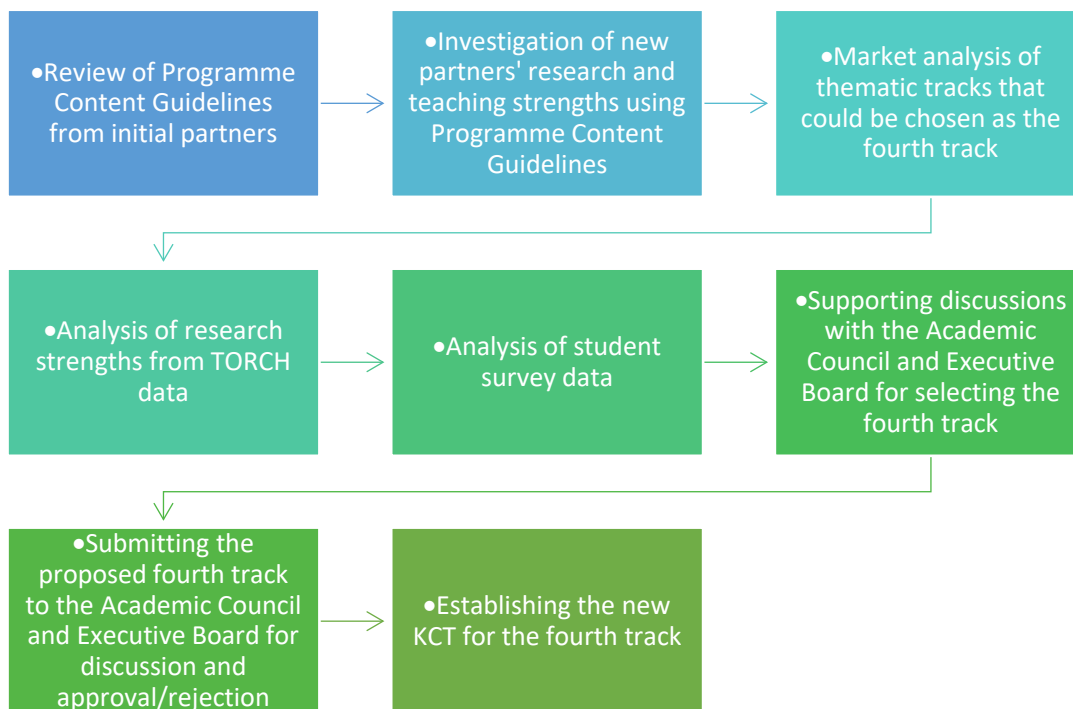
- Broadening the target group of students and increasing numbers (3.2)
- Integration and alignment with Phase 1, Phase 2, new Phase 3 and Capstone of the Master's
- Alignment with CHARM-EU and institutional strategic themes
- Alignment with market trends and external needs
- Alignment with CHARM-EU educational principles

This task originates from this segment of text from the CHARM8 proposal

*“All the previous evaluation obtained as an output of the previous project will be used for the review. The activities will include the exploration of alternative themes for the second semester (flexible phase) of the programme, (...).”*

### **8.2. METHODOLOGY**

To establish the optimum new theme for the flexible phase for the re-accredited Master's, the following methodology was employed:



**Figure 26** Methodology to establish the optimum new theme for the flexible phase for the re-accredited Master's

### 8.2.1. REVIEW OF PROGRAMME CONTENT GUIDELINES FROM INITIAL PARTNERS

WP3.1 investigated previous programme content guidelines documentation, created by the initial CHARM-EU project. In this documentation, five core alliance partners explored the key research and teaching themes within their institution to create the three thematic tracks for the Master's. The tracks that were chosen were Food, Water, and Life & Health.

A further analysis of this documentation revealed that a fourth track, Energy, was supported by these analyses, but not implemented due to staffing and resource challenges.

WP3.1. sought to align this finding with our new partners. Thus, the new partners were tasked with completing the programme content guidelines for their institutions. A new version of the programme content guidelines was developed to standardize and clarify the approach.

### 8.2.2. INVESTIGATION OF NEW PARTNERS' RESEARCH AND TEACHING STRENGTHS USING PROGRAMME CONTENT GUIDELINES

The three new partners (AAU, JMU, HRW) used the updated programme content guidelines spreadsheet as a framework for exploring which potential themes would align with their research and teaching strengths. The following key areas were identified:

- AAU showed a strong capacity for the Energy track, and the potential for a Peace or Social track related to their Minority Research strategic theme.
- AAU could also integrate well into Life & Health, and Water.

- HRW showed a strong capacity for the Energy track.
- HRW could also integrate well into Life & Health, and Water.
- JMU is currently doing a call for teaching staff interested in working on the Master's. They have a strong capacity for Energy, and can integrate well into Life & Health, Food, or Water.
- JMU could also have a strong capacity for a Social track.

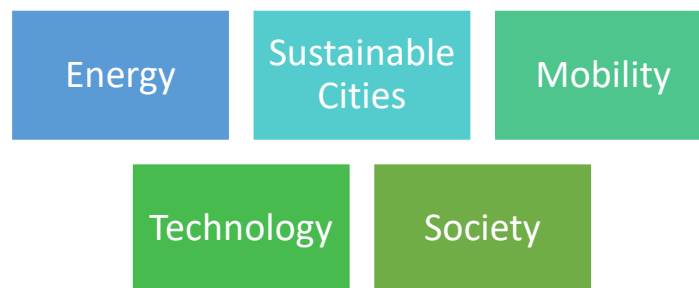
This initial investigation has supported the following recommendations:

- All new partners would be able to support teaching in the Energy track based on their research and teaching strengths.
- All new partners would be able to integrate well into existing tracks based on their research and teaching strengths.
- The analysis identified potential areas for an additional fifth track.

Based on the previous analysis of programme content guidelines, and the new partner programme content guidelines analysis, **the Energy track was recommended** as the optimum track from this perspective.

### 8.2.3. MARKET ANALYSIS FOR SELECTING THE FOURTH TRACK

This market analysis focuses on the demand for identified tracks and competition from other sustainability Master's with similar tracks. Five tracks were selected for analysis based on strengths in previous analyses related to research, teaching and strategic areas, namely Energy, Sustainable Cities, Mobility, Technology, and Society.



**Figure 27** Tracks selected for market analysis

The rationale for selecting these five tracks was:

- Energy was identified as the fourth potential theme using the Programme Content Guidelines from the 5 initial CHARM-EU partners. A subsequent analysis was conducted by the three new partners, with Energy also emerging as a relevant theme supported by teaching, research, and strategic strengths.
- Sustainable Cities was identified as a strong theme related to CHARM-EU research strengths conducted via a bibliometric analysis by TORCH. Mobility, Energy and Society could potentially be considered within this theme.

- Mobility was identified as a particular research strength for the CHARM-EU partners based on bibliometric data. In the Programme Content Guidelines, mobility was identified as a potential track.
- A Society track was identified in the Programme Content Guidelines for both the new and old partners.
- A Technology track was also identified in the Programme Content Guidelines for both new and old partners as a potential track.

The following methodological approaches were used to conduct the market analysis:

**Table 45** Methodological approach for market analysis

Focus	Methodology	Rationale
Master's programmes	Identification of the most common subjects taught at a Master's level in Europe	Identifying the most popular subjects taught can give some indication of the demand for certain subjects at this level.  Note that some data for this analysis is derived from commercial organizations and may not have strong legitimacy. However, it gives some indication of the market around certain tracks.
Master's programmes	Identification of thematic tracks for student flexibility in other European Sustainability Master's	Flexible thematic tracks within other Sustainability Master's programs help us identify key trends in this space.  This will support our analysis by providing information about thematic commonalities, and gaps in the market.
Track specific	Demand for track based on research	Investigate the demand for thematic tracks based on employment opportunities, public appetite, and future needs.  This will help us identify which track may have the greatest demand based on industry/societal needs.
Track specific	Collect information about postgraduate programs offered by	Ascertaining the current market in Postgraduate Programmes within the theme

	both partner universities, and other European universities in the theme	will demonstrate its perceived importance within our, and other universities.
Track specific	Identify direct competitors offering similar postgraduate programs	Identifying similar programmes will help us identify whether the market may be saturated, or if there will be strong competition for the track.

From these five specific actions, recommendations from a market analysis perspective were provided.

### 8.2.3.1. IDENTIFICATION OF THE MOST COMMON DISCIPLINES TAUGHT AT A MASTER'S LEVEL IN EUROPE

The current Master's in Global Challenges for Sustainability is transdisciplinary, and contains modules within Sustainability, Social Innovation, Transdisciplinary Research Skills, Food, Water, Life & Health, and a Capstone challenge. Identifying a fourth track could be supported by exploring the most common subjects taught and graduated in at a Master's level in Europe. This could broadly indicate the student demand based on the number of degrees in a particular discipline being offered by universities. In addition, the number of graduates by discipline could also indicate this.

Ideally, data from individual country educational departments and universities describing demand for disciplinary teaching would be analysed. However, this is not usually available in the public domain.

First, exploring course aggregator websites to identify the most common disciplines listed was conducted<sup>6</sup>.

**Table 46** List of Master's degrees by discipline in Europe from Studyportals.com

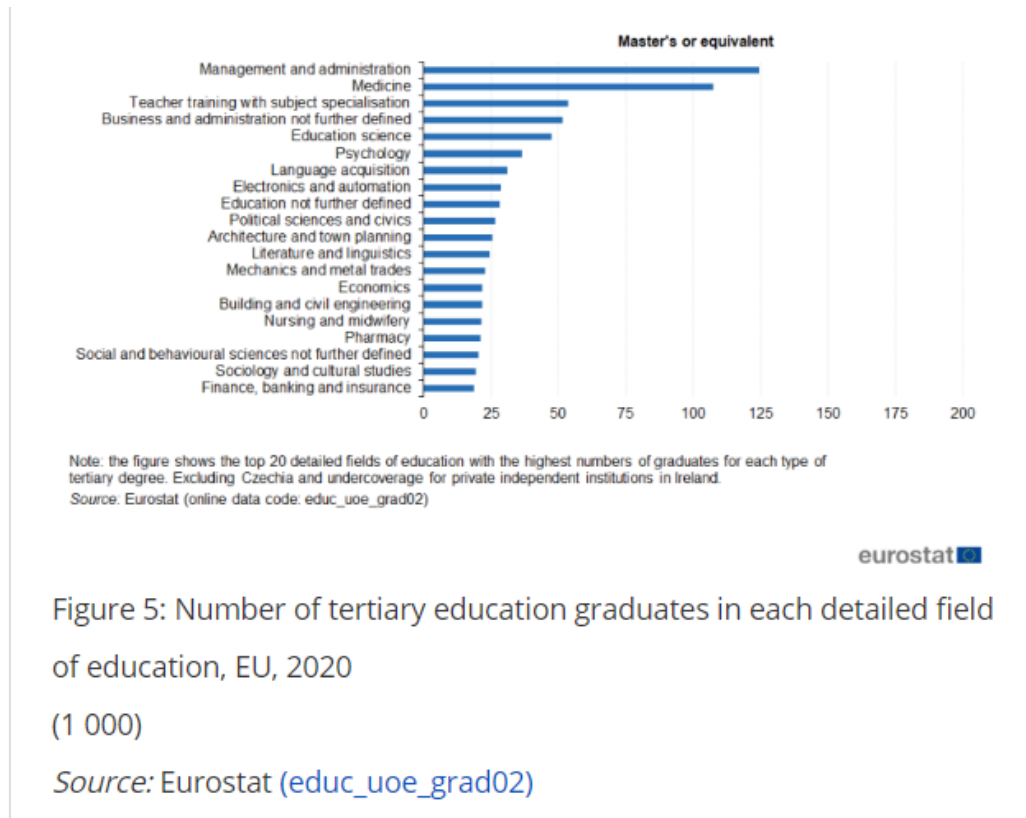
Field of Study	Number of courses listed
Business & Management	9518
Social Sciences	7509
Engineering & Technology	4738

<sup>6</sup> There are many limitations to this analysis including: many courses may not be listed, the categorization of certain degrees are multi-disciplinary and may not be within the correct category, the data source itself is a commercial website and the data cannot be checked for consistency, amongst many other limitations. However, as a broad exploratory analysis, it may support findings.

Medicine & Health	4605
Natural Sciences & Mathematics	4594
Computer Science & IT	3786
Humanities	3567
Arts, Design & Architecture	3290
Environmental Studies & Earth Sciences	2319
Education & Training	2144
Law	1718
Applied Sciences & Professions	1450
Hospitality, Leisure & Sports	968
Journalism & Media	962
Agriculture & Forestry	474

This data suggests that Business and Management, Social Sciences, and Engineering and Technology degrees are more commonly offered by universities in Europe at the Master's level.

Secondly, the number of Master's degree graduates was explored in Europe by discipline. Data from EuroStat<sup>7</sup> which documents the number of Master's graduates in Europe from different disciplines suggests that graduates from Management, Business, Medicine, Education, and Electronics were all disciplines with high graduate rates. Graduates from Social Sciences were much lower than the number of degrees offered.



**Figure 28** Eurostat data from number of graduates by discipline

These two data sources suggest:

- The number of degree courses provided by universities in a particular discipline does not mean that there are high numbers of graduates in these disciplines (i.e. the data from the two sources does not align). Thus the relevancy of this analysis can be called into question.
- However, business and management courses show strong demand in both the number of degrees offered, and the number of graduates.
- Engineering and Technology degrees have relatively high graduate rates, and have relatively high numbers of degrees offered.
- Social Science courses are offered in a high number of universities.

### 8.2.3.2. THEMATIC AREAS IN OTHER SUSTAINABILITY MASTER'S

An analysis was conducted of other similar sustainability Master's in Europe that had some form of student personalization choices, in the form of a thematic track, or a selection of courses (e.g. students could select a module or phase). This provides an understanding of the type of themes being provided in other programmes. It can help identify trends and gaps in the market.

Data was gathered via Master's course aggregator websites (e.g. [Mastersstudies.com](#)) via the key word 'sustainability' and also via filters within the discipline of 'sustainability studies' (see Appendix A).

In this analysis, the most common overlapping module/track themes provided by institutions in sustainability Master's were:

- Water,
- Business/Management,
- Mobility
- Urban Studies,
- Energy, and
- Ecology/Biodiversity.

This suggests that there is a demand for these themes. It suggests that for our current approach, Energy and Mobility/Urban Studies could be viable tracks not currently offered in our Master's.<sup>8</sup>

However, a gap in thematic provision could be a theme related to society (e.g. social justice, peace studies (SDG 16), education (SDG 4), gender studies (SDG 5)).

### **8.3. ENERGY TRACK**

This section considers the market for an Energy track, which is aligned with SDG 7, Affordable and Clean Energy. This theme was selected based on the previous Programme Content Guidelines from the 5 initial CHARM-EU partners, and was identified as a strong theme by the 3 new partners.

The track itself could contain a variety of topics related to energy, including engineering, environmental science/studies, physics, and environmental engineering. These disciplines offer courses covering topics such as energy systems, renewable energy technologies, energy policy, sustainable energy systems, and pollution control methods. Additionally, topics in fields like economics, policy studies/public policy, sustainable development/environmental management, chemistry, business/management, and computer science/engineering could also be included.

#### **8.3.1. DEMAND FOR AN ENERGY TRACK**

The Energy sector employed over 65 million people in 2019, equivalent to about 2% of all global employment, with clean energy employing 50% of this total. It is estimated that 14 million new clean energy jobs will be created by 2030, while another 16 million workers will shift to new roles related to clean energy. Around 60% of these new jobs require some degree of post-secondary training<sup>9</sup>.

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<sup>8</sup> Circular Economy could also be considered but is not addressed in this document

<sup>9</sup> <https://iea.blob.core.windows.net/assets/a0432c97-14af-4fc7-b3bf-c409fb7e4ab8/WorldEnergyEmployment.pdf>

Over 900,000 new European jobs have been forecasted in this space in the next decade<sup>10</sup>. Teaching skills for new energy transitions has been highlighted as an important target for policymakers and businesses involved in this transition<sup>11</sup> to address.

The energy track is strongly related to SDG 7 “Affordable and Clean Energy” and aligns with the European Commission’s ‘Clean Energy for all Europeans’ proposals<sup>12</sup>. Various recent surveys have identified an appetite in the public for renewable energy investment, and improving energy pricing<sup>13</sup>. In certain European countries, energy literacy has been earmarked as a gap in knowledge for individuals<sup>14</sup> with dedicated European projects focusing on upskilling on this topic<sup>15</sup>.

From this brief analysis, the energy sector is going through a growth period in terms of job creation. This suggests that employment opportunities for Energy track graduates is strong.

### **8.3.2. CURRENT POSTGRADUATE PROGRAMMES OFFERED**

Within our own institutions, the following postgraduate programmes are offered related to Energy.

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<sup>10</sup> [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_16\\_4009](https://ec.europa.eu/commission/presscorner/detail/en/IP_16_4009)

<sup>11</sup> [https://www.interregeurope.eu/sites/default/files/inline/Skills for the energy transition - Policy\\_brief.pdf](https://www.interregeurope.eu/sites/default/files/inline/Skills%20for%20the%20energy%20transition%20Policy%20brief.pdf)

<sup>12</sup> [https://op.europa.eu/en/publication-detail/-/publication/b4e46873-7528-11e9-9f05-01aa75ed71a1/language-en?WT.mc\\_id=Searchresult&WT.ria\\_c=null&WT.ria\\_f=3608&WT.ria\\_ev=search](https://op.europa.eu/en/publication-detail/-/publication/b4e46873-7528-11e9-9f05-01aa75ed71a1/language-en?WT.mc_id=Searchresult&WT.ria_c=null&WT.ria_f=3608&WT.ria_ev=search)

<sup>13</sup> <https://europa.eu/eurobarometer/surveys/detail/2693>

<sup>14</sup> [https://drive.google.com/file/d/1fQC-ZwUOJmig5Hof6g1Fp6wB\\_bZzMXfa/view](https://drive.google.com/file/d/1fQC-ZwUOJmig5Hof6g1Fp6wB_bZzMXfa/view)

<sup>15</sup> <http://www.el-practice.eu/en/>

**Table 47** CHARM-EU alliance postgraduate programmes related to energy.

UU	UB	TCD	ELTE	JMU	ABO	UM	HRW
Master's in Energy Science	Master's in Renewable and Sustainable Energy	Master's in Engineering (Environmental / Structural and Geotechnical / Transport / Sustainable Energy)	Master's in Geology with a specialization in Hydrogeology, Petroleum geology and Environmental geology	<b>No hit was found</b>	Master's Programme in Mathematics, Physics, Chemistry and Geology	Master's in Electronics, Electrical energy and Automation	Business Administration: Energy and Water Management
Master's in Sustainable Development	Lifelong learning master's degree certificate in environmental sciences	PG Dip in Sustainable Energy and the Environment	Master's in Geography with a specialization in Renewable Energy		Master's Degree Programme in Sustainable Chemical and Process Engineering	Master's in Energy	Energy Systems Engineering and Management
Master's in Sustainable Business and Innovation		Master's in Energy Science					
		Master's in Zero Carbon Technology					
		M.Phil Environmental History (module on ENERGY AND POWER IN THE MODERN WORLD)					
		Master's in Financial Risk Management (module on Energy Finance and Trading)					
		Master's in Economic Policy (module on Energy, Environment and Climate change: Research for policy)					

		Master's in Mechanical Engineering (modules on Wind Energy, Energy Policy, Wave and Hydro Energy)					
		MAI Year 5 in Civil, Structural and Environmental Engineering (multiple energy modules)					
		Engineering for Climate Action (PG Cert)					

There are a large number of postgraduate programmes related to energy within our partner institutions. This is positive as we have the teaching capacity within our institutions if we were to select this track. However, it could be argued that the CHARM-EU Master's would be in direct competition to these programmes. Conversely, it does show that CHARM-EU has teaching strengths in this area.

In addition to courses from CHARM-EU partners, a total of 380 Master's programmes were identified with 'Sustainable Energy' in their title or description in Europe within the MastersStudies.com aggregator website.

### **8.3.3. JOINT MASTER'S COMPETITORS TO THE ENERGY TRACK**

Aside from specific programmes related to Energy, this track has a unique structural competitor in the form of joint Master's programmes, with mobility as a focus, related to energy. The EIT InnoEnergy Master's School<sup>16</sup> offers eight Master's programmes (Master's RENE - Renewable Energy, Master's in Energy for Smart Cities, Master's SELECT - Environmental Pathways for Sustainable Energy Systems, Master's SENSE - Smart Electrical Networks and Systems, Master's in Energy Storage, Master's ENTECH - Energy Technologies, Master's in Energy Transition, and Master's EMINE - European Master's in Nuclear Energy) delivered across 37 countries.

In addition, there are four other Energy related joint Master's (some Erasmus Mundus) being offered (see Appendix B).

However, it is important to note that these Master's programmes usually have a disciplinary prerequisite for entry (e.g. engineering, physics, maths). The CHARM-EU Master's would allow for students, not from a traditional Energy background to student this track. This is a unique selling point for the Energy track.

### **8.3.4. DISCUSSION**

The following key points should be taken into account for the potential selection of the Energy theme within the scope of market analysis.

- The job market for Energy-related employment is very strong and growing.
- Energy-related tracks are also provided in similar European Sustainability Master's
- Alliance partners have strong experience in teaching in Energy programmes.
- Alliance partners have programmes related to Energy which could be considered competitors. However, given the broad scope of the CHARM-EU Master's, which does not only focus on Energy (i.e. Phase 1 and Phase 3) it is unlikely that it will be a competitor to these programmes.

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<sup>16</sup> <https://www.innoenergy.com/for-students/master-school/top-universities-and-business-schools/?uri=for-students&uri=master-school&uri=top-universities-and-business-schools&page=3>

- There are multiple joint European Master's programmes on Energy topics available. However, the majority of these require disciplinary or industry experience to enter the programme.

## 8.4. SOCIETY TRACK

This section considers the market for a Society track, which is aligned with several SDGs: 1, No Poverty, 4, Quality Education, 5, Gender Equality (other SDGs closely align with societal priorities and have broader relevance, including 3, Good Health and Well-being, 8, Decent Work and Economic Growth, 11, Sustainable Cities and Communities, 16, Peace, Justice, and Strong Institutions). This theme was selected based on the previous Programme Content Guidelines from the 5 initial CHARM-EU partners and was identified as a strong theme by the 3 new partners.

The track itself could contain a variety of topics related to society, minorities, peace studies, ethics, psychology, social sciences, youth studies, culture, ethnography, philosophy and theology, as well as music research, musicology and ethnomusicology. These disciplines offer courses covering topics such as gender and diversity, game research, education for learning societies, migration and societal change, inclusive and secure society, multicultural education, disability, heritage preservation, and artificial intelligence. Additionally, topics in fields like business, economics, policy studies/public policy, marketing, education, computer science and entrepreneurship could also be included. The 'Society' track might overlap with the existing 'Life & Health' track.

### 8.4.1. DEMAND FOR A SOCIETY TRACK

The job market in the field of 'Society' and its various aspects encompasses various sectors, including human rights organizations, non-profit organizations, government agencies, social justice advocacy groups, international relations, diplomatic service, peacebuilding initiatives, research ethics, community development, public administration, cultural heritage preservation, event management, tourism, cultural diplomacy, even sustainable development, renewable energy, urban planning, and social entrepreneurship if Society and Sustainability is the main focus area.

Social sustainability is an emerging field that focuses on fostering equitable, just, and inclusive societies while promoting sustainable development. As the world grapples with complex social challenges, the demand for professionals with expertise in social sustainability is growing. There is a rising demand for professionals who can integrate social considerations into sustainable development practices. Employers across various sectors recognize the importance of social sustainability in their operations and seek individuals who can drive positive social impact. Many companies now incorporate Corporate Social Responsibility (CSR) initiatives, including social sustainability, into their business strategies. Job opportunities exist within CSR departments, where professionals develop and implement social sustainability programs, conduct impact assessments, and engage with stakeholders. Governments at various levels are increasingly recognizing the importance of social sustainability in policymaking and public service delivery. NGOs and non-profit organizations play a crucial role in promoting social sustainability. Consulting firms specializing in sustainability often include social sustainability as part of their service offerings. They work with clients to develop socially responsible business practices, conduct social impact assessments, and create inclusive strategies. Employment opportunities can be found in sustainability consulting, project management, and stakeholder engagement roles.

An estimated 90% of companies on the S&P 500 index published a corporate social responsibility (CSR) report in 2019, compared to just 20% in 2011. (The S&P 500 index is an index featuring the 500 leading U.S. publicly-traded companies).<sup>17</sup> 40% of companies have started incorporating climate considerations into lobbying and political donations.<sup>18</sup> More than 90% of CEOs state that sustainability is important to their company's success.<sup>19</sup>

Companies across the world are swiftly responding to rising public demand for ethical and environmental accountability. The need for Corporate social responsibility officers is therefore growing.<sup>20</sup>

Potential Employers:

- United Nations (UN) and International Organizations: The UN and international organizations such as the World Bank, United Nations Development Programme (UNDP), and United Nations Environment Programme (UNEP) offer employment opportunities in the field of social sustainability through various programs and initiatives.
- Corporate Sector: Large corporations and multinational companies often have dedicated sustainability departments or CSR divisions that focus on social sustainability. Examples include companies with sustainability commitments like Unilever, Patagonia, and Interface.
- Non-profit and NGO Sector: Organizations such as Oxfam, Amnesty International, CARE International, and World Wildlife Fund (WWF) employ professionals to work on social sustainability programs and initiatives.
- Government Agencies: National and local government agencies involved in social and urban development, environmental planning, and community engagement offer employment opportunities for social sustainability professionals.
- Sustainability Consultancies: Consulting firms specializing in sustainability, such as Deloitte, ERM, and SustainAbility, often have social sustainability practices that provide employment opportunities.

#### **8.4.2. CURRENT POSTGRADUATE PROGRAMMES OFFERED**

Within our own institutions, the following postgraduate programmes are offered related to Society.

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<sup>17</sup> <https://online.hbs.edu/blog/post/corporate-social-responsibility-statistics>

<sup>18</sup> <chrome-extension://efaidnbnmnnibpcajpcglclefindmkaj/https://www.deloitte.com/content/dam/assets-shared/legacy/docs/2022-deloitte-global-cxo-sustainability-report.pdf>

<sup>19</sup> [https://ssir.org/articles/entry/the\\_next\\_phase\\_of\\_business\\_sustainability](https://ssir.org/articles/entry/the_next_phase_of_business_sustainability)

<sup>20</sup> <https://www.businessbecause.com/news/specialized-masters/8461/sustainability-jobs-2023?sponsored>

**Table 48** CHARM-EU alliance postgraduate programmes related to society.

<b>UU</b>	<b>UB</b>	<b>TCD</b>	<b>ELTE</b>	<b>JMU</b>	<b>ABO</b>	<b>UM</b>	<b>HRW</b>
MA Cultural Anthropology: Sustainable Citizenship	Advanced Studies in Social Exclusion	Applied Intercultural Communications	MA Cultural Heritage Studies	Master's Social Sciences and Research on Sustainability	Master's in Peace, Mediation and Conflict Research	Master's Management	MBA – Global Management/HR
MA Applied Musicology	Anthropology and Ethnography	Applied Social Data Science	MA Art History	Master's Cultural Landscapes	Master's in Social Exclusion		
MA Art History	Cultural Management	Applied Social Research	MA Ethnography	Master's Ethnomusicology	Master's in Social Analysis		
MA Arts and Society	Women, Gender and Citizenship	Community Health	MA Theatre Science	Master's Musicology	Master's in Social Sciences		
MA Applied Musicology	Citizenship and Human Rights: Ethics and Politics	Comparative Social Change	MA Religious Studies	Master's Museum studies	Master's in Theology		
MA Cultural Anthropology: Sociocultural Transformation	Construction and Representation of Cultural Identity	Gender and Women's Studies	MA Social Inclusion Studies	Master's European Ethnology/Empirical Cultural Studies	Master's in Culture, History and Philosophy		
MA Applied Ethics	Cultural Heritage Management and Museology		MA Social Inclusion Studies				
MA Cultural History & Heritage	Erasmus Mundus on Work, Organizational and Personnel Psychology		MA Minority Policy				
MA Organising Social Impact	Libraries and Heritage Collections		MA Community and Civic Studies				

MA History of Politics and Society	People and Team Management and Development in Organizations		MA Cultural Anthropology				
MA Migration, Ethnic Relations and Multiculturalism	Social and Educational Action		MA Sociology				
MA Musicology	Sociology: Social Transformations and Innovation		MA Social Work				
MA Gender Studies	Youth and Society		MA Andragogy				
MA Religious Studies	Film and Screen Studies		MA Art Instructor				
MA Sociology: Contemporary Social Problems			MA Cultural Mediation				
MA Sustainable Business and Innovation							
MA Youth Development and Social Change							

There are a large number of postgraduate programmes related to society within our partner institutions. This is positive as we have the teaching capacity within our institutions if we were to select this track. However, it could be argued that the CHARM-EU Master's would be in direct competition with these programmes. Conversely, it does show that CHARM-EU has teaching strengths in this area (shown also by the running 'Life & Health' track).

In addition to courses from CHARM-EU partners, a total of 22 Master's programmes were identified with 'Social Sustainability Studies' in their title or description in Europe (9 additional in the USA) within the MastersStudies.com aggregator website. There are around 1200 Master's programmes in general Social Sciences offered in Europe.

#### **8.4.3. JOINT MASTER'S COMPETITORS TO THE SOCIETY TRACK**

There are several joint master's programs and Erasmus Mundus Joint Master's Degrees (EMJMDs) that offer courses focusing on social sustainability. These programs provide a multidisciplinary approach to understanding and addressing social challenges in sustainable development. Here are a few examples:

- Erasmus Mundus Joint Master's Degree in Environmental Sciences, Policy, and Management (MESPOM): MESPOM is a two-year program offered by a consortium of four universities. It addresses environmental sustainability and natural resource management from a social science perspective, emphasizing policy and management approaches.
- Erasmus Mundus Joint Master's Degree in Global Studies - A European Perspective (EMGS): EMGS is a two-year program offered by a consortium of six European universities. It provides a comprehensive understanding of global challenges from a social sciences perspective, including issues related to social sustainability, human rights, and social justice.
- European Joint Master's in Social Work with Families and Children (EUROCHILD): EUROCHILD is a two-year program that focuses on social work with families and children, aiming to address social issues and promote sustainable family policies. It is offered by a consortium of five European universities.
- Joint Master's in Sustainable Territorial Development (STeDe): STeDe is a two-year program that explores sustainable development in urban and rural contexts. It addresses social, economic, and environmental dimensions of sustainability and includes courses on social sustainability and community development.
- Global-MINDS: Global MINDS European Master's in the Psychology of Global Mobility, Inclusion and Diversity in Society, offered by Ireland, Portugal, Poland, Norway
- TISE: Transition, Innovation and Sustainability Environments, offered by Austria, Poland, Ireland, Portugal
- EDUMaH: Education in Museums and Heritage, offered by the United Kingdom, Estonia, Netherlands, Malta
- EURCULT: Euroculture: Society, Politics and Culture in a Global Context, offered by Netherlands, Poland, Spain, Italy, France, Czechia, Germany, Sweden, India, Japan, Mexico, United States

Other European University Alliances focus on 'society':

- CIVIS focuses on societal challenges such as democracy, citizenship, and sustainability. CIVIS offers 83 courses in the focus area of Society, culture, heritage.
- EUTOPIA addresses various societal challenges, including sustainability, social justice, and inclusion.
- ENGAGE.EU is a European University Alliance focused on social sciences and humanities. It aims to enhance the societal relevance of these disciplines through collaborative research, education, and knowledge exchange. ENGAGE.EU focuses on topics such as democracy, social cohesion, and cultural heritage.

However, it is important to note that these Master's programmes usually have a disciplinary prerequisite for entry. The CHARM-EU Master's would allow for students, not from a traditional Society background to study this track. This might be a unique selling point for this track.

#### **8.4.4. DISCUSSION**

The following key points should be taken into account for the potential selection of the 'Society' theme within the scope of market analysis.

- The job market for Society, and mostly, Social Sustainability-related employment, is very demanding and growing.
- Public appetite for social sustainability is growing, therefore, companies and organisations are incorporating sustainability into their profile.
- Society-related programmes are also provided in similar European Sustainability Master's.
- Some alliance partners have strong experience in teaching in Society programmes. However, some alliance partners might be left out as they don't have a strong teaching practice in this area (e.g. HRW).
- There are multiple joint European Master's programmes on Society topics available.
- There might be an overlap with the running 'Life & Health' track.

## 8.5. MOBILITY TRACK

This track was selected via discussions in WP3.1 and the Programme Content Guidelines approach in multiple partners. It also has potentially strong research strengths as it is contained within SDG 11 Sustainable Cities and Communities. Although a broad term, it could include topics including transport, infrastructure, vehicles, intelligent transport systems, mobility behaviour, mobility innovations, and, social aspects of mobility.

It is important to note that within two Master's course aggregator platforms (i.e. websites where potential students search for Master's courses), Mobility is not listed as a category or field of study to select. This suggests that from the perspective of these platforms, Mobility in itself is not deemed significant enough to list as a category. This may have implications for including this track from a student searching perspective.

### 8.5.1. DEMAND FOR A MOBILITY TRACK

The employment market for sustainable mobility is growing with opportunities within sustainable transportation planning, policy, and advocacy, electric vehicles and charging infrastructure, intelligent transport systems, and sustainable mobility consulting. With potential increased investment in these areas, employment opportunities may increase<sup>21</sup>. For example, the market size for intelligent transport systems is predicted to increase by 8.3% from 2023 to 2030, indicating significant job creation potential in the future.<sup>22</sup>

Land transport employs over 60 million workers globally, representing more than 2 percent of global employment. Total employment is higher if one counts the indirect jobs that depend on value chains associated with the transport sector. Projections for future 'green transport' scenarios (e.g. increasing investment in public transport, free public transport, mandatory electrification of cars) suggest that there will be strong growth in employment opportunities in this space<sup>23</sup> if these scenarios are fulfilled.

In a 2020 Eurobarometer report, the majority of current car users would be ready to switch to more environmentally friendly forms of transport, suggesting that there is a public awareness and appetite for sustainable mobility amongst those who are not currently engaging in sustainable mobility<sup>24</sup>.

It is important to note that mobility, in itself, is not an explicit SDG, but is contained within SDG 11 Sustainable Cities and Communities.

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<sup>21</sup> [https://globalclimateactionpartnership.org/app/uploads/2021/07/LEDS-GP\\_Jobs-Creation-Through-Green-Transport.pdf](https://globalclimateactionpartnership.org/app/uploads/2021/07/LEDS-GP_Jobs-Creation-Through-Green-Transport.pdf)

<sup>22</sup> <https://www.grandviewresearch.com/industry-analysis/intelligent-transportation-systems-industry>

<sup>23</sup> [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms\\_745151.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_745151.pdf)

<sup>24</sup> <https://europa.eu/eurobarometer/surveys/detail/2226>

#### 8.5.2. CURRENT POSTGRADUATE PROGRAMMES OFFERED

Within our own institutions, the following postgraduate programmes are offered related to Mobility.

**Table 49** CHARM-EU alliance postgraduate programmes related to mobility.

UU	UB	TCD	ELTE	JMU	ABO	UM	HRW
No hit was found	Development and Launch of Tourism Projects	Master's in Engineering (Environmental / Structural and Geotechnical / Transport / Sustainable Energy)	No hit was found	No hit was found	No hit was found	No hit was found	No hit was found
	Hotel and Restaurant Management	Computer Science – Data Science (M.Sc.)					
	Hotel and Restaurant Management	Engineering for Climate Action (P.Grad.Dip.)					
	Tourism Management Innovation	Mechanical Engineering/Zero Carbon Technology (M.Sc.)					
	Urban Tourism						

In addition to courses from CHARM-EU partners, a total of 1779 Master's programmes were identified with 'mobility' in their title or description in Europe within the MastersStudies.com aggregator website. However, many of these were not related to mobility within this context (i.e. some related to mobile applications development, software engineering, logistics, and technology). This suggests that there could be a potential difficulty in students finding the course if they were to search for this term specifically.

Using the term 'sustainable mobility' a total of 49 courses within Europe were identified as containing the term in its title or description. This is a much smaller number than the other tracks.

### 8.5.3. JOINT MASTER'S COMPETITORS TO THE MOBILITY TRACK

Aside from specific programmes related to sustainable mobility, some competition from joint Master's programmes, with built in mobility, were identified.

- EIT Urban Mobility provides two double-degree Master's programmes, using challenge-based learning, on Sustainable Urban Mobility Transitions, and Smart Mobility Data Science & Analytics<sup>25</sup>.

### 8.5.4. DISCUSSION

The following key points should be taken into account for the potential selection of the Mobility theme within the scope of market analysis.

- Growing investment in green mobility has indicated a rise in employment opportunities in this space.
- Mobility is a track offered within similar Master's programmes.
- Public appetite for sustainable mobility topics is evident through a change in perception of sustainable mobility opportunities.
- From a marketing perspective, the term 'mobility' is ambiguous. This could cause challenges with connecting to potential students.
- Mobility as a category for searching for Master's degrees is absent from course aggregator websites. This could cause challenges for the visibility of the track.
- There is little competition from other Master's and joint Master's programmes in the mobility space. However, this could also indicate a lack of demand for this track.
- Designing a 30 ECTS track on Mobility might be challenging content-wise.

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<sup>25</sup> <https://www.eiturbanmobility.eu/academy/masterschool/#Degreetop>

## 8.6. TECHNOLOGY TRACK

This track was selected via discussions in WP3.1 and the Programme Content Guidelines approach in multiple partners. The Technology track is mainly aligned with SDG 9, Industry, Innovation and Infrastructure. However, it relates to SDG 7, Affordable and Clean Energy and 11, Sustainable Cities and Communities.

Technology track could encompass a wide range of topics, including computer science, information technology, electronics and electrical engineering, data science and analytics, human-computer interaction, virtual reality and augmented reality, biotechnology and bioengineering, robotics and automation, cryptography and cybersecurity, mobile and web development, and even renewable energy and sustainability. These disciplines offer courses covering topics such as machine learning, artificial intelligence, computer graphics, databases, data analytics, smart devices, data mining, big data, data-driven decision-making, 3D modelling, virtual environments, bioinformatics, app development and responsive web design. These topics highlight the diverse areas that fall under the umbrella of technology and its impact on society, innovation, and various industries. The 'Technology' track has components related to the 'Energy' (solar power, wind energy, energy storage, sustainable infrastructure, green technologies, and environmental impact assessment), the 'Cities' (data analysis, visualization and simulation for urban planning, and smart cities) and also the 'Mobility' track (ride-sharing services, electric vehicles to smart traffic management systems and sustainable mobility solutions).

### 8.6.1. DEMAND FOR A TECHNOLOGY TRACK

The technology sector has been experiencing significant job growth in recent years. According to the U.S. Bureau of Labor Statistics, employment in computer and information technology occupations is projected to grow by 11% from 2019 to 2029, which is much faster than the average for all occupations.<sup>26</sup>

Technology-related roles are in high demand across various industries. The need for professionals with skills in software development, data analysis, cybersecurity, artificial intelligence (AI), cloud computing, and digital transformation is particularly strong. Emerging technologies such as AI, machine learning, blockchain, Internet of Things (IoT), and augmented reality (AR)/virtual reality (VR) are driving demand for specialized roles and expertise in these areas.

The technology sector is known for its vibrant startup ecosystem, with numerous opportunities for entrepreneurial individuals to innovate, launch their own ventures, or join early-stage startups.

The intersection of technology and sustainability has become increasingly important as organizations seek innovative solutions to address environmental challenges and promote sustainable practices.

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<sup>26</sup> <https://www.bls.gov/ooh/>

#### Current Job Market Trends:

- **Green Technology and Renewable Energy:**  
The shift towards clean energy and the adoption of green technologies have created a growing demand for professionals in renewable energy, energy efficiency, and sustainable infrastructure.
- **Sustainable Software Development:**  
The demand for sustainable software solutions is rising, requiring professionals with expertise in developing energy-efficient applications, optimizing data storage and processing, and implementing sustainable software development practices.
- **Sustainable Supply Chain and Logistics:**  
Organizations are increasingly focused on sustainability in supply chain and logistics operations, driving the need for professionals who can leverage technology to optimize processes, reduce emissions, and promote circular economy principles.
- **Smart Cities and Urban Sustainability:**  
The development of smart cities relies on technology to enhance energy efficiency, transportation systems, waste management, and overall urban sustainability. This trend has led to a demand for professionals with expertise in smart city technologies and sustainable urban planning.
- **Environmental Data Analytics and Monitoring:**  
The increasing availability of environmental data requires skilled professionals who can analyze and interpret complex datasets using advanced technologies such as artificial intelligence (AI), machine learning, and remote sensing.
- **Circular Economy and Waste Management:**  
Organizations are embracing circular economy principles to minimize waste and optimize resource use. Professionals with knowledge of technologies for waste management, recycling, and upcycling are in demand.

These topics have a strong relation to other identified and analysed topics, including 'Energy', 'Mobility' and 'Cities'.

#### Potential Employers:

- **Renewable Energy Companies:** Organizations involved in the development, installation, and management of renewable energy systems, such as solar and wind power, offer job opportunities in sustainable energy technology.
- **Technology and Software Companies:** Tech firms that focus on sustainable software development, energy-efficient solutions, smart city technologies, and sustainable supply chain management are potential employers.
- **Consulting and Sustainability Advisory Firms:** Companies providing sustainability consulting and advisory services seek professionals with expertise in technology and sustainability to support clients in their sustainability strategies and initiatives.
- **Government Agencies and Research Institutes:** Government departments, research institutions, and national laboratories involved in sustainable technology research, policy development, and environmental monitoring offer employment opportunities.

- Non-profit Organizations and NGOs: Non-profit organizations working on environmental conservation, sustainable development, and advocacy often seek professionals with technology expertise to drive their sustainability programs.
- Some specific companies that offer jobs in technology and sustainability: Google, Microsoft, IBM, Deloitte, Environmental Protection Agency (EPA), International Institute for Sustainable Development (IISD), World Wildlife Fund (WWF), Tesla, Unilever, Nestle, Amsterdam Smart City, Barcelona Smart City Singapore's Smart Nation Initiative

### **8.6.2. CURRENT POSTGRADUATE PROGRAMMES OFFERED**

Within our own institutions, the following postgraduate programmes are offered related to Technology.

In addition to courses from CHARM-EU partners, a total of 15 Master's programmes were identified with 'Sustainable Infrastructure' in their title or description in Europe (2 additional in the USA) within the MastersStudies.com aggregator website. There are around 14,000 Master's programmes in general Technology offered in Europe (and an additional 5000 out of Europe).

**Table 50** CHARM-EU alliance postgraduate programmes related to technology.

<b>UU</b>	<b>UB</b>	<b>TCD</b>	<b>ELTE</b>	<b>JMU</b>	<b>ABO</b>	<b>UM</b>	<b>HRW</b>
Master's Game and Media Technology	Artificial Intelligence	Biomedical engineering	Master's Autonomous System Computer Scientist	Master's eXtended Artificial Intelligence	Master's in Sustainable Chemical and Process Engineering	Master's Management of Information Systems	Civil Engineering
MA Law and Technology in Europe	Bioinformatics and Biostatistics	Circular Economy and Recycling Technologies	Master's Geoinformatics	Master's Human-Computer Interaction	Master's in Information Technology	Master's in Computer Science	MBA – Industrial Service Management
Master's Medical Imaging	Science and Technology in Football	Music and Media Technologies	Master's Mechanical Engineer	Master's Computer Science	Master's in Governance of Digitalisation	Master's Bioinformatics	Systems Engineering
Master's Regenerative Medicine and Technology	Nanoscience and Nanotechnology	Computer Science - Augmented and Virtual Reality	Master's Software Engineering	Master's Information Systems	Master's in Biomedical Imaging		Technical Production Management
Master's Sustainable Business and Innovation	Management and Direction of Libraries and Information Services	Computer Science - Data Science	Master's Material Science	Master's Psychology of Digital Media			Computer Science
Master's Biofabrication	Creation and Management of Innovative Technology-Based Companies	Computer Science - Future Networked Systems	Master's Biotechnology	Master's Quantum Technology			

Master's Computing Science	Digital Management	Content	Computer Science - Intelligent Systems		Master's Quantum Engineering			
Master's Innovation Sciences	Digitally Mediated Learning Environments		Electronic Information Engineering					
Master's Business Informatics	Electrochemistry. Science and Technology		Engineering for Climate Action					
	Quantum Science and Technology		High Performance Computing					
	Molecular Biotechnology		Interactive Digital Media					
	Chemical Engineering		Mechanical Engineering					
	Computer Vision		Medical Imaging					
	Biomedical Engineering		Computational Engineering					
			Pharmaceutical Manufacturing Technology					
			Quantum Science and Technology					
			Zero Carbon Technology					

### 8.6.3. JOINT MASTER'S COMPETITORS TO THE TECHNOLOGY TRACK

There are several joint master's programs and Erasmus Mundus Joint Master's Degrees (EMJMDs) that offer courses focusing on technology. These programs provide a multidisciplinary approach to understanding and addressing social challenges in sustainable development. Here are a few examples:

- META 4.0: Manufacturing 4.0 by intElligent and susTAinable technologies, offered by France, Slovenia, Norway and Italy
- IMATEC: International Master's in Technology and Management for Circular Economy, offered by Czechia, Spain and Finland
- QaunTEEM: Quantum Technologies and Engineering Erasmus Mundus Master, offered by Germany, Denmark and France
- DAFM: Sustainability in Agriculture, Food Production and Food Technology in the Danube Region - Danube AgriFood Master, offered by Hungary, Austria, Croatia, Serbia, Romania, Czechia and Slovakia
- IMETE-C: International Master's in Environmental Technology and Engineering – Consolidation phase, offered by Netherlands, Czechia and Belgium

Other European University Alliances and Initiatives focus on 'technology':

- ECIU University (European Consortium of Innovative Universities): ECIU University aims to create a European university of the future, focusing on societal challenges and entrepreneurship. It emphasizes interdisciplinary approaches and offers programs related to technology, innovation, and sustainability.
- IDEA League: The IDEA League is a strategic alliance among leading European universities of technology, including TU Delft, ETH Zurich, RWTH Aachen University, and Chalmers University of Technology. It focuses on engineering, science, and technology, fostering collaboration in research, education, and innovation.
- CESAER (Conference of European Schools for Advanced Engineering Education and Research): CESAER brings together over 50 leading European engineering universities. It promotes cooperation in engineering education, research, and innovation, emphasizing technological advancements and their societal impact.
- UNITE! (University Network for Innovation, Technology and Engineering): UNITE! is an alliance of seven European universities focusing on innovation, technology, and engineering. It offers interdisciplinary programs, promotes entrepreneurship, and addresses global challenges through technology and innovation.
- CLUSTER (Consortium Linking Universities of Science and Technology for Education and Research): CLUSTER consists of five European universities of science and technology, including Politecnico di Milano and Technische Universität Berlin. It emphasizes research collaboration, joint educational programs, and innovation in science and technology.
- 4EU+ Alliance: The 4EU+ Alliance brings together six leading European universities, including Charles University, Sorbonne University, University of Warsaw, Heidelberg University, University of Copenhagen, and University of Milan. The alliance aims to foster collaboration in research, education, and innovation, with a focus on areas such as digitalization, data science, and artificial intelligence.

- EuroTech Universities Alliance: The EuroTech Universities Alliance is a strategic partnership between four leading European universities: Technical University of Denmark, École Polytechnique Fédérale de Lausanne, Eindhoven University of Technology, and Technical University of Munich. The alliance focuses on technology and innovation in areas like health, energy, and mobility.
- Knowledge Innovation Community (KIC): The European Institute of Innovation and Technology (EIT) operates several Knowledge Innovation Communities (KICs) that bring together universities, research institutions, and industry partners in specific thematic areas. For example, EIT Digital focuses on digital innovation and entrepreneurship, EIT InnoEnergy focuses on sustainable energy, and EIT Health focuses on healthcare and life sciences.
- European Institute of Innovation and Technology (EIT) Digital: EIT Digital is a pan-European organization that brings together universities, research centers, and companies to foster innovation and entrepreneurship in digital technologies. It offers educational programs, supports startups, and drives collaborative research and innovation projects.
- The Guild: The Guild is an alliance of research-intensive universities, including institutions like University of Amsterdam, University of Oslo, and University of Tübingen. While it has a broader focus beyond technology, the alliance actively engages in research and innovation in fields such as digital technologies, artificial intelligence, and data science.

However, it is important to note that these Master's programmes usually have a disciplinary prerequisite for entry. The CHARM-EU Master's would allow for students, not from a traditional Technology background to study this track. This might be a unique selling point for this track.

#### **8.6.4. DISCUSSION**

The following key points should be taken into account for the potential selection of the 'Technology' theme within the scope of market analysis.

- The job market for Technology is very demanding and growing.
- Technology is a leading sector in most countries, driving economic growth, exhibiting high potential, and playing a significant role in overall development.
- The application of technology is broad, including information technology, healthcare, energy, transportation, finance, communication and education.
- There is a myriad of technology-related postgraduate programmes offered within the EU.
- Technology-related programmes are also provided in similar European Master's.
- There are a couple of joint European Master's programmes on Technology topics available.
- Due to the broadness of this topic, Technology can be embedded in various forms, even in the other potential tracks (Cities, Mobility and Energy).

## 8.7. SUSTAINABLE CITIES

This track was selected for analysis based on research strengths identified by a bibliographic analysis, and exploration of CHARM-EU partner Programme Content Guidelines. It could potentially include multiple thematic areas including Energy, Mobility, and Society related to sustainability. It directly aligns with SDG 11 Sustainable Cities and Communities.

### 8.7.1. DEMAND FOR A SUSTAINABLE CITIES TRACK

The content of SDG 11 is less explicit than other tracks, with elements including transport (mobility), housing, sustainable urbanization, and cultural heritage all contained within the SDG. As such, investigating the employment opportunities is more challenging.

- With the growth in investment in smart cities, new job roles have been identified such as smart city planner, smart city IT manager and smart city IT officer, artificial intelligence and machine learning scientists, data scientists, cybersecurity analysts, app and software developers, network support engineers, civil engineers, digital marketers, geospatial and mapping scientists, cloud architects, energy efficiency engineers, tree maintenance professional, urban farmer and solar panel installer<sup>27</sup>.
- Construction employs over 13 million people in Europe with a low percentage (16.9%) of workers with a high education level. Future forecasts suggest that 4.5 million jobs will need to be filled to address demand.

However, if this track were to include Energy, Mobility, and Society modules, the market for employment would be much greater. It could also be more appealing to a broader range of students.

### 8.7.2. CURRENT POSTGRADUATE PROGRAMMES OFFERED

**Table 51** CHARM-EU alliance postgraduate programmes related to Cities.

<b>UU</b>	<b>UB</b>	<b>TCD</b>	<b>ELTE</b>	<b>JMU</b>	<b>ABO</b>	<b>UM</b>	<b>HRW</b>
MA Cultural Anthropology: Sustainable Citizenship	Urban Tourism	Smart and Sustainable Cities	Master's Geography, Territorial and settlement development specialisation	No hit was found	No hit was found	Master's in Territorial Management and Local Development	No hit was found
Master's Global Urban Transformations	Spatial Planning and Environmental Management						
Master's Urban and Economic Geography							

Aside from the CHARM-EU Master's, a total of 308 Master's were identified as containing the term 'sustainable cities' in its title or description.

### 8.7.3. JOINT MASTER'S COMPETITORS TO THE SUSTAINABLE CITIES TRACK

Aside from specific programmes related to sustainable cities, some competition from joint Master's programmes, with built in mobility, were identified.

- An Erasmus Mundus Joint European Master's in Environmental Studies - Cities & Sustainability has previously been delivered, but its current delivery status is unknown<sup>28</sup>.
- The EC2U alliance has a Joint Master's in Sustainable Cities and Communities<sup>29</sup>. Note this is also offered by the University of Turku in Finland.

### 8.7.4. DISCUSSION

- A Sustainable Cities track could align well with the current WIDERA research proposal Transdisciplinary Research and Innovation for Sustainable Cities if successful.
- The term used as a description of the track is key for communication and marketing. As such, it needs to be decided whether a broad 'Sustainable Cities' track would have more impact than a 'Mobility' track. If the term 'mobility' was used, this could bring searching challenges as the term is more ambiguous than sustainable cities. Adding 'communities' to the title might open more space for the 'Society' component and would be more explicitly aligned with SDG 11 'Sustainable cities and communities'.
- Offering a 'sustainable cities' track would allow for a much broader integration of Alliance partner strengths. It would allow for Energy, Mobility, and Society to be potentially included as topics in the track. These might serve as a starting point for the three modules within this track.
- There are few competitors for joint programmes in this space.
- The key word 'sustainable cities' is present in course aggregator sites, suggesting that it is an area that prospective students are searching for.

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<sup>28</sup> <http://www.jemes-cisu.eu/joomla3/>

<sup>29</sup> <https://ec2u.eu/for-students/ec2u-master-programmes/sustainable-cities-and-communities/>

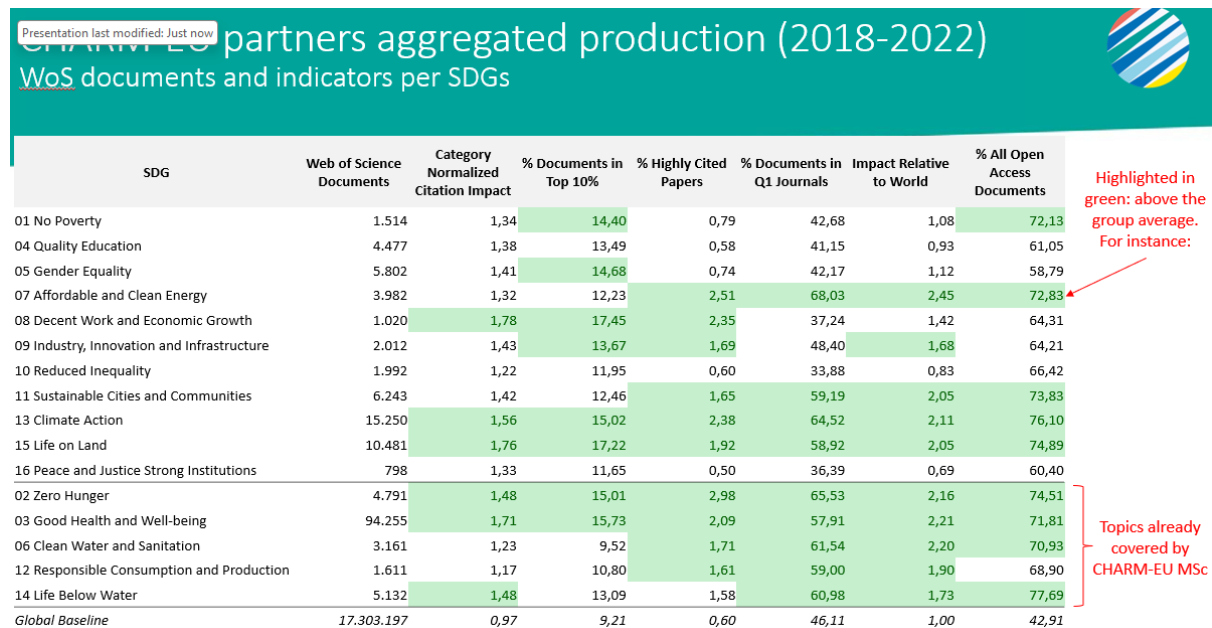
## 8.8. SUMMARY OF CONSIDERATIONS

We would recommend only one additional track for the re-accredited Master's based on staffing, budget, student number and other resources.

- An **Energy** track is a strong contender for the fourth option in the Master's. It shows strong employment growth, public interest, and relates directly to a SDG. There is competition from other joint Master's programmes, however many of these require disciplinary degrees for entry. Alliance partners have good capacity to teach in this track. Alliance partners have relatively strong research outputs in this space, but less outputs than 'sustainable cities'. It would also integrate well into the Water theme.
- A **Mobility** track could be an option for the fourth track in the Master's. The transport sector has growing employment opportunities, in particular where investment into green mobility solutions is being explored. There is little competition from other Master's. Identifying its research strengths is unclear due to its inclusion into a broader category of 'Sustainable Cities'. Overall, a mobility track does show potential, but may have marketing challenges because of the ambiguous understanding of the term itself.
- A **Society** track could be appropriate for another track however, there would be overlap with some of the Life and Health modules. It may be difficult to market the differences between these two tracks. In addition, there appears to be strong competition from other Master's in this field, and some alliance partners do not have specific expertise in this area.
- A **Technology** track shows strong market presence and employment opportunities. Additional work would need to be done to clarify what areas of technology would be focused upon to set curriculum boundaries and focus. There would be competition from other Master's.
- A **Sustainable Cities** track has a good market presence within course aggregator websites, and is used in other Master's tracks in this space. It has stronger research outputs than the Energy track. It could be broad enough to encompass Energy, Mobility, and Society, and therefore have better employment opportunities for students. It would also allow for Alliance partner teaching strengths to be integrated within the track in multiple avenues (i.e. Energy, Mobility, and Society). It would need to be considered whether the term 'sustainable' would be included in the track to align with the other single-word thematic areas (i.e. should 'Cities' be used).

## 8.9. ANALYSIS OF RESEARCH STRENGTHS FROM TORCH DATA

Under advice from the Academic Council following the market analysis, WP3.1 engaged with a member of the TORCH project to explore research data from all CHARM-EU partners. This bibliometric analysis was useful as it demonstrated that both Energy and Sustainable Cities were the research strengths of our partners, aligning with the previous market analysis.



**Figure 29** Bibliometric analysis of thematic areas within CHARM-EU institutions Analysis of student survey data

Two surveys were used to garner student needs and perceptions for a fourth track. A dedicated survey on designing the new Master's was sent to all Master's students in December 2023, and existing Phase Review surveys were analysed to ascertain what topics students felt should be added to their modules.

- Results from the 'Designing the new Master's' survey showed that the majority of students felt that the Energy, and Sustainable Cities tracks would be most in demand by potential students. When asked if they would have chosen a different track than the one they are currently pursuing, Energy emerged as the most common track that students would have selected.
- Results from analysing qualitative data from the Phase Review surveys on what topics should be added to their module, Energy emerged as a common topic that students would like to have been added to the module.

Thus, the results of these surveys demonstrated that from a student perspective the Energy track would be most appropriate for the fourth track.

### **8.10. SUPPORTING DISCUSSIONS WITH THE ACADEMIC COUNCIL AND EXECUTIVE BOARD FOR SELECTING THE FOURTH TRACK**

During these analyses, WP3.1 presented their findings to the Academic Council and Executive Board for discussion and guidance.

From these discussions based on the data presented the Academic Council and Executive Board agreed that a fourth track comprising of both **Energy and Sustainable Cities** should be established via a new Knowledge Creation Team.

This establishment was approved by the Academic Council in February 2024.

### **8.11. ESTABLISHING THE NEW KCT FOR THE ENERGY AND SUSTAINABLE CITIES TRACK**

Following the approval of the Energy and Sustainable Cities track, WP3 collaborated with WP11 to establish the new Knowledge Creation Team responsible for developing the content for this track. This KCT was established in February 2024 with members from all nine CHARM-EU alliance partners. Their first action was to prepare their module descriptors for the new Master's proposal accreditation, supported by a WP11 Educationalist. At this point, the task of WP3.1 was deemed complete.

## 9. EXPLORATION OF AN OPTIONAL 30 EC INTERNSHIP ADDITION

### 9.1. TASK AIM

This sub-WP explored the possibility of a 30 ECTS addition to the Master's in Global Challenges for Sustainability when it is reaccredited in 2025.

This task originates from this segment of text from the CHARM8 proposal:

*All the previous evaluation obtained as an output of the previous project will be used for the review.  
The activities will include the (...) exploration of an optional 30 EC internship addition*

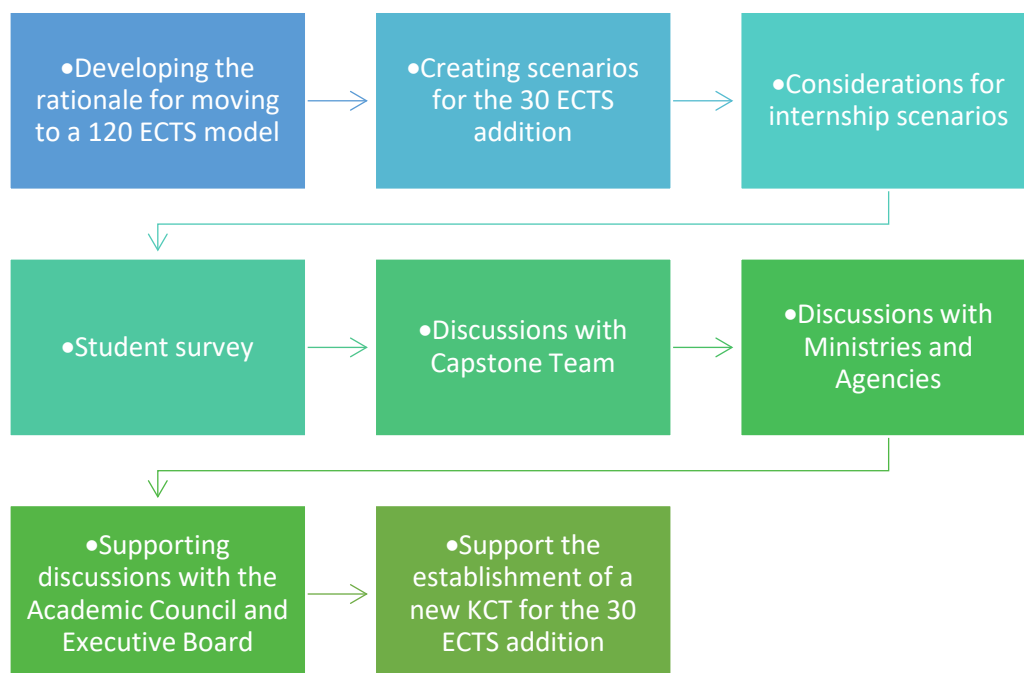
Although in the proposal the text mentions an internship option, this WP expanded this to any potential scenario for a 30 ECTS addition.

The aims of this task are to:

- Document the rationale for moving to a 120 ECTS model for the Master's in Global Challenges for Sustainability.
- Explore scenarios for an additional 30 ECTS module within the current three-phase structure of the Master's.
- Scaffold discussions with the Academic Council and Executive Board to decide on the 30 ECTS addition.

### 9.2. METHODOLOGY

To establish the possibility of a 30 ECTS addition to the Master's, and in what format this would be, the following methodology was employed:



**Figure 30** Methodology for exploring the 30 ECTS addition to the Master's

### 9.3. RATIONALE FOR 30 ECTS ADDITION AND REGULATORY NECESSITIES FOR 120 ECTS MASTER'S

The following section describes the rationale, from various institutional perspectives, and from the Capstone evaluation, for moving to a 120 ECTS Master's. This includes investigating the regulatory necessities of all partners for moving to a 120 ECTS model.

There are three main rationales for this extension.

- 1) The main rationale for extending the programme is **the legal considerations**. Since the master's programme is jointly accredited and awarded, the legal requirements of the countries are very relevant in the accreditation and validation of the degree:
  - a) Under French regulations, the current 90 ECTS structure is incompatible with the French legislation. This has greatly limited the recruitment of students from France, which has become more apparent during the first years of the programme.
  - b) In Finland, master's programmes usually have 120 ECTS.
  - c) In both France and Germany, students have to obtain at least 300 ECTS during their academic career to be admitted to doctoral programmes. As most bachelor's programmes have 180 ECTS, students need to complete a master's programme with 120 ECTS.

Thus, extending the Master's to 120 ECTS overcomes these international legal barriers which is needed for the programme to be a true international joint degree that is accepted in all participating countries.

- 2) The additional content prepares students for the final phase (semester 4) of the master's (the Capstone) through acquiring and improving their skills and gaining hands-on experience working with non-academic stakeholders, contributing to **the quality** of the master's programme. Evaluations among students, stakeholders and teachers/supervisors revealed that some students felt the need for more training in research and transversal skills, which can now be strengthened during the additional 30-ECTS semester. The final Capstone semester remains the final examination for reaching all programme learning outcomes.
- 3) With the additional semester focusing on internship and collaboration with extra-academic actors, the master's programme will align even better with the **job market** by providing students with the opportunity to apply and test their knowledge and competencies in a professional working environment while building their professional and academic networks. This will also better enable students to choose (and possibly co-define with a stakeholder) a Capstone project that best aligns with their competencies and career perspectives.

**In conclusion**, the suggested changes may attract more students due to better alignment with the European higher education landscape and job markets. The changes will also increase the academic quality of the programme and the added value of engagement with extra-academic actors, e.g., through internships. Most importantly, the changes contribute to a broader academic acceptance of the joint degree in the European Higher Education realm.

#### 9.4. SCENARIOS FOR 30 ECTS ADDITION

Six possible high-level scenarios were suggested for the 30 ECTS addition to the Master's by WP3.1. This was based on a collaborative exercise from all partners within WP3.1. The Miro Board used for this analysis is available [here](#). These are:

- **Scenario 1:** Phase 4: Business/Society Internship (30 ECTS)
- **Scenario 2:** Phase 4: Business/Society Internship + Lectures (30 ECTS)
- **Scenario 3:** Phase 4: Research or/and Business/Society Internship (30 ECTS)
- **Scenario 4:** Expanded Phase 3 (30+ 30 ECTS) Capstone 1 and 2 (Capstone prep/Capstone execution). No internship
- **Scenario 5:** Phase 4: Individualized P4 (30 ECTS)
- **Scenario 6:** Phase 4: Phase 2 repeat in Phase 4 (30 ECTS)

Four of these options include internships, and two do not include internships. Further details on these scenarios are available in the table below.

**Table 52** Scenarios for 30 ECTS addition

Scenario	High-level summary	Implications and Considerations	Cost implications
<p><b>Scenario 1:</b></p> <p>Phase 4: Business/Society Internship (30 ECTS)</p>	<ul style="list-style-type: none"> <li>Students are provided with, or submit a Business or Society internship.</li> <li>This internship is not necessarily aligned with their Capstone project.</li> <li>30 ECTS is related to the internship only.</li> </ul>	<ul style="list-style-type: none"> <li>A CHARM-EU internship policy, learning agreement, and internship agreement need drafting.</li> <li>Regulatory considerations need to be considered.</li> <li>An internship KCT needs to be developed.</li> <li>Strong alignment with WP15.</li> <li>Internship needs to be aligned with CHARM-EU PLOs, and an assessment methodology needs to be developed.</li> <li>Internship providers need to be collected.</li> <li>Administrative ownership needs to be clarified.</li> </ul>	<ul style="list-style-type: none"> <li>Internships would need a dedicated administrator either within each institution or across institutions.</li> </ul>
<p><b>Scenario 2:</b></p> <p>Phase 4: Business/Society Internship + Lectures (30 ECTS)</p>	<ul style="list-style-type: none"> <li>Students are provided with, or submit a Business or Society internship.</li> <li>This internship is not necessarily aligned with their Capstone project.</li> <li>Students must also complete lectures during this phase supporting professional development.</li> <li>30 ECTS is related to both the internship and lectures.</li> </ul>	<ul style="list-style-type: none"> <li>A CHARM-EU internship policy, learning agreement, and internship agreement need drafting.</li> <li>Regulatory considerations need to be considered.</li> <li>An internship KCT needs to be developed.</li> <li>Strong alignment with WP15.</li> <li>Internship needs to be aligned with CHARM-EU PLOs, and an assessment methodology needs to be developed.</li> <li>Internship providers need to be collected</li> <li>Administrative ownership needs to be clarified.</li> <li>Teaching staff to deliver the lectures need to be resourced.</li> </ul>	<ul style="list-style-type: none"> <li>Internships would need a dedicated administrator either within each institution or across institutions.</li> <li>Teaching staff would need to be paid if we were to add lectures to this phase.</li> </ul>

Scenario	High-level summary	Implications and Considerations	Cost implications
<p><b>Scenario 3:</b></p> <p>Phase 4: Research or/and Business/Society Internship (30 ECTS)</p>	<ul style="list-style-type: none"> <li>• Students have a choice between a Research Internship track or a Business or Society internship track.</li> <li>• This internship is not necessarily aligned with their Capstone project.</li> <li>• 30 ECTS is related to the internship only.</li> </ul>	<ul style="list-style-type: none"> <li>• A CHARM-EU internship policy, learning agreement, and internship agreement need drafting.</li> <li>• Research based and Business and Society internships need to be considered separately as they may have different outputs, learning objectives and processes.</li> <li>• Regulatory considerations need to be considered.</li> <li>• An internship KCT needs to be developed.</li> <li>• Strong alignment with WP15.</li> <li>• Internship needs to be aligned with CHARM-EU PLOs, and an assessment methodology needs to be developed.</li> <li>• Internship providers need to be collected both from industry and research.</li> <li>• Administrative ownership needs to be clarified.</li> <li>• By providing both Research and Business/Society tracks, the administrative load may be higher</li> <li>• Multiple policies may need to be made to accommodate two different interning environments.</li> <li>• The proportion of students seeking Research or Business/Society tracks needs to be known at an early stage of the Master's for administrative purposes.</li> <li>• Expectations of a research group should be considered and clarified before the student begins.</li> </ul>	<ul style="list-style-type: none"> <li>• Internships would need a dedicated administrator either within each institution or across institutions.</li> </ul>

Scenario	High-level summary	Implications and Considerations	Cost implications
<p><b>Scenario 4:</b></p> <p>Expanded Phase 3 (30+ 30 ECTS) Capstone 1 and 2 (Capstone prep/Capstone execution) No internship</p>	<ul style="list-style-type: none"> <li>The additional 30ECTS is embedded within the existing Capstone phase.</li> <li>This allows for a longer Capstone phase with a <b>preparatory</b> Capstone (i.e. workshops and working on the challenge) and an <b>execution</b> Capstone (i.e. further development) of the Capstone challenge.</li> <li>There are no internships.</li> </ul>	<ul style="list-style-type: none"> <li>Workload on teaching staff would be increased.</li> <li>A redesign of the Capstone phase would be needed.</li> <li>Students may prefer an internship rather than working on their challenge for a whole year.</li> </ul>	<ul style="list-style-type: none"> <li>Teaching staff would need to be paid for a longer period of time</li> <li>The hybrid classroom would need to be available for an extended period.</li> <li>Implications for student grants (?)</li> <li>Longer engagement of stakeholders would be needed. This may have implications on the workload and budget.</li> </ul>
<p><b>Scenario 5:</b></p> <p>Phase 4: Individualized P4 (Immersion Phase)</p>	<ul style="list-style-type: none"> <li>Students do the existing P3 focusing on only group assessments.</li> <li>P4 is an individualized phase where they choose either <ul style="list-style-type: none"> <li>an internship within the Capstone,</li> <li>individual capstone task, or</li> <li>further learning/micro-</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Having a personalized choice of options for P4 may be challenging administratively.</li> <li>An internship may be challenging if many students choose an internship with their Capstone challenge.</li> <li>Considerations for internships (see above) should be noted.</li> <li>The proportion of students choosing the various options needs to be known at an early stage of the Master's for administrative purposes.</li> <li>Microcredentials database should be collated.</li> <li>Individual capstone tasks should be defined.</li> <li>Workload on teaching staff would be increased.</li> </ul>	<ul style="list-style-type: none"> <li>Internships would need a dedicated administrator either within each institution or across institutions.</li> <li>Further learning opportunities may require payment.</li> <li>Further learning opportunities may require additional teaching staff</li> </ul>

Scenario	High-level summary	Implications and Considerations	Cost implications
	<p>credentials for 30 ECTS</p>	<ul style="list-style-type: none"> <li>An assessment methodology needs to be developed, adjusted to the various options.</li> </ul>	
<p><b>Scenario 6:</b>  Phase 4: Second Flexible Phase</p>	<ul style="list-style-type: none"> <li>P4 students choose a second P2 track (i.e. Water, Food, Life &amp; Health) to complete during the P4 timeframe.</li> <li>Thus, P4 and P2 students would be doing P2 modules at the same time.</li> <li>There are no internships</li> </ul>	<ul style="list-style-type: none"> <li>Consideration of the alignment of a second track with the culmination of the Master's.</li> <li>Phase 2 modules may have to be redesigned for the Phase 4 cohort, even if they are running concurrently.</li> <li>Consideration if students would be motivated to do two thematic tracks.</li> <li>Consideration of student numbers. In an ideal case, this would mean ~200 students for P2.</li> <li>Assessment adjusted to the different levels of P2 and P4 students.</li> </ul>	<ul style="list-style-type: none"> <li>Greater numbers of students in P2 tracks may have cost implications for the hybrid classroom (would we need more classrooms).</li> </ul>

Following the presentation of these scenarios to the Executive Board and Academic Council, WP3.1 was tasked with further exploration of the scenarios that involved internships. This was deemed an important task if a scenario with internships were to be selected.

## 9.5. INTERNSHIP CONSIDERATIONS

Following the initial scenario development, further analysis of considerations for CHARM-EU if an internship, in any guise, would be used. The following considerations were developed by WP3.1 and needed if any internship scenarios are selected for the 30 ECTS addition.

### a) Pedagogical alignment with the Master's programme

A body of work is necessary to align any personalized choices in Phase 4 with the Master's programme at a pedagogical level. This could involve:

- Alignment with Programme Learning Objectives
- Alignment with CHARM-EU educational principles
- Devising assessment processes, standards and outputs for both choices
- Ensuring a balance between workload in both options
- Description of learning outcomes for both choices

#### Decision required:

- Who will design the pedagogy and structure around Phase 4?
- Will a new KCT be needed to develop this?

### b) Timeline for selection of personalized choice

Students must select which personalized choice they wish to embark on in Phase 4 at an early stage in the Master's. The rationale for this is to ensure that management of internships or individualized thesis can be implemented in a timely manner. In addition, if students select an internship, any regulations and contracts can be completed in good time before they start the phase.

**Table 53** Potential scenarios of when a student chooses their internship and their implications

Students select their choice before they start the programme	This allows for ample time for any administrative elements and pedagogical alignments for Phase 3 to be implemented (i.e. if it is an individual thesis, to ensure that there is consideration between the group project and the individual thesis).  However, it does not allow for the student to experience the Master's yet, and decide based on their personal development during the Master's.
Students select their choice at the end of Phase 1	This allows for sufficient time for any administrative elements and pedagogical alignments for Phase 3 to be implemented.  Students would have more understanding of the programme, and may be better informed to make a rational decision on their choice.

<p>Students select their choice at the same time as their Capstone project (i.e. in Phase 2)</p>	<p>This allows for less time for any administrative elements and pedagogical alignments for Phase 3 to be implemented. However, it would likely be sufficient.</p> <p>Students would have a much greater understanding of their future pathway at this stage.</p>
<p>Students select their choice mid-way in Phase 3</p>	<p>This does not allow for any pedagogical alignments for Phase 3 to be implemented.</p> <p>It does not allow sufficient time for any administrative regulations to be implemented.</p> <p>Students would have a much greater understanding of their future pathway at this stage.</p> <p>It might be difficult for the registration process in the University of Montpellier. Usually, students need to choose their track before the start of the academic year (some flexibility may be allowed depending on their difficulty to find a training or their will of changing track and the number of students per track)</p>

**Decision required:**

- When should students choose their personalized activity for Phase 4?

**c) Impact of personalization on mobility**

Currently, students have a mandatory move from Phase 1 to Phase 2, and some move between Phase 2 and Phase 3. It needs to be considered whether students move again for Phase 4, or stay in their Phase 3 location. This would mean that they either stay in their Phase 3 location for one year, or potentially move four times in 2 years. This is likely dependent on funding available for mobility, and student preference for moving again.

**Decision required:**

- Should students move again to Phase 4 or stay in their Phase 3 location?

**d) Internship location**

Due to regulations in some alliance countries, gaining an internship can be administratively heavy and requires student effort to align with regulations (e.g. in Spain, students must have a NIE, in France there is compulsory payment for internships in France). In certain cases, there may be challenges with non-EU students gaining internships in certain countries. In addition, if internships were available in

all alliance countries, an internal internship resource could be needed in all countries to support students during their internship.

**Table 54** Potential scenarios of internship location and their implications

<p>Students can choose an internship in any Alliance location</p>	<p>This would allow for student flexibility within the Alliance countries, and the internship would be geographically located in a country where support from an Alliance partner could be given.</p> <p>Students from the Master’s would have a community within the same geographical location.</p> <p>Depending on regulations in certain Alliance countries, this may be challenging.</p>
<p>Students can choose an internship in any location</p>	<p>This would allow for full student flexibility.</p> <p>Funding for mobility to any country would need to be explored.</p> <p>Students from the Master’s may feel isolated as they would not have student or staff support from a CHARM-EU alliance country.</p> <p>Students may not be able to do an internship in some countries due to safety reasons.</p>
<p>Students can choose an internship in certain countries decided by CHARM-EU</p>	<p>This would allow for less student flexibility, and potentially limit the mobility in Phase 3, if the decision was taken that students remain in the same country in Phase 3.</p> <p>For example, CHARM-EU decides that students can only do an internship in Ireland, Germany and the Netherlands. Students who do Phase 3 in France, would have to move again in Phase 4.</p>
<p>Students can choose an internship based on their Phase 3 location</p>	<p>This scenario would be aligned with the decision of whether students move again after Phase 3. If it was decided that students do not move, then this would have implications students who choose an internship. For example, Mary selects France for Phase 3, she would have to do the internship in France also. She would have to ensure that she can do an internship in this country.</p>

**Decision required:**

- In which locations are students available to select an internship?

**e) Internship regulations**

A full analysis of all internship regulations is required to ensure that any decisions are taken with these in mind. This should be in line with best practices in other Master's programmes. An initial analysis suggests that:

- France
  - In the French system there are strict policies and regulations with internships which are available in the Appendix.
- Spain
  - In Spain, there is a maximum of 750 hours / academic year of internships and not exceeding 1/3 of the total ECTS of the Master programme
  - In a recently passed Royal Decree by Spanish Parliament, Social Security fees must be covered by the hosting company or institution, for which interns should be registered in national system (and hold an ID -NIE- number) which application might take 3-4 months.
  - UB also have the following [regulations](#).
- Other jurisdictions:
  - The majority of other jurisdictions do not have strict legal regulations, however there may be institutional barriers that require discussion and mediation.

In addition, internship policies and application documentation need to be developed, for example

- Internship agreements (required in France and in Spain)
- Requirement for payment
- Timeline for NIE application in Spain
- Maximum number of student interns in a company (French regulation)

**Decision required:**

- Who will be responsible for investigating internship regulations?
- Who will be responsible for producing agreements and policies related to internships?
- Who will have oversight and management of internship regulations

**f) Internship management and administration**

Internship management and administration could potentially be a large workload for the JVAO and teaching staff. Duties could include:

- Sorting and filtering students who choose internships (i.e. managing the personalized phase submission process)
- Ensuring all contracts and documentation are completed by all students and internship providers
- Liaising with students during the internship where conflicts or challenges arise
- Supervising individual (large number of) internships

**Decision required:**

- Does CHARM-EU have the resources available to manage internship management and administration?

**g) Individual thesis location**

Similar to the consideration of the internship location, it must also be considered where the student would complete their individual thesis. Depending on the content of the thesis, students may wish to be based in the country where the research is being conducted.

**Table 55** Potential scenarios of individual thesis location and their implications

Students complete their individual thesis in their Phase 3 location	<p>This would mean that there is no student mobility between Phase 3 and Phase 4.</p> <p>Students who choose a thesis with data sources in another location would have to ensure that their Phase 3 location aligns with the project they select for their thesis.</p>
Students complete their individual thesis in any Alliance location	<p>This would mean that students would have to choose their thesis project for Phase 4 earlier on in the programme.</p>

**Decision required:**

- Where can students complete their individual thesis?

**h) Individual thesis regulations**

A full analysis of individual thesis regulations in all Alliance partners is required to ensure that the CHARM-EU activity aligns with any internal regulations. CHARM-EU would have to create regulations and procedure around individual theses.

**Decision required:**

- Who is responsible for analyzing thesis regulations?
- Who will be responsible for producing policies and processes around individual theses?

**i) Individual thesis management and administration**

Individual thesis management and administration could potentially be a large workload for a teaching team or JVAO.

- Sorting and filtering students who choose individual thesis (i.e. managing the personalized phase submission process)
- Submission of individual theses.

- Oversight and supervision of theses.

**Decision required:**

- Does the teaching team / JVAO have capacity to manage individual thesis management and administration?

**j) Resourcing for Phase 4**

Across all of these considerations, the capacity for resourcing is key. For example,

- Teaching staff/KCT to design Phase 4 internship
- Teaching staff/KCT to design Phase 4 thesis
- Teaching staff to teach any lectures or workshops if needed in Phase 4
- Supervisory staff to monitor and support students in either choice
- JVAO to handle student selections, internship documentation, internship payment issues, and visa issues (for example)
- Mobility team to handle student mobility
- Inclusivity team to handle inclusivity issues with internships or thesis
- Quality team to review policies related to Phase 4
- Redesign/adjust assessments and rubrics

These considerations were used by the Academic Council and the Executive Board for discussion.

## **9.6. STUDENT SURVEY**

A dedicated survey on designing the new Master's was sent to all Master's students in June 2023 which included the scenarios, and information about internships.

This was deemed necessary to garner the perceptions of the target market for the new Master's.

The students were asked for their perceptions on what type of scenario would appeal to them. The majority of responses ranked scenarios with internships as the most appealing (77%). This demonstrated strong interest in internships from students.

## **9.7. DISCUSSIONS WITH CAPSTONE TEAM**

A dedicated session with the Master's Capstone team was held in June 2023 to ascertain their perceptions towards the scenarios presented.

This was deemed necessary because of the possible connection between internships and the Capstone as they are sequential in the Master's programme.

The team felt that the additional 30 ECTS should focus more on career development, employability, and transversal skills in the form of an internship, individualized thesis or course work.

## 9.8. DISCUSSIONS WITH MINISTRIES AND AGENCIES

A dedicated session with Ministries and Quality Agencies from all CHARM-EU partners was held on the 05/02/2024 to discuss the proposed 30 ECTS addition, and other affairs related to the Master's.

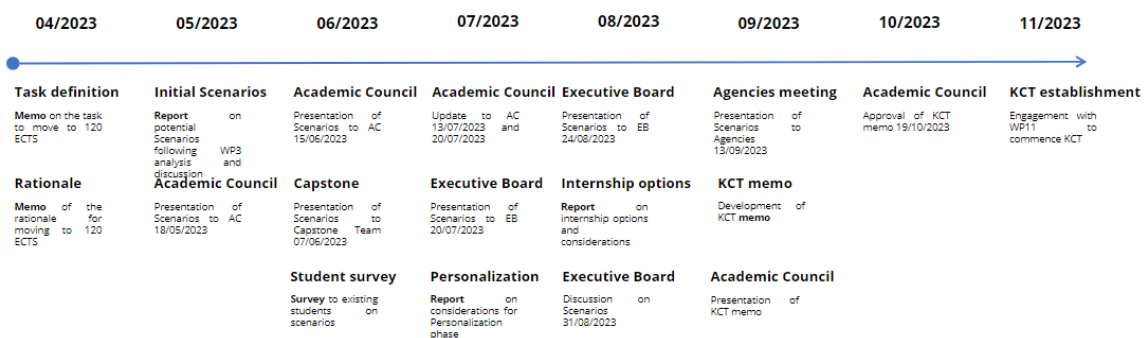
As internships were being considered for the 30 ECTS addition, consultation with Ministries and Agencies on any regulatory ramifications was necessary.

The following key points emerged from this meeting:

- **Regulatory and Funding Considerations:** Approval and funding mechanisms vary by country, with specific processes in the Netherlands and potential future changes in Hungary. Germany allows flexibility between 90 and 120 ECTS, while other jurisdictions do not.
- **Accreditation and Program Structure:** There are different views and approaches to accreditation, including the use of frameworks like EUNIQ and challenges with integrated accreditation across countries. The necessity and structure of Capstone projects and internships also require careful consideration.
- **Industry and Community Partnerships:** Ensuring sufficient partnerships with industry, community, and NGO sectors is crucial for facilitating internships and aligning programs with labour market needs, particularly in Hungary.
- **European Integration and Diplomas:** The push for a true European Diploma system by 2024 necessitates that countries adapt their joint programs to be more responsive and quicker to meet societal needs.
- **Financial and Fee Structures:** Various financial schemes and fee structures exist across countries, with specific restrictions on charging fees for EU/EEA students in Norway and Finland. National financing is possible in Hungary if programmes meet local labour market needs.

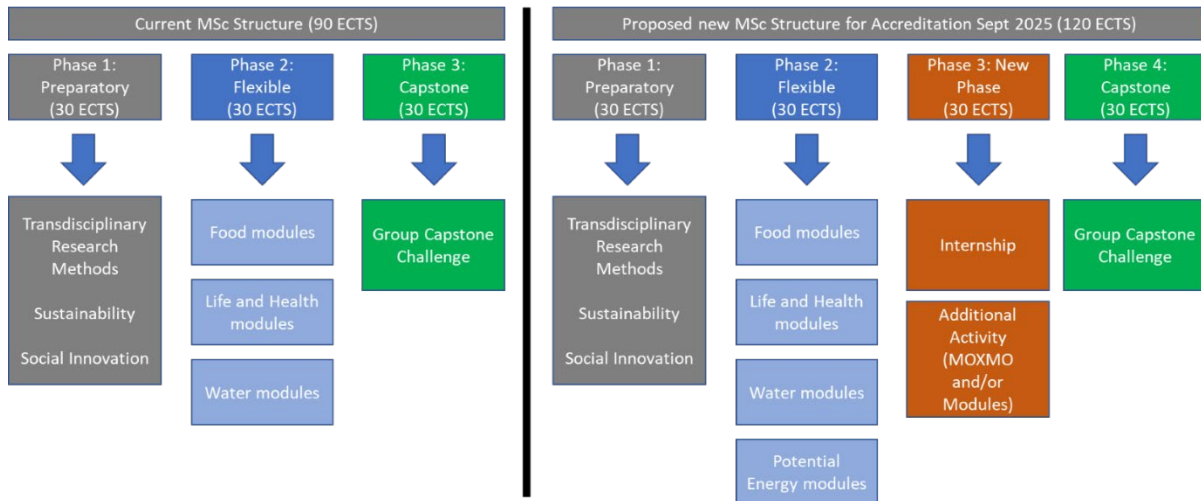
## 9.9. SUPPORTING DISCUSSIONS WITH THE ACADEMIC COUNCIL AND EXECUTIVE BOARD

Over the course of 2023, WP3.1 brought discussions of the 30 ECTS addition to the Academic Council and Executive Board.



**Figure 31** Timeline of discussions with the Academic Council and Executive Board

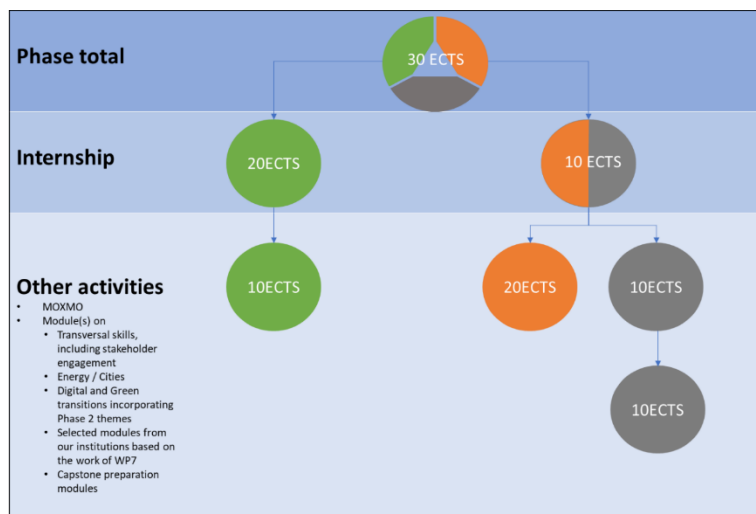
Based on these discussions, and the analysis provided by WP3.1, the Academic Council and the Executive Board agreed that a new phase should be included between Phase 2 (Flexible) and Phase 3 (Capstone) comprising of an internship and an additional activity.



**Figure 32** Proposed structure for 30 ECTS addition

WP3.1 provided further context for the potential structure of this new Phase 3 which could be:

- 20 ECTS internship and 10 ECTS other activities (green)
- 10 ECTS internship, and 20 ECTS other activities (i.e. two 20 ECTS modules, or one 20 ECTS MOXMO) (orange)
- 10 ECTS internship and two separate 10 ECTS activities (i.e. a 10 ECTS module and a 10 ECTS MOXMO) (grey)
- A 30 ECTS internship is not possible due to institutional barriers in some of our alliance institutions.



**Figure 33** Options for 30 ECTS curriculum

This information was then packaged for a new KCT to be established to finalize the structure.

### **9.10. SUPPORT THE ESTABLISHMENT OF A NEW KCT FOR THE 30 ECTS ADDITION**

Following discussions with the Academic Council, and Executive Board, it was decided that a Knowledge Creation Team with responsibility for the 30 ECTS addition should be established with experts from CHARM-EU alliance institutions. Their role would be to propose the overarching structure of the new 30 ECTS Phase 3 based on the investigations of WP3.1.

This KCT was established in January 2023, and its preliminary activities comprised of the learning objectives and module descriptor for the new Master's accreditation documents.

At this point, the work of WP3.1 was deemed complete.

### **9.11. FINAL DESIGN AND STRUCTURE OF THE NEW 30 ECTS ADDITION**

A brief summary of the final design and structure of the new 30 ECTS addition is described below:

Phase 3: Experiential phase

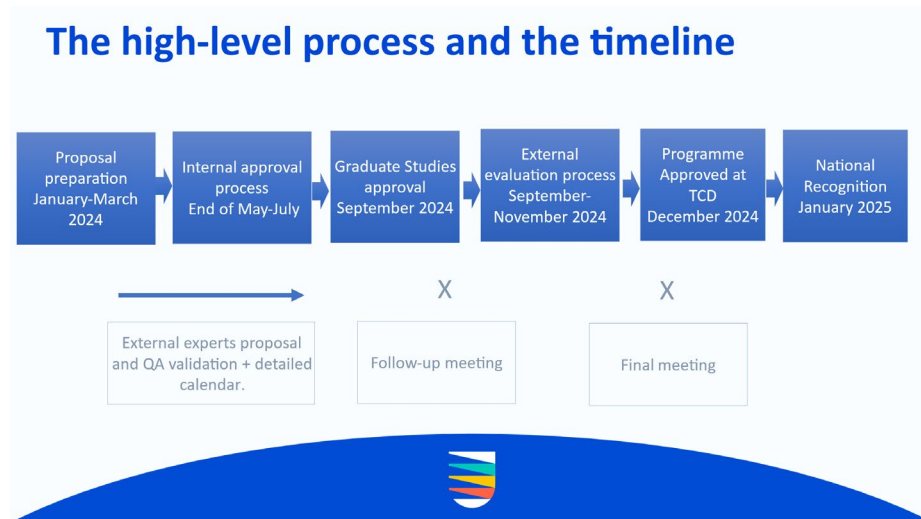
- Internship Preparation, 5 ECTS
- Internship, 20 ECTS
- Capstone Preparation, 5 ECTS

For the 30 ECTS Experiential phase, there are two 5 ECTS modules (Internship Preparation (online) and Capstone Preparation) and one 20 ECTS internship. The phase has been designed by experts in internships from alliance partners, in response to student, alumni, and stakeholder needs, with clear consideration and alignment with the PLOs.

As part of the internship, the student prepares an individual research report to provide transdisciplinary solutions to sustainability challenges within or for an external organization. This phase is supported by a dedicated team of teaching and administrative staff, including Internship Supervisors, Academic Supervisors, and Administrative Internship Coordinators. Mobility may be facilitated depending on the choice of their internship organization. In the Capstone preparation module, students will get the opportunity to practice their transdisciplinary teamwork with local external stakeholders during a mobility programme in one of the alliance cities. Furthermore, there will be opportunities to strengthen their (research) skills, before they start their Capstone project.

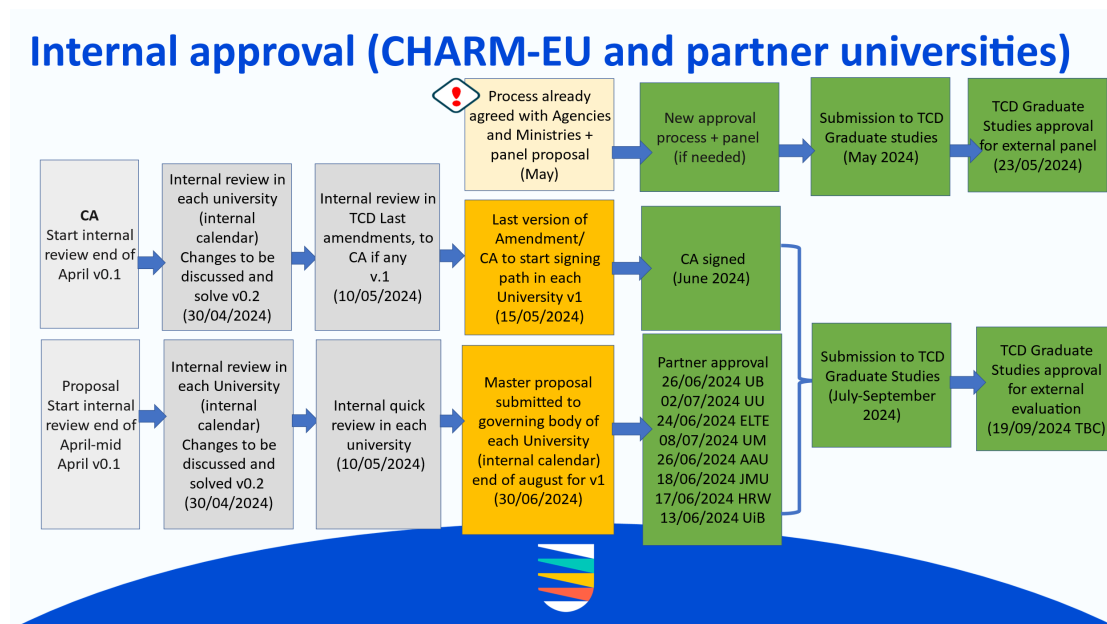
## 10. ACCREDITATION PROCESS WITH NEW PARTNERS AND CONTENT

The previous nine activities all culminated with a new proposal and consortium agreement for a 120 ECTS Master’s in Global Challenges for Sustainability including all nine CHARM-EU partners. The approval and accreditation of this proposal followed a high-level process and timeline, including proposal preparation, internal approval process in all partners, approval by TCD Graduate Studies, external evaluation, programme approval by TCD Council, and National Recognition in January 2025.



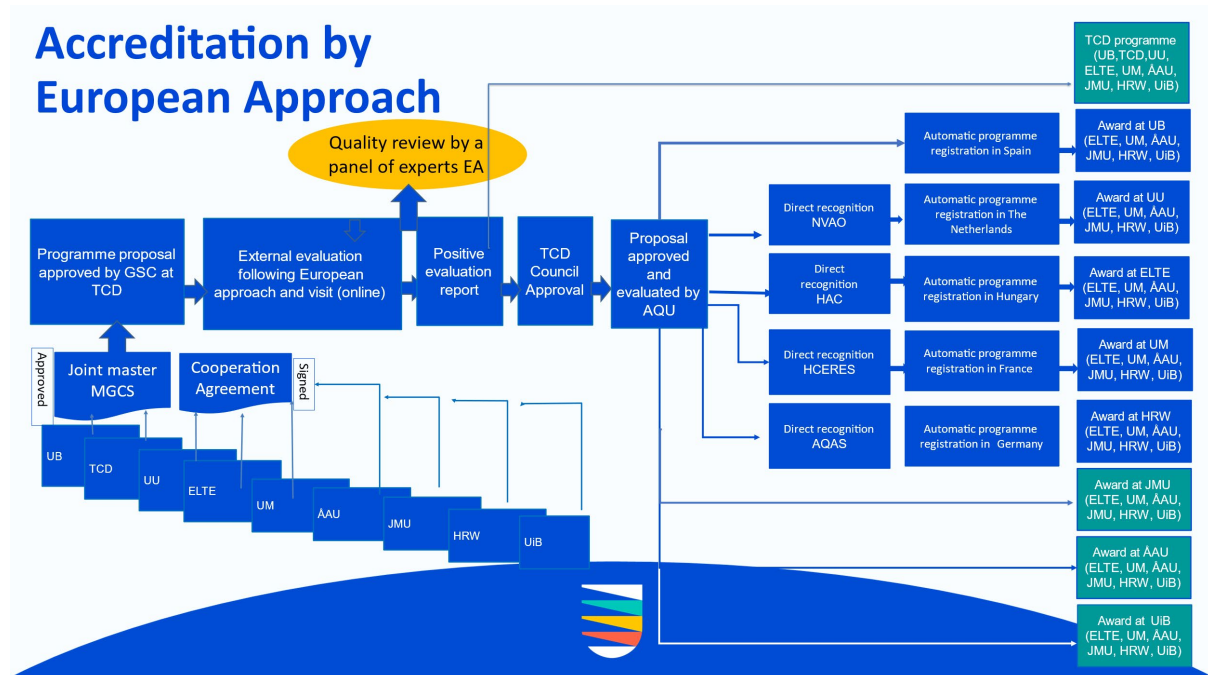
**Figure 34** High-level process and timeline for the accreditation of the 120 ECTS Master’s

Following the development of the proposal and consortium agreement, and subsequent approval by the CHARM-EU Academic Council and Executive Board, this proposal was approved internally in all nine universities.



**Figure 35** Internal approval process for the 120 ECTS Master’s

This internal approval forms part of the European Approach to accreditation which included the proposal and consortium agreement, and an external quality review.



**Figure 36** The European Approach to accreditation

## **11. APPENDIX A: REPORT ON STUDENT SURVEY RESULTS: QUALITATIVE ANALYSIS OF PROGRAMMATIC ASSESSMENT QUESTIONS**

### **1. Introduction**

This report describes a qualitative analysis of four student Phase Review survey results. These surveys, which included questions about the different aspects of the students' experience in the programme, were distributed at the end of each phase of the Master's in Global Challenges for Sustainability.

The surveys contained questions related to all aspects of the Master's in Global Challenges for Sustainability programme. However, this report focuses on any questions or comments that related to Programmatic Assessment, and related topics.

The aim of this report is to summarize and theme key student perceptions related to assessment in their experience of the Master's. This will be used to provide recommendations to improve the assessment approach in CHARM-EU.

### **2. Methodology**

The content of the Phase Review surveys were developed by Work Package 7 (Evaluation) during the CHARM-EU initial project. The surveys then were disseminated to students at the end of each phase in a dedicated session hosted by Teaching Assistants. All students were given the option to complete the survey during that time.

Multiple assessment related questions, both qualitative and quantitative, were posed to students<sup>30</sup>. This report focuses on the open comments in the survey related to assessment. These open questions allowed students to write text-based comments focusing on assessment.

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<sup>30</sup> The results of the quantitative questions are available in the Phase Review survey presentations.

- “Please describe any suggestions or improvements on teaching, assessment, inclusion and accessibility, timetabling and technologies used (e.g. Moodle, Scorpion, Teams, Sustainability Game) during Phase x”.
- Reflect on your experiences of the assessment approach in the Capstone phase. Comment on any challenges or positive aspects of the assessments.

In addition to these specific assessment questions, an open question related to general feedback was analyzed to ascertain if there were any comments related to this assessment.

- This section (Section 3) asks for your overall feedback on Phase x. This means reflecting on all three Phase x modules, x, x, and x together.

This data was then extracted into an Excel file.

This data was then analyzed by one Teaching Fellow, using qualitative thematic analysis by extracting comments into emergent themes (e.g. Scorpion, PLOs, Clarity etc...).

**Figure 1: Sample of data analysis**

Stage	Scorpion	PLO	Ax Workload	Ax Type	Final Project	Clarity&depth	Feedback/Grading	Misc
CIP2	Scorpion assessment should be improved because it still feels that it is rather cumbersome feedback. Teach the teachers on how to do assessment (Scorpion)	Clear written instructions for each assignment should be provided, with a description of the assessment rubric. The mentioning of the corresponding PLOs already helped a lot.	less assessments, more academic freedom	Improvements - assignments (presentations)		Clear written instructions for each assignment should be provided, with a description of the assessment rubric. Better communication about assignments	There was not enough time to incorporate feedback into many of our assignments. Some lecturers should provide feedback sooner.	area for improvements - assignments
CIP2	Scorpion and the final grades are still very problematic and not transparent enough for me.	comments about the PLOs to learn from are missing	The amount of assessments, this was very overwhelming and an unrealistic workload.	different ways of assessment (instead of presenting the same thing 4 weeks in a row)		more precise instructions on the assignments	Extra assessors would also help with the workload for module coordinators and would mean that we get our feedback sooner.	I appreciate the general idea of individual assessment and focus on skills and development rather than... Teach the teachers on how to do assessment (Scorpion); elaborate guidelines to
CIP2	Working with Scorpion went wrong a lot of times	Assignments: not every PLO is always applicable to every assignments: please reduce	Distribution of assignments could have been better aligned with the other	The assessments were very focused on the group work. This could lead to less		share clear expectations of what the assignments are meant to include (word	The only thing that could be enhanced is a bit more explanation of the	

### 3. Results

A total of 221 results were received across all four surveys.

**Table 1: Description of survey data collection**

Survey name	Date of dissemination	No of participants
Phase 1 Cohort 1 Evaluation Survey	03/02/2022	57

Phase 2 Cohort 1 Evaluation Survey	01/07/2022	49
Phase 3 Cohort 1 Evaluation Survey	31/01/2023	61
Phase 1 Cohort 2 Evaluation Survey	26/01/2023	54

A total of **13343** words were analysed.

## 4. Key themes

The following sections describe the key themes that were generated from the thematic analysis, and provide some recommendations based on this. The results are grouped by phase where relevant, to describe any differences between the phases.

### 4.1. Scorion

In **Phase 1** students gave mixed feedback about Scorion as an assessment tool. Approximately ¼ of respondents reported that it was difficult/very difficult to use but did not further mention or comment on Scorion as a platform in Phase 1.

In **Phase 2** however, students commented that it was difficult to use. Example comments included “Working with Scorion went wrong a lot of times” and “Scorion is very user-unfriendly”.

Although most respondents reported that Scorion was ‘easy to use and navigate’ by **Phase 3**, comments continued to be predominantly negative. Comments included “Scorion just doesn’t work”, “Scorion is always an issue and not opening or uploading” and “Scorion is difficult as if mistakes are made, it is impossible to correct”. Some feedback in Phase 3 also commented on Scorion being “confusing in terms of PLOs that are attached to a specific assignment”. Another comment stated, “the spider graphs on Scorion do not always represent your expertise in each PLO or their progression (i.e. some PLOs are represented as

a straight line, although it is clear to me that I have improved)”. However, one respondent felt “the Scorion platform and the way of assessing us was really interesting”.

#### **4.1.1. Recommendations**

- Review the use of Scorion as an assessment platform.
- Train assessors on how to use Scorion appropriately
- Train assessors on how to use Scorion related to accurate assessment of PLOs

#### **4.2. Workload**

Another key theme that was generated across the four surveys related to workload. Overall, there was mixed feedback regarding the manageability of teaching and assessment workload including some positive comments indicating students felt the workload was well balanced during phase one and two.

For **cohort one phase one**, students commented on the quantity of assignments. Comments suggested that the students may have preferred fewer assignments to allow them to produce higher quality work. Example comments included “Less assignments would be better. They could even be a bit bigger and go over two-three weeks for example”.

Although most students indicated that they agreed the teaching and assessment workload was manageable in **phase two**, the above key theme continued throughout the second phase. Students felt the workload was not balanced with multiple deadlines occasionally overlapping. One student commented that “the workload this phase has been a bit too much both for students and assessors. The feasibility of projects in the time frame that we have should be assessed beforehand. It was also a lot to have to do individual research at the same time as a group report”.

The feedback relating to workload for **phase three** indicated that it was challenging to complete the full project in a relatively short timeframe. Students felt “it was challenging to do data collection in such a short amount of time”.

**Cohort two phase 1** students mentioned workload less often in relation to phase one. One comment suggested “the assignments could have been much sooner to avoid the stress in November”.

### **3.2.1 Recommendations**

- Communication between the different module coordinators could ensure that deadlines and workload are appropriately spread out.
- To make the workload more manageable, rather than reducing the number of assignments, relating assignments to a lower number of PLOs to reduce their size, may improve this experience.

### **3.3 Assessment Type**

During **phase one**, cohort one students felt that more in-depth, individual and applied assignments would be beneficial. For the social innovation module, students gave positive feedback regarding the local assignment about the literature review. However, several comments provided negative feedback regarding the ‘gamification’ of assignments specifically in the social innovation module.

In **phase two and three**, the theme of students’ preference towards including more individual assignments continued. Students also felt they would benefit from more of a diversity of assessments, particularly in phase two, rather than repeated presentations.

**Cohort two phase 1** students provided more positive feedback in relation to the types of assessments incorporated into phase one. The video making and visual essay assignments were mentioned positively by respondents. Although one comment mentioned the benefit of group presentations by learning from peers, another comment once again referred to a preference towards more individual assignments.

#### **3.3.1 Recommendations**

- An improved balance between individual and group assignments in all modules.
- Including a more diverse range of assessment types

### **3.4 Clarity**

A key concern expressed throughout all four sets of survey results relates to clarity of assignment briefs and instructions. Students also felt there was a lack of “Clear explanation of what we are working towards with the different assessments”. Areas for improvement

expressed in students' comments included "communication of assignments", "assignments descriptions" and "Clear written instructions for each assignment should be provided".

Students also felt that there would be a benefit of centralising assessment information i.e. posting instructions on one platform. The following is a comment that summarises the overall feedback relating to this aspect "In general expectations were not clear and assignments were not always explained very well (often had to ask for clarification)". Students also felt that it would be beneficial to receive assignment instructions further in advance. For example, one respondent commented "give more clear guidelines about the final project slightly earlier".

### **3.4.1 Recommendations**

- Clear and precise written instructions detailing each assignment in each module should be provided well in advance of the set submission date, if not at the beginning of the phase.
- These instructions should include details such as word count and referencing style alongside clear explanation of how the assignment applies to the module and associated PLOs.

### **3.5 Grading & Feedback**

*"Assessments and grading a source of stress and frustration" "The assessment approach is innovative, but it is and will always be subjective". "Assessor subjectivity". "Teach the teachers on how to do assessment (Scorion)". "Training so assessors know exactly how programmatic assessment works".*

The above comments highlight the key messages that have been extracted from the students' survey responses in relation to grading of assessments and associated feedback. Students felt that "calibration of grades" between assessors and other strands, was an area for improvement. Survey respondents commented in all phases on grading being 'unfair' and variable between the different assessors.

Students reported that they felt the grading system using descriptors rather than numerical grades was not useful. One respondent commented “The ‘pre-novice, novice, intermediate, etc.’ don’t work in my opinion, as they are really subjective in being translated to a grade. And that grade is important for future opportunities”.

### **3.5.1 Recommendations**

- A strong message that arose from student feedback is that further assessor training should be considered. This would help to limit assessor subjectivity and disparity in grading and feedback.
- Providing feedback in a timely manner should also be worked on. Students feel this would allow them the opportunity to apply any feedback from previous assignments.

## **3.6 Miscellaneous**

Smaller subthemes were generated that may be of relevance, but a low number of students mentioned these elements.

**3.6.1 Sample Assessments** – “Create a workbook with all the contents, more exercises/assignments to practice”.

**3.6.2 Appeals** – “It is quite difficult to know that there is no real possibility to appeal your grade, because the narrative on why certain PLO levels are achieved or not achieved will simply be changed”. “One major issue is that we have no mechanism to appeal for any assessment. This has the underlying assumption that teachers are infallible. This was a very unmotivating factor for many students this semester, including myself”.

**3.6.3 PLOs** – Students commented that assignment feedback occasionally lacked reference to how improvements could be made in line with the PLOs. Students felt they would benefit from being provided with information on how PLOs applied to and would be assessed for each assignment. Other comments referred to some PLOs not being applicable to assessments. Students indicated that a review of the relevance of each

PLO may be beneficial in preventing confusion surrounding expectations in assignments. A review of PLOs ensuring they are clear and self-explanatory may also aid assessors in providing meaningful feedback.

## **5. Conclusion**

The primary concerns raised by the students across all phases relates to the lack of timely, constructive or consistent assignment feedback. Furthermore, inconsistent grading between students and strands alongside inappropriateness of the grading system were highlighted by respondents throughout all phases. Clarity of assignment expectations and instructions was mentioned throughout. Revision of Scorion was also a primary concern.

The overall impression from the students' feedback is that they could appreciate the rationale behind the assessment process and grading system but that they feel it is currently flawed and in need of review.

## 12. APPENDIX B: ANALYSIS OF EDUCATIONAL PRINCIPLES IN VARIOUS DOCUMENTS

### 1.1. Introduction and task aim

This document summarizes an analysis of the CHARM-EU Educational Principles as they are referred to and explained in the following documents:

- Educational Principles
- EP Infographic
- 4.3 Practical tips for Knowledge Creating Teams
- D4.1 Pedagogical Guidelines
- D4.3 Teaching and Learning Handbook

The focus on this review is to:

- Make sure all documents define and use the educational principles in a consistent manner.
- Explore if the documents are clearly and easily understood by someone who has not learned about the educational principles before.

This report relates to the 3.1 Review and Update of Educational Principles task: **Educational Principles Activity and Impact:**

- Explore the **integration** of the educational principles in CHARM-EU **documentation**.

Document analysis methodology:

To explore the educational principles in the five documents that were analyzed, they were read carefully by a new member of the CHARM-EU alliance with no prior knowledge about them.

Each principle was compared throughout the five documents concerning:

- Spelling or naming to assure consistency throughout all documents
- Analysis of educational principles concerning clarity and ease of understanding

### 1.2. Educational principles and pedagogical guidelines: consistent spelling and definition

#### **Educational Principles**

- 1. Challenge-driven: Change Challenge-Based to Challenge-based
- 2. Research-led, research-based: Change Research-Based to Research-based

#### **EP Infographic:**

- Situated, authentic learning: Change to situated learning
- Inclusive: Change to Inclusivity

#### **4.3 practical tips for Knowledge Creating Teams (KCT)**

- Either change the heading from educational principles to pedagogical guidelines or change all the educational principles back from the guidelines (e.g. Challenge-driven instead of Challenge-based Learning. In the following suggestion the EG were used as they offer more concrete suggestions for teaching and learning settings than the more global principles.
- Research-led Research-based: Change to “Research-led, Research-based”
- Technology-Enhanced: Change to “Technology-enhanced”
- Student Centred Teaching and Learning: Change to “Student-centred Learning and Teaching”
- Transdisciplinarity: Change to Tansdisciplinarity in Education
- Inclusivity: Change to Inclusivity in Education
- The recommendations about Student-centred Learning and Teaching should be rewritten. They should be more explicit about what this shift from teaching to learning means: Everything is designed with the students’ learning in mind. Not from the perspective of “what to cover” or “how to deliver”...
- The recommendations about Transversal Skills should be expanded on. There is a recommendation missing concerning the explicit teaching of those skills (not only implicitly by using them).
- The recommendations on Transdisciplinarity in Education should include a short text that refers to discussing or reflecting on the differences between disciplines (like different epistemologies or hermeneutics, value systems, differences in the disciplinary language (e.g. between engineers, scientists and economists). Another idea could be to have 2-3 teachers with a different disciplinary background in the module and let them demonstrate different disciplinary approaches and ways of thinking and doing
- Inclusivity in Education: In blue box: “Ask if your students need anything in particular.” Rephrase: “Ask if your students need any specific accomodation to assure their learning success and offer anonymous ways of communicating these.”. In same EP: their = they
- For “Step 2”: Change spelling of EPs to EG as indicated above.

#### **D4.1 Pedagogical Guidelines**

- Page 7: Executive summary should be clearer on the distinction between Educational Principles and the Pedagogical Guidelines that are discussed in this pdf. E.g. exchange the word “concepts” with guidelines. Also: Change “Challenge Based Learning” to “Challenge-based Learning”, “Technology Enhanced” to “Technology-enhanced”, “Student Centred” to “Student-centred”
- Page 8f: Change naming of EPs to challenge-driven, research-led and research-based, sustainability, technology-enhanced, student-centred, situated learning, transversal skills, transdisciplinarity, transnational and intercultural learning, and inclusivity (as they are named in pdf “Educational Principles”).
- Exchange Figure 1 with an updated version with the correct wording (EP infographic above).
- Page 9: Review paragraph about translation of pedagogical principles to pedagogical guidelines. There needs to be a clear description of what a principle is and what a guideline is.
- Page 10, 11, 17, 28, 36, 60: Change spelling to be consistent.
- Page 68: Clarify in first paragraph that the following are Educational Guidelines derived from the Educational Principles. In the first sentence, approach is used instead of principle. The two concepts should be clearly distinguished.

- Page 68: Change Challenge Based to Challenge-based and Research led, Research Based to Research-led, Research-based (Headings)
- Page 69: Change Technology-Enhanced to Technology-enhanced. Change Student Centred Teaching and Learning to Student-centred Learning and Teaching (Heading)
- Page 71: Change learning to Learning (Heading 3.9)
- Page 72-77: Change spelling for consistency and use Educational Approaches instead of principles.

#### **D4.3 Teaching and Learning Handbook**

- Page 7: Clarify in “What is the aim of this handbook” that the educational principles are expanded into educational guidelines for the context of programme and module development.
- Page 10: Change challenge based to challenge-based.
- Page 13: Include new version of figure 1 (see above) and change spelling to be consistent.
- Page 14: Change spelling to be consistent.
- Page 35: Make clear that this pdf contains guidelines about how to integrate the educational principles.

#### 1.3. Key findings and recommendations

It is important to be very consistent with the spelling, wording and definitions. Otherwise, the educational principles and corresponding pedagogical guidelines are quite confusing:

- Name the pdfs in the order with which they should be opened/read for onboarding purposes: 1. Educational Principles, 2. Practical Tips for KCTs, 3. Pedagogical Guidelines.
- Integrate a common explanation about the differences between educational principles (core values) and pedagogical guidelines (how to integrate the principle in teaching and learning context) in each pdf.
- While the focus of this analysis was on consistency and clarity of the EP, it is obvious that the chapters in the Pedagogical Guidelines pdf were not very consistent concerning how broad and deeply they explore the guidelines. They could (and maybe should) also be updated and expanded with newer sources as these documents might become key resources for the next couple of years in the context of “charmifying” activities in WP3, 9&10 and 11.

### 13. APPENDIX C: PLO AND MLO MATRIX FOR THE MASTER'S IN GLOBAL CHALLENGES FOR SUSTAINABILITY.

*Table 7. Individual module learning outcomes mapped to course learning outcomes at programme level*

PLOs	MLOs
PLO1. Critically analyse and evaluate the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors. Reflect upon these to understand the relevant ethical issues and the role of active citizenship, in particular within a European context.	MLO 1.2, MLO 1.6, MLO 2.1, MLO 2.2, MLO 2.3, MLO 3.1, MLO 3.3, MLO 3.6, MLO 4.1, MLO 4.2, MLO 5.1, MLO 5.3, MLO 5.7, MLO 5.10, MLO 6.1, MLO 6.2, MLO 6.3, MLO 6.4, MLO 6.9, MLO 6.10, MLO 7.1, MLO 7.2, MLO 7.5, MLO 7.10, MLO 8.2, MLO 8.5, MLO 8.8, MLO 9.2, MLO 9.3, MLO 9.6, MLO 9.7, MLO 10.2, MLO 10.5, MLO 11.3, MLO 11.4, MLO 11.7, MLO 12.1, MLO 12.2, MLO 12.3, MLO 12.5, MLO 12.6, MLO 12.7, MLO 13.7, MLO 13.9, MLO 13.10, MLO 13.11, MLO 13.12
PLO2. In collaboration with extra-academic actors, investigate and evaluate complex societal challenges from a variety of stakeholder, gender and intercultural perspectives to creatively identify, select and devise robust, adaptable, ethical solutions using a range of methodologies, theoretical frameworks and data analysis tools.	MLO 1.1, MLO 1.3, MLO 1.4, MLO 1.6, MLO 1.7, MLO 2.3, MLO 2.4, MLO 2.5, MLO 2.6, MLO 2.7, MLO 2.8, MLO 2.9, MLO 3.6, MLO 3.7, MLO 3.8, MLO 4.2, MLO 4.4, MLO 4.9, MLO 5.2, MLO 5.3, MLO 5.5, MLO 5.6, MLO 5.10, MLO 6.1, MLO 6.2, MLO 6.4, MLO 6.5, MLO 6.6, MLO 6.9, MLO 7.7, MLO 7.8, MLO 7.9, MLO 7.10, MLO 8.5, MLO 8.6, MLO 8.7, MLO 8.9, MLO 9.8, MLO 9.9, MLO 10.2, MLO 10.3, MLO 10.4, MLO 10.6, MLO 11.1, MLO 11.3, MLO 11.4, MLO 11.5, MLO 11.6, MLO 12.1, MLO 12.2, MLO 12.3, MLO 12.5, MLO 12.6, MLO 13.4, MLO 13.7, MLO 13.8, MLO 13.9, MLO 13.10, MLO 13.11
PLO3. Rigorously assess and integrate different disciplinary and transdisciplinary knowledge and	MLO 2.6, MLO 2.8, MLO 3.2, MLO 3.3, MLO 3.4, MLO 4.6, MLO 5.1, MLO 5.2, MLO 5.4,

research methodologies to connect research questions, data and findings to their challenges.	MLO 5.5, MLO 5.9, MLO 5.10, MLO 6.1, MLO 6.3, MLO 6.5, MLO 6.6, MLO 6.10, MLO 7.1, MLO 7.3, MLO 7.6, MLO 7.7, MLO 7.8, MLO 3.11, MLO 7.11, MLO 7.12, MLO 8.1, MLO 8.2, MLO 8.3, MLO 8.4, MLO 8.7, MLO 9.1, MLO 9.4, MLO 9.5, MLO 9.7, MLO 9.8, MLO 10.1, MLO 10.3, MLO 10.4, MLO 10.5, MLO 10.6, MLO 10.7, MLO 11.2, MLO 12.1, MLO 12.3, MLO 12.5, MLO 12.7, MLO 13.7, MLO 13.8, MLO 13.9, MLO 13.10, MLO 13.11, MLO 13.12, MLO 13.13, MLO 13.15
PLO4. Demonstrate expertise in the identification and application of the latest technological tools to source, analyse, handle, use and communicate complex bodies of data ethically.	MLO 2.6, MLO 3.4, MLO 4.3, MLO 5.2, MLO 5.4, MLO 5.5, MLO 5.7, MLO 5.8, MLO 6.2, MLO 6.6, MLO 6.7, MLO 6.8, MLO 8.4, MLO 10.7, MLO 11.2, MLO 11.5, MLO 13.5, MLO 13.10, MLO 13.12, MLO 13.13, MLO 13.14, MLO 13.15, MLO 13.16
PLO5. Formulate an advanced understanding of transdisciplinarity and demonstrate expertise in the facilitative, communicative, reflexive and collaborative skills to support its practice.	MLO 1.2, MLO 1.3, MLO 1.4, MLO 2.8, MLO 2.9, MLO 2.10, MLO 3.5, MLO 3.8, MLO 4.4, MLO 4.5, MLO 4.7, MLO 5.3, MLO 5.4, MLO 5.6, MLO 5.8, MLO 5.9, MLO 5.10, MLO 6.4, MLO 6.5, MLO 6.7, MLO 6.8, MLO 6.10, MLO 7.4, MLO 8.6, MLO 9.9, MLO 10.6, MLO 11.2, MLO 11.3, MLO 11.4, MLO 12.6, MLO 13.2, MLO 13.3, MLO 13.8, MLO 13.9, MLO 13.10, MLO 13.11, MLO 13.12, MLO 13.13, MLO 13.14, MLO 13.15, MLO 13.17, MLO 13.18, MLO 13.19
PLO6. Communicate effectively on complex issues that aim for behavioural change, interpreting and connecting complex challenges to diverse stakeholder, disciplinary and intercultural perspectives that encompass global and European citizenship.	MLO 1.2, MLO 1.3, MLO 1.4, MLO 1.6, MLO 1.8, MLO 2.1, MLO 2.2, MLO 2.5, MLO 2.8, MLO 2.9, MLO 2.10, MLO 4.8, MLO 5.3, MLO 5.9, MLO 6.10, MLO 7.1, MLO 7.4, MLO 8.6, MLO 8.7, MLO 9.9, MLO 12.8, MLO 13.5, MLO 13.10
PLO7. Acquire advanced competency within a range of transversal skills such as communication, teamwork, problem solving, creative thinking, innovation, entrepreneurship, digital skills and a life-long learning disposition.	MLO 1.1, MLO 1.2, MLO 1.3, MLO 1.4, MLO 1.5, MLO 1.7, MLO 2.9, MLO 3.5, MLO 3.7, MLO 4.7, MLO 4.8, MLO 5.5, MLO 5.8, MLO 5.9, MLO 5.10, MLO 6.2, MLO 6.4, MLO 6.7, MLO 6.8, MLO 6.10, MLO 8.6, MLO 8.9, MLO 9.9, MLO 11.6, MLO 12.4, MLO 12.8, MLO 13.12, MLO 13.1, MLO 13.2, MLO 13.3, MLO 13.4, MLO 13.6, MLO 13.11, MLO 13.14, MLO 13.17, MLO 13.18, MLO 13.19

**14. APPENDIX D: FULL REPORT ON STUDENT PHASE REVIEW SURVEY QUESTIONS RELATED  
TO ONLINE AND IN-CLASS LEARNING EXPERIENCE AND SUPPORT QUESTIONS**

# CHARM-EU



**CH**allenge-driven  
**A**ccessible  
**R**esearch-based  
**M**obile  
**E**uropean  
**U**niversity

**Report on Student Survey Results: Qualitative analysis of online and in-class learning  
experience and support Questions**

**Angeliki Lima and Silvia Gallagher**

**WP3**

## **1. Introduction**

This report describes a qualitative analysis of four student survey results. Those surveys were distributed to the students at the end of each one of the three phases of the Master's in Global Challenges for Sustainability. The surveys included questions about different aspects of the students' experience in the programme, however this report focuses on the learning experience and more specifically on the hybrid classroom and VLE applications.

The purpose of this report is to highlight and synthesize the key themes of the learning experience that arise from the student responses. This will be used to develop and offer suggestions for enhancing the student learning experience in CHARM-EU.

## **2. Methodology**

The content of the Phase Review surveys were developed by Work Package 7 (Evaluation) during the CHARM-EU initial project. The surveys then were disseminated to students at the end of each phase in a dedicated session hosted by Teaching Assistants. All students were given the option to complete the survey during that time.

Multiple student experience-related related questions, both qualitative and quantitative, were posed to students<sup>1</sup>. This report focuses on the open comments in the survey related to the learning experience in the hybrid classroom and the Virtual Learning Environment (VLE).

The following are the steps taken to identify the main themes presented and analyzed in this report.

Step 1: all questions that explicitly mention the hybrid classroom and VLE applications and their data from the four surveys were extracted into a new excel spreadsheet. More broad questions referring to general feedback regarding the Master's were included, to ensure that any comments from the students related to their learning experience were not omitted.

Step 2: Each survey data was searched for appearances of the words related to the hybrid classroom, online learning, and VLE applications and the results were extracted into a new excel spreadsheet. More specifically the terms used for the search in this step were the following:

- “VLE” and “virtual learning environment”
- “hybrid classroom” and “classroom”
- “online” and “platforms”
- “Scorion”, “Teams” and “Moodle”
- “issues”, “sound”, “microphone”
- “camera”, “webcam”
- “technology”, “problems” and “glitch”

Step 3: This data was then analyzed employing qualitative thematic analysis. The comments were extracted into a new excel spreadsheet where the key themes were identified.

**Figure 1: Sample of data analysis**

Stage	Hybrid Classroom issues with physical space	Reducing the number of platforms	Scorion	Moodle	Teams	How to use platforms	Timetable	Other supports (financial, accommodation & mental health)
CI P1	It would be extremely good to really set up all the necessary equipments needed for a functioning hybrid classroom in advance (e.g., microphones/ speakers for the screens) etc. The cafeterias are not really suited for vegans/ vegetarians but it is fine.	It would have been nice if the platforms were merged into one. Now there was a timetable on Teams that was not used by some teachers.	The concept of scorion was good, but its implementation was very user unfriendly. Mainly because of many things that could have been automated (e.g. having to individually give feedback to each team member in group).	There is no added value of moodle in my opinion, could we maybe consider decreasing the number of platforms?	Teams was really difficult to manage, some lectures were shallow if related to our background but too difficult if not related to our background. I had a hard time understanding the structure and maybe first focusing in sustainability, then in tr and finally on si would make more sense. Giving the full timetable in advance was very helpful and newsletter too. We	I think scorion and moodle were not equipped properly for this course. It was unclear and still I have not received alot of feedback from tutors and peers even after chasing them down. I really liked the concept of it but executed to its full extent as it could have been. I think improvements that could have been was clarity about the programs we were using and actually ways to get conclusive feedback instead of it being rushed.	We have to find other ways to make everything clearer, for instance the timetable should not be provided through an excel. I mean, come on, we could do a shared google calendar among students from the same module. Moreover, I think that sometimes we didn't check the assessments and the feedback received. If we do not check it then, we	the strongest asset is having people physically sharing a class together. I believe less emphasis on technology and more focus working together and then sharing internationally via Teams.
CI P1	Would be amazing if we could access another room, its quite loud sometimes when everyone is online.	We are aware of the difficulty to organise a masters like that and we appreciate all the efforts! It is true though that having all these platforms can be a bit misleading. Maybe assessments instructions as well as deadlines should be all place in one place and only submit it in one single document rather than having the instruction in different platforms. Also it would be nice to have a session in how to use those as well as how to assess the PLCs and peer feedback	Scorion is too complicated, moodle could be used better, put all the assignments in ONE place with all deadlines and details of how to submit	personally did not use Moodle, it feels like the information was just doubled up from Teams, so it was sort of redundant to have Moodle.	Post classes on moodle rather than teams (or maybe even both). teams is not easy to navigate through when it comes to finding slides and trying to open different classes at once.	More focus on showing details of these platforms during the first week	They need to stick to the timetables. For example class being an hour more than the timetable allocated	Some of us had less good technical equipment. They were disadvantaged. It would be helpful if there would be support to buy equipment or provided the ones in class or clear instructions to not come with unfit laptops.
CI P1	responsible for is much worse than in all the other locations. This is not the fault of the CHARM-team at this location, as they were always trying very hard, but the general structure of this uni and hungary. But a few things were not really working and were never changed e.g. the room is too small to work in groups, there needs to be an audio system + mic or	It would have been nice if the platforms were merged into one. Now there was a timetable on Teams that was not used by some teachers.		We had quite a lot of issues with teams in my group. I see the appeal of it but I prefer zoom in a combination with drive. We barely used Moodle, maybe incorporate it more in the future or drop it (would help students find documents)	MacBook users encounter technical issues with Teams, more specifically while on meeting with cameras on. It is not well supported and the devices experience overheating issues and blackouts.	It would be beneficial to have more time dedicated to teaching how to properly use the digital tools.	Timetables/calendars/etc were very unclear at times.	Remove non EU fees to allow more people outside the EU. Will ensure that there are more international perspectives

### 3. Results

A total of 221 results were received across all four surveys.

**Table 1: Description of survey data collection**

Survey name	Date of dissemination	No of participants
Phase 1 Cohort 1 Evaluation Survey	03/02/2022	57
Phase 2 Cohort 1 Evaluation Survey	01/07/2022	49
Phase 3 Cohort 1 Evaluation Survey	31/01/2023	61
Phase 1 Cohort 2 Evaluation Survey	26/01/2023	54

A total of **13343** words were analysed.

### 4. Key themes

The key themes identified in the analysis and a brief description of each theme is presented in the table below:

Theme	Description
Hybrid Classroom issues with physical space	Comments on the physical environment. The students identified issues faced regarding the technology and space and included suggestions for improvement.
Reducing the number of platforms	This theme was evident in all surveys but was the most commented on in Cohorts 1 & 2 of Phase 1. The students found the use of more than one platform to pose a significant

	difficulty in communication and reduce efficiency.
Scorion	Comments on the use of Scorion. The majority of the comments derived from Cohorts 1 & 2 of Phase 1 and focused on Scorion not being user friendly.
Moodle	Comments on the use of Moodle. The comments questioned the necessity of Moodle as a platform, as the majority of the information found in Moodle could be found in Teams.
Teams	Comments on the use of Teams. The comments were mostly highlighting technical issues faced by users (mostly IOS users), as working on Teams for several hours can cause overheating and/or lagging issues.
How to use platforms	This theme highlights the need for training on how to use the platforms by staff and students alike.
Timetable	The theme emerged as a large number of comments focused on a) the need for an easily accessible calendar that is updated regularly and b) the need for the staff to be informed of the calendar and follow the timetable so that last-minute changes are avoided.
Other supports (financial, accommodation & mental health)	In the theme the students' request for additional support is highlighted. The comments on financial and mental health struggles, along with difficulties in finding accommodation in Utrecht and Dublin, were extensive and seemed to highly affect the learning experience of the students in the Master's.

Those themes are going to be further explored in the next sections.

#### **4.1 Hybrid Classroom issues with physical space**

There were three issues that arose regarding the physical space of the hybrid classroom. Those included comments about inclusivity and technical difficulties.

##### **4.1.1. Inclusivity**

Students commented on the inclusivity of the hybrid classroom by highlighting that the environment could be too overwhelming from a sensory point of view, as the comment below shows.

*“For people suffering from attention disorder, it is IMPOSSIBLE to focus in this environment.”*

Other comments pointed to the fact that the same room is used for groups working on different activities and that can lead to challenges in completing tasks. The students' responses also mentioned the need for flexibility to rearrange furniture in the rooms, to facilitate different types of work.

##### **4.1.2. Technical Issues**

Sound issues were the most common concern mentioned by the students. The fact that there were difficulties in being heard on the other end of a call with groups in different locations, had a severe impact on their learning experience.

*“TCD hybrid classroom definitely need another microphone (e.g. like the one in Montpellier)”*

##### **4.1.3. Recommendations**

- Review the rooms used in every location and assess their appropriateness for long days of online lectures. The sensory input from sources other than the lecture should be minimised as much as possible.
- Provide a second option of a space that students can use when they need to work on different group tasks.
- Review the microphones in every room and increase the number of microphones available. Efforts to provide microphone in every table or headsets for each student,

especially in rooms where the microphone is in a fixed location away from the students.

## **4.2. Reducing the number of platforms**

The responses in all four surveys, especially cohorts 1 & 2 in phase 1, brought the issue of using three platforms as a key concern. It is pointed out that the number of platforms used hinders communication and efficiency instead of facilitating it, as the comments below show:

*“a huge amount of digital platforms does not mean that a university is very advanced in using technologies in an innovative smart way. it creates more chaos than without. Less is more.”*

*“Because information is scattered between so many different channels it becomes very hard to find information. Truth be told, the majority of us only knew about files, dates, articles, and other data points due to the communication on WhatsApp with classmates.”*

### **4.2.1. Recommendations**

- Review the need and function of each platform (Scorion, Teams, and Moodle) in the programme.
- Ensure that there is one clear channel of communication for students and staff where all the information can be found easily and it gets updated regularly.

## **4.3. Virtual Learning Environment (Scorion, Moodle and Teams)**

This theme relates to 4.2, as all comments on VLE platforms derived from the students' recommendation for the need to access and reduce the number of platforms used. While different students had different opinions on which platform is more user friendly, there were repetitive comments for each one of them, which are presented below.

### **4.3.1. Scorion**

Comments on Scorion focused on the fact that it is not a user-friendly platform and that it needs to be reviewed as an assessment tool. Students' expressed that their main concern was that they were not sure whether their submission reached the assessors and that they did not receive feedback in time.

*“Scorion and the final grades are still very problematic and not transparent enough for me.”*

#### **4.3.2. Moodle**

Moodle received mixed comments from students. It seems that the platform itself poses no difficulties to the users and the feedback focused on how necessary it is to use a third platform. Most comments pointed out that information on Moodle could be found in other channels of communication:

*“I would suggest that if Moodle is going to be a part of our timetabling, scheduling, assessment, lecture content etc. it needs to actually be used. We were not given anything on this platform this phase and I think it could have been more useful that having everything on teams and scorion as it has more of a structure than giving files etc. on a teams chat.”*

#### **4.3.3. Teams**

Teams seems to be the most popular and most user-friendly platform in the program. Feedback on the use of Teams highlighted struggles by iOS users:

*“Seems like MacBook users had huge struggles with Teams and its compatibility to the point that devices would crash.”*

#### **4.3.4. Recommendations**

- As mentioned in 4.2.1. review the number of platforms being used for the program.
- Ensure that technical support is provided for Windows and iOS users regarding the use of VLE platforms.

### **4.4. How to use VLE platforms**

This theme includes feedback on the need for training for students and staff alike, in order for the use of VLE to be improved.

#### **4.4.1. Students**

Students pointed out that at the beginning of the programme it is necessary to organise training on how to use VLE platforms. That would allow time and support to familiarise with the VLE platforms and would minimise frustration and inefficiency in the future.

*“It would be nice to have a session where all the technology platforms are explain. I think this would avoid a lot of stress for the academia staff as well as the students, Once you get familiar with the platforms, it is easier to use them but it is a bit confusing to have different instructions, readings or feedback tables in different platforms.”*

#### **4.4.2. Staff**

Feedback on staff using the VLE platforms was more extensive and evident in all four surveys. Students focused on the fact that online lecture and workshops in the hybrid classroom were not interactive enough and that the student experience would improve if staff were more aware of the audience, the philosophy of the programme and the need to adapt the teaching style to deal with the challenges of online teaching. Online teaching challenges and how to mitigate them seems to be primary concern of the students, as shown below:

*“the lectures and workshops are hybrid! please design them that way. the teacher should interact with students in other locations than the one he or she is in. Moreover, when they do, they should allow some time! It takes time to type questions in the chat, raise hands in MS Teams and unmute the microphone. We want to engage! please allow us space and time to do so.”*

Another key concern of the students was that the teaching staff were not familiarised enough with the use and the aims and purposes of each VLE platform:

*“Sometimes teaches/coaches that are not extremely connected to the program, they do not know how they are supposed to grade us on Scorion.”*

*“Multitude of learning platforms and professors should induce more structurization of learning platforms. Instead, we had numerous modules and professors who had no idea how to use learning platforms and decided not to use them (e.g. Moodle).”*

*“there were still issues on the side of the teaching staff with technologies which hampered the student experience at times.”*

#### **4.4.3. Recommendations**

- Training at the beginning of each phase for students and staff alike on the purposes of each VLE platform is key. Provision of continuous technical support would improve the student experience.

- More specifically, the student experience would improve further if CHARM teaching staff and guest lecturers were provided training on how to teach, access and upload material on VLE platforms.

#### 4.5. Timetable

Issues with the timetable were evident in all four surveys. Those included the timetable not being consistent or updated, the challenges of having too many last-minute changes, and the need for the timetable to be easily accessible.

*“Use a timetable software (instead of a schedule in a teams folder...)”*

*“Also we need calendars with all deadlines per module that are up to date and have clear instructions. The amount of late and only orally transmitted instructions was really really difficult to keep up with.”*

##### 4.5.1 Recommendations

- The use of one channel of communication about the timetable is key. Ensure that all updates are communicated in a timely manner and followed by all teaching staff.
- Consider the use of an academic calendar that can sync with individual calendars, so that it is easily accessible by all, and all updates and changes are communicated at once.

#### 4.6. Other supports (financial, accommodation & mental health)

This theme includes all comments on various kinds of supports that are not directly connected to teaching or VLE platforms, however they would further improve the learning experience. The main concerns pointed out to financial, accommodation and mental health support and the students were quite vocal about all three in all four surveys.

##### 4.6.1. Financial

Students highlighted the fact that two aspects of financial struggles had a significant impact on their learning experience, the fact that there were differences in terms of affordability between locations and that fees were not possible to be paid in installments:

*“Some sort of financial support should be received before the BIPs as not everyone is able to pay in advance the high costs and specially as prizes increase.”*

*“I think the distribution of money, for example some people can't effort to move to Dublin, whereas Budapest is way more affordable. So inclusivity could be improved on this matter.”*

*“CHARM-EU is not accessible and inclusive at all in terms of finances. For example, that you have only a week to pay the full tuition fee and can't pay it in terms.”*

#### **4.6.2. Accommodation**

This issue concerned all students that moved to either Dublin or Utrecht, cities with a well-known housing crisis.

*“Students arriving to Utrecht must get help to get housing. I spent most of my mobility living in expensive airbnbs and not able to always join class because I would need to commute 3 hours per day”*

*“I was lucky to have found a room via TCD, however the price is crazy for what you actually get. This is why I give a six, my experience was an eight but I lost all my savings going there. The location is super, but the wages are double the price of any of the other locations which really has to be taken into account for the next phases because this actually excludes many students of living in Dublin, whilst I would argue that it is the best university (together with UU).”*

#### **4.6.3. Mental Health**

Mental health issues and lack of support was evident in all four surveys. The main issues discussed were the need for mental health support, disability support, and non-EU student support as the responses below show:

*“I have a disability and I would have liked to be automatically registered with the disability service here when I got registered with charm eu. They seemed to recommend that I don't get registered here but it would have helped me a lot as I couldn't access certain services. Additionally, counselling seemed to have been available with charm eu when I applied but this was actually not on offer and I was recommended to go at trinity where I never had time to start.”*

*“I could not, in good conscience, recommend this program to any non-European citizen, particularly no one with extenuating circumstances (difficult financial situation, has to work other jobs).”*

*“most students' mental health severely decreased during the master's, so a certain counseling service within CHARM would be useful or a check-in how people are doing mentally”*

#### **4.6.4. Recommendations**

- Review more financial support mechanisms for students, that correspond to the cost of living in each location.
- Accommodation support and affordable solutions for Utrecht and Dublin especially are urgently needed.
- Timely payment of grants
- Review of payment methods for fees (payment in parts)
- Non-EU support with visa requirements and financial aid.
- Ensure that all students know and can register quickly and can access counseling services, disability services and inclusion offices in all locations of CHARM-EU. Make sure there is a point of contact in each location to help students with difficulties in registering and accessing those services.

#### **4.7. Conclusion**

In conclusion, the primary concern in the students' feedback is related to clear communication through VLE platforms and ensuring that all parties, students, and staff alike, receive training and support on the use of the VLE platforms. The number of VLE platforms needs to be reviewed to avoid duplicate or inconsistent information.

Physical spaces in all locations need to be re-accessed in terms of accessibility and appropriateness for long days of online lectures and group work.

Finally, more support is needed regarding financial challenges, mental health, and disability in order to improve the learning experience of CHARM-EU.

## 15. APPENDIX E: REVIEW OF THE MENTOR PROGRAMME

As part of CHARM8 WP3 “Advancing and Broadening CHARM-EU Educational Practice”, a sub task, WP3.1 “Optimising in-class and online learning experience and **support**”, was identified. As part of this sub-task an evaluation of the mentor programme was recommended. This aligns with the ‘support’ element of WP3.1.

**The aim of this report is to document the evaluation and recommend changes to the implementation and structure of the CHARM-EU mentor programme.**

### Scope

The recommendations from the analysis will inform the 2025 edition of the Master’s programme. However, some recommendations will be piloted for the 2023 and 2024 cohorts where possible.

### The CHARM-EU Mentor Programme

Mentors in CHARM-EU are a key part of the CHARM-EU teaching and learning programme. Mentors are located across these three phases and engage with student mentees throughout the entire Master’s programme. Student mentees and mentors meet at the beginning of each Phase and during the rest of the Phase as required. Mentors meet with mentees to discuss and support them in the feedback they receive for their module assessments. More information is available in the [mentor handbook](#).

In the 2021-2023 cohort there were 30 mentors from all five institutions. In the 2022-2024 cohort there were 20 mentors from all five institutions.

### Evaluation participants

The following participants were used for this evaluation, students, mentors, and the JVAO mentor coordinator. Table 1 below provides details of the data sources for the evaluation.

**Table 1: Stakeholders and data source for evaluation**

<b>Data source</b>	<b>Description</b>	<b>Date</b>	<b>No. of respondents</b>
Student Phase Review Surveys (4)	Four Phase Review surveys (P1, P2, P3 cohort 1, P1 cohort 2) were analysed for information regarding mentoring	03/02/2022 01/07/2022 31/01/2023 26/01/2023	221
Mentor survey	A survey on mentoring experiences was conducted with CHARM-EU mentors in 2022.	2022	10
Mentor feedback session	A focus group with mentors was held in April 2023 to gain their perceptions and challenges with the CHARM-EU mentor programme.	02/04/2022	14
Mentor co-ordinator session	A session with CHARM-EU mentor co-ordinators was held in March 2023 where recommendations emerged.	27/03/2023	5
JVAO interview	An interview with the JVAO officer responsible for mentor co-ordination was held in March 2022	15/02/2023	1
Total			251

## Methodology

The evaluation methodology was a mixed method approach using qualitative and quantitative approaches. All data sources were analyzed and then recommendations were produced based on this analysis.

Following the development of recommendations, these will be shared with the Academic Council for prioritization and piloting.

## Results

For each participant cohort, comments were thematized to allow for easier analysis across all cohorts. These were then formulated into recommendations. These were:

- Mentor selection and recruitment: Comments on how the mentors were selected and recruited for participation in the mentor programme.
- Mentor commitment: Comments related to the commitment of mentors during the programme.
- Mentor-student relationship: Comments related to the relationship between mentors and students
- Mentor communication: Comments related to communication with and between mentors.
- Mentor training and support: Comments related to the training and support mentors receive.
- Student engagement and resources: Comments related to how students are provided information about the mentor programme.
- Program structure and organization: Comments related to the overall structure and organization of the mentor programme.
- Mentor incentives: Comments related to how mentors are incentivized to participate in the programme.
- Personal Development Plans (PDPs): Comments related to PDPs
- Mentor evaluation: Comments related to how mentors are evaluated.

### Recommendations from JVAO

An interview was held with the JVAO officer responsible for the administration of mentors in CHARM-EU. Her role includes allocating mentors to students, managing the pool of mentors in CHARM-EU, organizing mentor feedback sessions, and liaising between the mentor co-ordinator, local mentor co-ordinators, and other key mentor stakeholders.

The following recommendations emerged from the interview, and have been grouped in thematic areas.

#### **Mentor selection and recruitment:**

- Reduce mentor pool to ensure improved quality, this would mean each mentor takes 4 or 5 students rather than 1 or 2.

- Reducing mentor pool will also ensure MAF completion because they will be more engaged with students.
- Only include those people involved in CHARM or willing to learn about CHARM.
- Standardize mentor recruitment process across CHARM, lack of transparency currently.
- How do we ensure a mentor does not only sign up for the financial incentives?
- Improve the balance of mentors across institutions

#### **Mentor commitment**

- Motivation letter from the mentor to improve quality
- Mentor agreement between student and mentor standardized (List expectations, role definitions, must complete one PDP and one MAF)

#### **Mentor-student relationship:**

- All mentors take 5 students (Group is too big and too disparate and hard to control, would improve student experience)
- Mentor allocation should be based on existing CHARM knowledge, P1 location, and interests (track)
- Face-to-face establishes a better relationship

#### **Mentor communication**

- Offer once/two per phase drop-in
- Greater mentor community development through drop-ins
- Make sure all mentors receive the student newsletter
- Mentor structure (Time and dates of PDP and MAFs should be defined at the very start, creation of calendar at the start of the cohort "Year at a glance for mentors")

#### **Mentor training and support**

- Training provided needed at the start of P1
- Mentor training should have an expert involved in CHARM (Improve structure, learning outcomes, etc., KCT member, buddy system, deliver the handbook, two sessions: one on CHARM, one on being a mentor, Scorion specific training)

#### **Student engagement and resources:**

- Student information on mentoring in orientation week
- Create mentor Moodle module for students

#### **Program structure and organization:**

- Rationale behind why PDPs and MAFs (Need clear message as to why this needs to be done)
- Mentor administration and role definition (Redefine the structure with the JVAO officer as the mentor coordinator, mentor expert is not required for administrative purposes, bring in experts for training and at the drop-in sessions only, issue of duplication of organizational approval with two roles, quicker communication of administrative elements with one role is needed)

### **Mentor incentives**

- Digital badge when one cycle completed

#### Recommendations from Students

Data from four student phase review surveys was extracted relevant to the mentor analysis. This included questions on their perception towards the mentoring programme, and any improvements that they identified. The following recommendations emerged from the survey data, and have been grouped in thematic areas.

### **Mentor communication**

- Mentor monthly information email from JVAO to mentors about what the students are currently doing, deadlines, assessments, and deliverables
- Central person for mentors to contact for CHARM information
- Phase overview document for mentors on deadlines and assessments

### **Mentor training and support**

- Buddy system with established mentors

### **Program structure and organization:**

- Revision of the training programme
- Greater clarity on expectations and role by revising the structure of the programme
- The programme structure (i.e., timeline, PDPs, etc.) should be redesigned
- Redesign the mentor selection programme

### **Personal Development Plans (PDPs):**

- Less PDPs
- PDP template for students
- Rationale for PDPs is clearer
- MAF template

### **Mentor selection and recruitment**

- Aim to use mentors within the CHARM organization
- Match students and mentors with similar disciplines or interests or inclusivity, etc.
- Match students with mentors from their P1 location
- Mentors should have prior mentoring experience

### **Mentor commitment**

- Mentors should sign an agreement to the programme and to their student (Mentor student agreement or mentor charm agreement)
- Mentors should ensure they have the capacity to mentor
- Mentors should complete a form which outlines their reasons and motivations for being a mentor

### **Mentor evaluation**

- Should mentors be evaluated by students?
- Mentors should be screened and evaluated before they come into the programme

### Recommendations from mentors

Two data sources were used for these recommendations, a mentor survey, and a mentor feedback session. The following are recommendations that emerged from both of these analysed. These reports are available in the appendix.

### **Mentor communication**

- Improve communication between the CHARM-EU organizers and mentors.
- Provide clear instructions and guidance on the mentors' role and expectations. This should also highlight inclusivity guidance, and clarity on the boundaries of a mentor mentee relationship.
- Most report spending 3 hours or over 3 hours per student per phase. Clear guidelines on the preparation work and meetings with students should be provided.
- A clear definition and description of the role of the mentor should be established. This then needs to be clearly communicated to all students and mentors. This could be done as a written guide/protocol and/or as a group information session involving both the mentors and their mentees as a collective. This would ensure that all mentors and mentees are given the exact same information which would encourage the formation of the same expectations.
- Share relevant information regarding students' assessment deadlines, tasks and progress, to help mentors better understand their mentees' needs.

### **Mentor training and support**

- Enhance mentor onboarding, training, including sessions on CHARM-EU's structure, content, programmatic assessment, and expectations.
- Establish a mentor community through peer-to-peer local meetings, regular meetings, check-ins, and collaboration opportunities.
- Organize mentor-specific training sessions, focusing on CHARM-EU's unique aspects and systems, such as Scorion.
- Offer more support and resources for mentors, including practical examples and advice
- Mentors requested specific training on FAQs, transdisciplinary training (knowing how to mentor students to involve transdisciplinary working into their professional development), questioning (One of the main competencies of good mentoring is asking good questions that trigger the relevant response from the student), mentor handbook, learning, structuring PDPs (and having more clarity around them), what you shouldn't do (relates to boundaries)
- For the first meeting with the mentees, provide the mentors with a list of questions to use (supports the mentor to get the relevant basic information).
- Receiving guidance on what to do with students who are doing well as it can be difficult to create a PDP when the student is already doing really well.
- Create one place/online location with all the relevant information and advice on prioritization of what is important to focus on as a mentor.

- (Not sure if possible) but having at least occasional (or at least one) face to face meeting with the mentee to develop the connection quicker. Particularly at the beginning. Maybe assign students to a mentor in the location they are in for phase 1.
- Possibility to have an annual in-person meeting for the mentors as this might be a way to make the role more attractive to other staff in the universities due to the networking opportunity.

#### **Mentor-Mentee Relationship:**

- Clearly define the mentor's role to both mentors and students, emphasizing the difference between mentorship and teaching.
- Establish clearer expectations and boundaries for the mentor-mentee relationship, including mentor involvement in student assessments.
- The responsibility of who organizes meetings should be clarified, and a process for when a breakdown in communication occurs should be established.

#### **Programme Structure and Organization:**

- Improve the overall organization of the CHARM-EU Masters Programme.
- Provide a comprehensive calendar or "year at a glance" for mentors, outlining important dates, deadlines, and events.
- Specific dates could be incorporated into the academic timetable as a clear indicator of when mentor-mentee meetings should take place. This would allow for planning in advance and less inconvenience for mentors to fit in with students' timetable.
- Address logistical issues with scheduling meetings and ensuring that mentorship sessions can be accommodated within the program's structure.

#### **Mentor Selection and Recruitment**

- Ensure transparency and consistency in the mentor recruitment process across CHARM-EU.
- Focus on recruiting mentors with a genuine interest in mentoring and knowledge of the CHARM-EU program.

#### **PDPs**

- The current PDPs need to be made more interesting and relevant to the students' development.
- The PDP process may need to be redefined and adapted as the program progresses and as the student goes through the program.
- Different objectives may be used at different stages of the course, and PDPs can be related to specific PLOs for that phase.
- A more formalized structure should be developed around each of the PDPs, with different objectives for each point/phase/topic to show development.
- The first CHARM students could be asked if their PDPs could be used as examples for current and future students and mentors to provide best practice examples.
- Feedback was given that there are too many DPD throughout a phase at present and this leads to repetition. A suggestion was given to have only one submission at the end of the semester.

- An observation was indicated that as PDPs are not part of overall assessment mark, students may feel less motivated/stressed to do them.

## Recommendations from mentor coordinators from each institution

A meeting was held with mentor coordinators from each institution in March 2023. The following recommendations emerged.

### **Mentor evaluation**

- Identifying how the quality of mentoring could be conducted from each institution

### **Mentor training and support**

- Provide personal and professional support for mentors by creating the local mentor groups or supervision opportunity for mentors
- Provide training in new topics that could help mentoring (ex. inviting stakeholders etc.)
- Building up practical digital support for mentoring

### **Mentor Selection and Recruitment:**

- Recruiting new mentors should define the exact criteria and numbers
- Creating a timeline for redesigning the mentoring structure until the new cohort arrives in September.

### **PDPs**

- Defining the exact role of PDP (even together with mentors)

## High priority recommendations

High priority recommendations for optimizing the mentor programme have been grouped in thematic areas for further approval and prioritization (see table 2). Additional recommendations that were deemed medium or lower priority have also been documented in a separate spreadsheet which is available on request.

**Table 2: High Priority recommendations for optimizing the mentor programme**

Recommendation theme	Recommendations
Programme Structure and Organization	<ol style="list-style-type: none"> <li>1. Clarify the roles and responsibilities of the Mentor Administrator, Mentor Coordinator, Mentor Local Coordinator, and Mentor Trainer (see section below).</li> <li>2. Redevelop the <b>Mentor Programme handbook for Mentors and Students</b> clarifying role expectations, mentor/student meetings calendar, PDP deadlines, MAF deadlines, year at a glance calendar, overall structure, and PDP/MAF templates.</li> <li>3. Develop an <b>internal Mentor Programme Administrative handbook</b> for the Mentor Administrator, Mentor Trainer, and Mentor Local Coordinators</li> <li>4. Incorporate mentor meetings into the Student Calendar.</li> <li>5. While recruiting and managing the mentors, each local coordinator of the 5 universities should identify a "backup mentor" at the beginning of each phase in case there are students left behind</li> </ol>
Mentor selection and recruitment	<ol style="list-style-type: none"> <li>1. Develop clear mentor criteria for selection (commitment, number of mentees they can take, relationship to CHARM etc...) and document in an <b>internal Mentor Administrative handbook</b>. This will reduce the mentor pool, easing administrative workload and improving quality.</li> <li>2. Create a <b>Mentor Registration form</b> including selection criteria, which is shared with any prospective and existing mentors to register their interest in being a mentor.</li> <li>3. Match students and mentors based on their interests and Phase 1 location. This would involve using the <b>Mentor Registration form</b> to gather this data from mentors, and</li> </ol>

	using student registration data to align mentors and students.
Mentor commitment	<ol style="list-style-type: none"> <li>1. Create a <b>CHARM-EU/Mentor Agreement</b> to formalize commitment by mentors during their onboarding process. This would be signed by mentors when they are selected as a mentor.</li> <li>2. Create a <b>Mentor/Student Agreement</b> to formalize commitment between Mentors and Students. This would be signed by both parties in their first meeting.</li> </ol>
Mentor communication	<ol style="list-style-type: none"> <li>1. Clearly outline mentor roles, activities and expectations in the <b>Mentor Programme Handbook</b></li> <li>2. Add all mentors onto <b>Student Newsletter emails</b> to improve visibility.</li> <li>3. Use Local Mentor Coordinators to inform mentors what activities students are currently doing.</li> <li>4. Develop a clear procedure guideline for mentor/student communication issues, how to react if problems/conflicts arise in the mentor/mentee relationship</li> </ol>
Mentor training and support	<ol style="list-style-type: none"> <li>1. A formal <b>Mentor Trainer role</b> is created within WP11 (Professional Development) to align with deliverables of WP11 and WP3.</li> <li>2. Redevelop the <b>Mentor Training Programme</b> based on recommendations including new content, drop in sessions, local sessions and peer support.</li> </ol>
Student engagement and resources	<ol style="list-style-type: none"> <li>1. Create <b>Mentor Moodle modules</b> for students to improve the communication of the mentoring programme.</li> <li>2. Improve <b>Mentoring resources</b> for students during the orientation week.</li> </ol>

Personal Development Plans (PDPs)	<ol style="list-style-type: none"> <li>1. Incorporate new <b>PDP guidelines and templates</b> for mentors and students in the Mentor Handbook for Students and Mentors.</li> <li>2. Incorporate PDP deadlines into the timetable</li> <li>3. Reducing PDPs to one per phase due to short time periods between existing PDPs which impacts on reflection periods for students.</li> </ol>
Mentor evaluation	<ol style="list-style-type: none"> <li>1. Develop a <b>check in form</b> for students at the end of Phase 1 to ascertain if mentor communication has commenced and structure future meetings</li> </ol>

## Clarity on roles for mentor programme

A high priority recommendation is to clarify the roles of individuals who form part of the mentor programme administration, coordination, and training. A discussion with all parties was conducted on the 31/05/2023 and the following roles and responsibilities are recommended:

### **Mentor Administrator**

- Creating and managing the mentoring programme calendar with the Mentor Coordinator in the summer preceding the programme start date.
- Creating and managing a monthly mentor newsletter with the Mentor Coordinator to be shared with all mentors
- First point of contact for all mentoring related queries from staff and students
  - Sharing pedagogical-mentor queries with the Mentor Coordinator for their response
  - Responding within one week to administrative queries related to the mentor programme.
  - Responding within one week to student/mentor conflicts, and engaging with the Academic Council where necessary.
- Management of all new mentor recruitment.
- Management of student/mentor allocation.
- Providing technology access to new mentors for Scorion, Teams and Moodle.
- Updating the mentor database on Sharepoint where necessary.
- Management of mentor/student agreement administration
- Management of mentor/CHARM-EU agreement administration
- Management of student check in form at the end of Phase 1

### **Mentor Coordinator**

- Developing and updating all mentor programme documentation, including all Handbooks and Agreements before the start of each programme year.
- Developing materials for training new mentors on the mentor programme before the start of each programme year.
- Designing and implementing an online training event for new mentors
- Designing and attending mentor drop-in meetings on a monthly basis.
- Engaging with Mentor Local Coordinators on a regular basis to facilitate a community of practice
- Setting mentor programme calendar dates with the Mentor Administrator
- Responding to pedagogical-mentor related queries from mentors and students within one week.
- Developing materials for communicating the mentor programme to students
- Hosting an information session for students on the mentor programme during the orientation week of the Master's in September.
- Attending the information day for incoming Master's students in June.
- Managing new MAF and PDP templates, from design to updating and communication.

### **Mentor Trainer**

- Supporting the Mentor Coordinator in developing and updating all mentor programme documentation, including all Handbooks and Agreements before the start of each programme year.
- Supporting the Mentor Coordinator in developing materials for training new mentors on the mentor programme before the start of each programme year.
- Supporting the Mentor Coordinator in designing and implementing an online training event for new mentors
- Supporting the Mentor Coordinator in designing mentor drop-in meetings on a monthly basis. Attendance where relevant.
- Supporting the Mentor Coordinator in developing materials for communicating the mentor programme to students
- Supporting the Mentor Coordinator in managing new MAF and PDP templates, from design to updating and communication.

### **Mentor Local Coordinator**

- Responding to local mentor queries from their institution.
- Facilitating in person drop in mentor sessions where necessary.
- Updating the Mentor Coordinator and Mentor Administrator with any mentor/student concerns or queries
- Identify back up mentors for cases where a new mentor is necessary.

### [Key documents for development or redevelopment](#)

As part of these recommendations, the following key documents were developed or improved.

- Mentor Programme Handbook for Students and Mentors
- Mentor Administration Handbook
- Mentor Moodle information for students
- New mentor Submission Form
- Student check in form
- CHARM-EU/Mentor Agreement
- Mentor/Student Agreement

## 16. APPENDIX F: MENTOR SURVEY REPORT

### **1. Introduction**

On commencing Phase 1 of the CHARM-EU Masters Programme on Global Challenges in Sustainability, each student was assigned a mentor from one of the participating universities. At the end of Phase 1, the mentors were asked to provide feedback on the mentoring experience through a survey distributed to them online. This report details the analysis of ten of these survey responses from this first cohort of mentors in relation to mentoring students in Phase 1 of the programme.

The survey contained both quantitative and qualitative questions. These questions related to overall the mentoring experience, previous expectations of the role, opinion of the Masters programme itself, any issues or challenges encountered, and suggestions on how to develop or change the mentoring process/involvement of mentors.

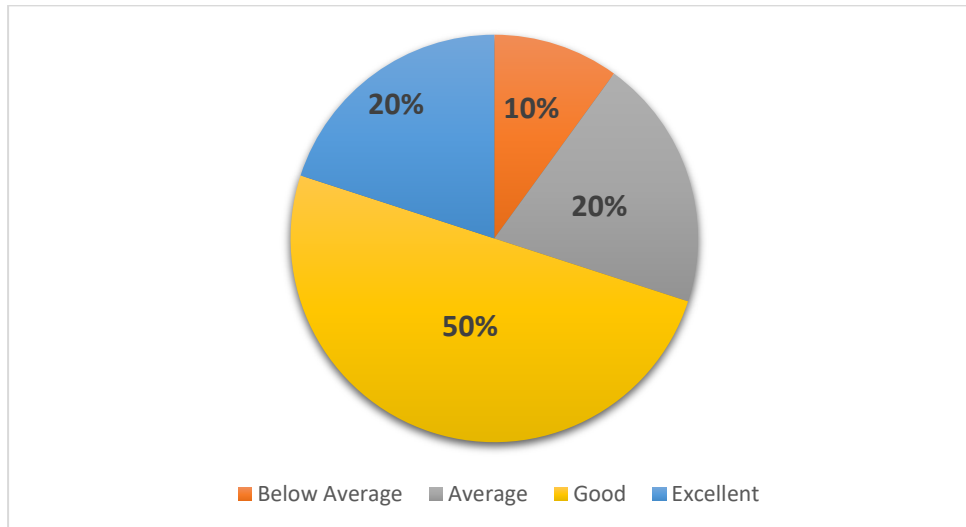
### **2. Methodology**

This survey was developed by the CHARM-EU mentoring team during 2022. Multiple mentoring related questions, both qualitative and quantitative, were posed to the mentors. This report predominately focuses on the open comments with reference made to the quantitative questions relating to rating different aspects of the programme and mentoring experience. The open questions allowed mentors to write text-based comments focusing on their thoughts and experience of their overall involvement in mentoring process. The responses from each of the ten returned mentor surveys were collated in one word document and then analysed by one Teaching Fellow.

### **3. Summary and Key Themes of the 2022 Mentor Survey Responses**

#### **3.1 How would you rate your overall experience of Phase 1 as a mentor?**

Seven out of the ten respondents reported that their overall experience of being a mentor for phase 1 was good or excellent (70%). Two respondents felt the experience was average (20%) and one regarded it as below average (10%).



**Figure 1 - Rating of Overall Experience as a Mentor in Phase 1 of the Masters Programme.**

### **3.2. What were your earlier expectations about working in Phase 1 CHARM-EU Master's in Global Challenges for Sustainability as a mentor?**

A recurrent theme that emerged from the responses of these mentors regarding earlier expectations was the assumption there would be a greater degree of support from the programme organisers. Respondents reported an expectation for more collaboration or guidance from CHARM-EU with one comment stating “I expected a lot more collaboration and close contact with the mentoring team, including regular touch point/meetings and check-ins to discuss general themes and trends, student concerns, etc.” Another comment indicated a prior expectation for a greater level of information and guidance on how to use the systems within the programme and instructions on how to effectively mentor the students. One mentor commented “I was expecting to answer mentees questions on a regular basis about methodology, work organization, career map, goal setting and so on”.

### **3.3. How far do you think your earlier expectations about working in Phase 1 are fulfilled now?**

Overall, the mentors reported that by the end of their role with the students their initial expectations were met. Some comments indicated that this was due to the group of mentors learning together and supporting one another. Some mentors felt that their expectations of the mentor role were only met through experiencing it themselves and not due to guidance or instruction from CHARM organisers, which may have been beneficial - “I have reached out to the organizers when needed, and had a very good response each time, but a closer collaboration would catch many more details and give clarity to mentors about upcoming items.”

### **3.4. How would you rate the Master’s Programme based on your involvement as a mentor?**

#### **A) Structure**

Seven out of the ten respondents rated the structure of the masters programme as good or excellent (70%). One respondent could not decide and the remaining two average or below (20%).

#### **B) Format**

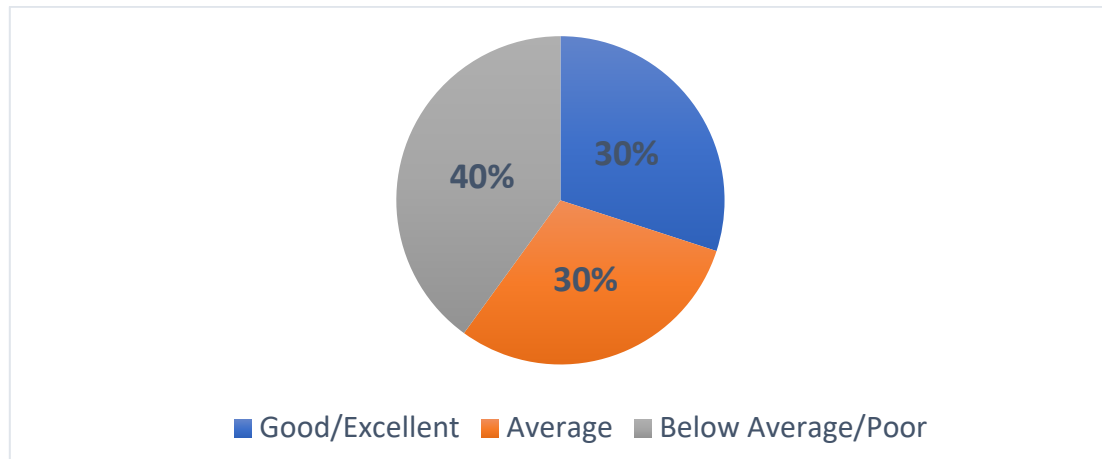
Six out of the 10 respondents felt the format of the programme was good or excellent (60%). The remaining four mentors reported the format was average or below (40%).

#### **C) Organisation**

Organisation was not rated highly by most phase 1 mentors. Four out of ten respondents reported it to be below average (40%), three felt it was average (30%) and the remaining three respondents rated organization as good or excellent (30%).

#### **D) Content**

The content of the Masters programme was well regarded by the mentors overall. Five out of ten respondents viewed the content as excellent (50%), a further two reporting it to be good (20%) and the remaining three indicating they felt it was average or below (30%).



**Figure 2 - Rating of Organisation in the Masters Programme by Mentors.**

### **3.5. Please elaborate on your rating:**

#### **3.5.1. What were the main positives of Phase 1 based on your mentee's feedback?**

Positives highlighted by the mentors included the observation that students “have learned how to organize themselves and have interacted with a large number of students from different places”. Some mentors also reported the positive aspect of their mentees developing in order to identify issues and “making positive steps to resolve them”. The collaboration between mentors to learn and adapt to the mentoring process in CHARM-EU (and understand the programme's components) was identified as a main positive by some mentors, alongside the content of the Masters – “Great content, good teamwork”.

#### **3.5.2. Have you recognized any difficulties or malfunctioning of the programme in Phase 1?**

Areas for improvement identified by the responding mentors included organisation, communication and provision of instructions/guidance. From the comments received, there was a reported lack of understanding relating to the exact role of the mentor, both by the mentors themselves and their mentees. This may have been a contributing factor to the initial stages of the programme being “a little bit chaotic” for mentors and students alike. One mentor commented that “the main

difficulties were related to platforms (online learning and assessment platforms such as Scorion) and university support”.

### **3.6. How would you develop/change the Masters Programme in the future?**

Improving communication, engagement and collaboration were emerging themes in relation to further developing the Masters programme. One respondent suggested the need for organisers to “work more closely with the mentors” and “engage in weekly or at least monthly sessions that have defined outcomes that mentors can feed back to their mentees”.

Varying feedback provided by mentors indicated the need for clearer definition and communication surrounding the role of the mentor. For examples, it was indicated that many students understood the role of their mentor to be related to helping with administrative issues specific to the programme. One comment highlighted the need to “clearly delineate the line between mentoring and program support”.

One mentor commented that “it would be great if the training or advice to the mentors includes practical examples of how to keep track and also information about the work that our students have to do to better understand if they are progressing properly”.

## ***FEEDBACK ON THE MENTORING NETWORK***

### **3.7. How would you rate the ORGANISATION of the mentoring network in Phase 1?**

#### **A) Information Provided**

Four out of ten respondents reported the information provided within the mentoring network to be good or excellent (40%). Four indicated the information provided was average (40%) and the remaining two reported it was below average (20%).

#### **B) Communication/Engagement**

Half of the ten respondents reported the communication/engagement to be good or excellent (50%). Two mentors indicated the communication was average (20%) with the remaining three rated it as below average or poor (30%).

### **C) Facilitation support from the CHARM-EU network**

Two mentors reported that the facilitation support they received from the CHARM-EU network was excellent (20%) with a further 3 indicating they found the support to be good (30%). The remaining five mentors reported the facilitation to be average or below (50%).

### **3.8. Have you recognized any difficulties or malfunctioning dimensions of your mentoring work in Phase 1? Did you feel that CHARM-EU colleagues could reflect on these difficulties? Please elaborate.**

The recurring theme of communication issues and the need for the provision of clearer information and guidance was highlighted again relating to any difficulties recognized for mentoring in Phase 1. It was indicated that mentors “would have appreciated to have more communication among us (the mentors) to share difficulties, doubts, goals achieved, etc.” Further to this, it was indicated that mentors may not have a comprehensive enough understanding of the expectations of their mentees as students within then Masters programme. One mentor gave their opinion that “...in general mentors feel that we do not know very well what is expected of our students and it is sometimes difficult to do a good tutoring of the students”.

There were also logistical issues raised in relation to scheduling meetings with mentees. One mentor commented “The students have a very complex agenda and almost require you to hold meetings at odd hours. It should be planned that there is time for mentoring, not that (we) mentors have to adapt to such an agenda”.

### **3.9. What is your main takeaway from the Phase 1 as a mentor?**

Many of the mentors reported very positive main takeaways from their role as Phase 1 mentors. These comments included the following examples, “the satisfaction of my mentee. I have seen her evolution and if she evolves, I evolve” and “I’ve been (made) aware of different learning approaches, and I like them!”. An apparent theme that emerged from the mentors’ responses is the positives related to collaboration and teamwork with other mentors as well as the connection built with mentees throughout the process. Although most of the main takeaways reported by the mentors reflected highly on the level of support given by the mentoring network to the mentees, it was indicated that there wasn’t the same support for mentors. One mentor commented “support for the mentors is decent but generally needs to be reactive to issues that could have been anticipated and avoided with better communication across the team and network”.

### **3.10. How would you develop/change the mentoring work in CHARM-EU in the future?**

One respondent commented “I don’t think mentor is necessary”. However, other feedback from several mentors related to the need to develop the guidance communicated to the mentors and their mentees. For example, one mentor proposed “having a very specific guide/protocol for the tasks to be carried out and examples of the advice forms to fulfill”. The reoccurring theme of clarifying the role of a mentor to both the mentors themselves and to the students was also highlighted – “Specify from the very beginning the role of the mentor”. The need for clear guidance and to include practical examples, was once again highlighted in the responses to this question. Additionally, one mentor commented, “I am not sure that the role of mentor is compatible with the fact that we are taking part into their assessment in the form of the mentor advice form. It leads to a relation that is similar to teacher/student instead of mentee/mentor”.

## **4. Overall Recommendations**

- A clear definition and description of the role of the mentor should be established.

This then needs to be clearly communicated to all students and mentors. This could

be done as a written guide/protocol and/or as a group information session involving both the mentors and their mentees as a collective. This would ensure that all mentors and mentees are given the exact same information which would encourage the formation of the same expectations.

- Specific dates could be incorporated into the academic timetable as a clear indicator of when mentor-mentee meetings should take place. This would allow for planning in advance and less inconvenience for mentors to fit in with students' timetable.

## 17. APPENDIX G: CHARM-EU ALUMNI EXIT SURVEY QUESTIONS

### Introduction

Welcome to the CHARM-EU Alumni Exit Survey. As alumni of the first ever European Alliance Master's programme, you are part of a unique cohort of students with insights that are invaluable to CHARM-EU and to the European Commission.

This survey aims to gather information about your post-graduation journey, particularly focusing on your current employment or study status.

For CHARM-EU, exploring ways to improve our program, giving you a voice on your experiences, offering an opportunity for self-reflection, and assessing the Master's's impact on career outcomes are all essential aspects of this survey.

There are 5 sections to this survey:

- Master's category
- Current employment or study status
- Programme satisfaction
- Demographic information
- Future contact

The survey will take approximately 15 minutes of your time. You can complete it in multiple sessions if needed.

There are some questions that ask for personal information related to your current situation. Answering any question is voluntary and if you do not wish to contribute to that question, you can choose to skip the question.

Accessibility

Information.

The survey is available through this online platform, and you can request a WORD format too. If you request further assistance, please, contact [gallags6@tcd.ie](mailto:gallags6@tcd.ie).

By continuing with this survey:

I AGREE to participate and give my PERMISSION for the results to be used for internal reporting purposes in CHARM-EU, and to help direct and inform current and prospective students about career possibilities.

I ACKNOWLEDGE that I have read the information about the nature and scope of this survey.

Find out more information about CHARM-EU Privacy and Data Protection on this link.



Co-funded by  
the European Union

For more information, please contact Silvia Gallagher Quality Officer CHARM-EU ([gallags6@tcd.ie](mailto:gallags6@tcd.ie))

**This survey has been approved by the CHARM-EU Academic Council for piloting on the 19/10/2023.**

I would like to continue with this survey./

Yes

No

## Section 1: Master's category

In this section, we will ask you some short questions on your cohort and category in the Master's.

- 1. Indicate the year you graduated from the CHARM-EU Master's in Global Challenges for Sustainability**
  - Drop down with 2022, 2024, 2026, 2028
  
- 2. In the flexible phase of the program, you chose the following track:**
  - Water
  - Life and Health
  - Food
  
- 3. In which university did you start the Master's?**
  - Trinity College Dublin
  - University of Barcelona
  - Eötvös Loránd University
  - Utrecht University
  - University of Montpellier
  
- 4. In which universities did you take part in a phase mobility? (i.e. where you moved between phases) Select multiple universities if relevant.**
  - Trinity College Dublin
  - University of Barcelona
  - Eötvös Loránd University
  - Utrecht University
  - University of Montpellier
  
- 5. In which universities did you take part in a blended (BIP) mobility? (i.e. where you moved during the phases) Select multiple universities if relevant.**
  - Trinity College Dublin
  - University of Barcelona
  - Eötvös Loránd University
  - Utrecht University
  - University of Montpellier
  - None

## Section 2: Current employment or study status

In this section we will ask you some questions about your current employment and study status.

### 6. How would you describe your situation in October 2023?

Please indicate the main activity that you are engaged in in the first column (one option only). This is the activity that you spend the most time doing.

Please indicate all other activities that you are engaged in in the second column (tick all that apply).

	Main Activity (Select one only)	All Activities (tick all that apply)
Working full-time	<input type="checkbox"/>	<input type="checkbox"/>
Working part-time	<input type="checkbox"/>	<input type="checkbox"/>
Due to start a job within the next 3 months	<input type="checkbox"/>	<input type="checkbox"/>
Engaged in full-time further study or training	<input type="checkbox"/>	<input type="checkbox"/>
Engaged in part-time further study or training	<input type="checkbox"/>	<input type="checkbox"/>
Unemployed and looking for work	<input type="checkbox"/>	<input type="checkbox"/>
Other Activity (e.g. engaged in home duties, retired from employment, not able to work due to sickness or disability, travelling, volunteering etc.)	<input type="checkbox"/>	<input type="checkbox"/>

Respondents who indicate they are “working full-time”, “working part-time” or “due to start a job in the coming months” as their main activity in Q5 are directed to **section 2.1**.

Respondents who indicate they are “engaged in full-time further study, training or research”, “engaged in part-time further study, training or research” as their main activity in Q.1 are directed to **section 2.2**.

Respondents who indicate they are “unemployed and looking for work” as their main activity in Q.1 are directed to **section 2.3**.

Respondents who indicate they are “other activity” as their main activity in Q.1 are directed to **section 2.3**.

## Section 2.1: Employment status

**7. What is your job title?**

**8. What is your occupation? Please select an option from the list below (ISCO-08).**

- Managers
- Professionals
- Technicians and associate professionals
- Clerical support workers
- Service and sales workers
- Skilled agricultural, forestry, and fishery workers
- Craft and related trades workers
- Plant and machine operators and assemblers
- Elementary occupations
- Armed forces occupations

**9. What is the name of the company/organisation that you are working for?**

**10. Please name the country you are working for this company/organisation?**

- Open ended

**11. Is your working location?**

- Your country of origin
- A country that you completed phases during the Master's (i.e. Ireland, the Netherlands, Hungary, France, or Spain)
- A country of a CHARM-EU partner university where you did not stay during your Master's (i.e. Ireland, the Netherlands, Hungary, France, or Spain)
- A country where you were located before CHARM-EU (if different from your country of origin)
- A country where you have not lived before

**12. Did mobility during the Master's influence your current place of residence?**

- Yes (Please describe how it influenced your current place of residence)
- No

**13. Did mobility during the Master's influence your choice of job? (e.g. the content of a Master's Phase or a Capstone project)**

- Yes (Please describe how mobility influenced your choice of job)
- No

**14. Did your mobility experience during the Master's help you to find a job? (e.g. you are now working with a Capstone stakeholder, you used career services in your Phase institution)**

- Yes (Please describe how your mobility experience helped you find a job)
- No

**15. What does the company/organisation that you are working for mainly do? Please select an option from the list below.**

- Agriculture, forestry and fishing
- Industry e.g. food products, beverages, textiles, clothing, wood, paper, chemicals, pharmaceuticals, rubber and plastic, metals, computer products, electrical equipment, machinery, vehicles, furniture, repair and installation of machinery, electricity/gas supply, water, waste
- Construction e.g. construction of buildings, civil engineering, specialised construction
- Wholesale and retail trade
- Transportation and storage e.g. land, water, air transport, transport via pipelines, warehousing, postal and courier
- Accommodation and food services
- Information and communication e.g. publishing, motion picture, video and TV programme production, sound recording and music publishing, programming and broadcasting, telecommunications, computer programming, information services
- Financial, insurance and real estate e.g. financial services, insurance and pensions, real estate, legal and accounting, head offices, management consultancy
- Professional, scientific and technical e.g. architectural/engineering, scientific R&D, advertising and market research, veterinary, renting/leasing, employment, travel agency/tour operator, security and investigation, buildings services
- Administrative and support service
- Public administration and defence
- Education
- Human health and social work
- Other e.g. residential care, social work, creative arts and entertainment, libraries, archives and museums, gambling and betting, sports and recreation, repair of goods, domestic personnel
- I don't know

**16. Are you:**

An employee?

Self-employed/freelance/running or starting up own business?

On a graduate internship/placement?

[Respondents who indicate they are “Self-employed/freelance/running or starting up own business” skip to Q.18.]

**17. What is the nature of your contract?**

- Permanent or open-ended contract (i.e. continues indefinitely with no specified end date)
- Fixed term contract lasting 12 months or longer (i.e. with a specified start and end date)
- Fixed term contract lasting less than 12 months (i.e. with a specified start and end date)
- Flexible contract (i.e. offers a variable working schedule, allowing employees to work part-time or on a flexible hours basis)

- No contract (i.e. employment agreement where no formal written contract exists, and terms may be based on verbal agreements or implied terms)
- Temporary (including substitute teaching), casual or employed through an agency (i.e. employment is for a limited duration, often used to cover temporary work needs or for on-call or irregular work)
- Unpaid (i.e. volunteering or engaged in unpaid internships without a formal employment contract)

**18. What is your annual salary to the nearest Euro, before tax? This figure should be the salary you receive per year before tax.**

Salary Band

up to €14,999

€15,000- 29,999-

€30,000-44,999

€45,000 - €59,999

€60,000 - €74,999

€75,000 +

I am in an unpaid position

I'd rather not say

**19. Please rate the relevance of the Master's to your job on a scale of 1-5 where 1 is very irrelevant and 5 is very relevant:**

1 (very irrelevant)

2
3
4
5 (very relevant)
I don't know

**20. In the following table we list the Programme Learning Objective Domains used in the Master's. Please indicate the level (0-5) you are required in your current work and your perceived level of competency (0-5).**

- Sustainability
- Transdisciplinarity
- Solving challenges
- Collaboration
- Communication
- Scholarship
- Personal and professional development
- Digital skills

**21. Did you need the Master's you recently obtained to get the job (or start your business if self-employed)?**

- Yes: the qualification was a formal requirement
- Yes: while the qualification was not a formal requirement, it gave me an advantage
- No: the qualification was not required
- No: I was already in the job when I received the qualification
- I don't know

**22. How did you first find out about the job?**

- Careers service from a CHARM-EU institution
- Another CHARM-EU institution source (e.g. lecturer/website/former graduate/academic department)
- Media (e.g. newspaper/magazine advertisement)
- Personal contacts, including family and friends
- Social media/professional networking sites
- I already worked there (including on an internship/placement)
- Employer website
- Recruitment site (e.g. job search websites, including Public Appointments Service)
- Speculative application (i.e. application to a company without a job being advertised)
- I worked with this organisation during the Capstone
- I worked with this organisation during phase 1 or 2 of the Master's
- Other

## Section 2.2: Study, training or research status

### 23. What is the location of the institution you are studying, training or carrying out research in?

- Your country of origin
- A country that you completed phases during the Master's (i.e. Ireland, the Netherlands, Hungary, France, or Spain)
- A country of a CHARM-EU partner university where you did not stay during your Master's (i.e. Ireland, the Netherlands, Hungary, France, or Spain)
- A country where you were located before CHARM-EU (if different from your country of origin)
- A country where you have not lived before

### 24. Did mobility during the Master's influence your current place of residence?

Yes (Please describe how it influenced your current place of residence)

No

### 25. Did mobility during the Master's influence your choice of your further study, training or research? (e.g. the content of a Master's Phase or a Capstone project)

Yes (Please describe how mobility influenced your choice of further study, training or research)

No

### 26. Did your mobility experience during the Master's helped you in any way to find further study, training or research? (e.g. you are now working with a Capstone stakeholder)

Yes (Please describe how your mobility experience helped you find further study, training or research)

No

### 27. What is the country of the institution you are studying in?

### 28. What is the name of the institution where your study, training or research is being pursued? Please enter the name of the institution in the box below.

### 29. What is the title of the study, training or research you are pursuing (e.g. MA in History, PhD in Sustainability). Please enter the course title in the box below.

### 30. What is the area of study of your study, training or research ? Please select an option from the list below.

[Drop down box to provide list of ISCED fields of study or Fields of Science and Technology (FoS 2007) classification - the second one is broader, only 6 categories : 1. Natural sciences 2. Engineering and technology 3. Medical and health sciences 4. Agricultural sciences 5. Social sciences 6. Humanities

**31. What award level are you pursuing? Please select an option from the list below.**

- Vocational training
- BA
- MA
- PhD

**32. Are you studying**

On campus

Online / by distance education

Blended learning i.e. a mixture of on campus and online/distance education

**33. What is the main reason you decided to undertake further study, training or research?**

- Because it is a requirement for finding and progressing in future employment
- To change or improve my career options
- Ongoing professional development
- To develop a broader or more specialist range of skills or knowledge
- Because I was interested in the content of the course
- Because I had enjoyed my first course and wanted to continue studying
- I had been unable to find a suitable job
- Other reason
- I don't know

**34. In the following table we list the Programme Learning Objective Domains used in the Master's. Please indicate the level (0-5) you are required in your current study, training or research, and your perceived level of competency (0-5).**

- Sustainability
- Transdisciplinarity
- Solving challenges
- Collaboration
- Communication
- Scholarship
- Personal and professional development
- Digital skills

### Section 2.3: Unemployed/Looking for work and Other Activity

#### 35. Have you held a job since you finished your course?

- Yes, but I was let go/made redundant/the contract ended
- Yes, but I resigned from my job to seek employment elsewhere
- No, I have been looking for a job since graduation
- No, I was travelling but I'm now looking for a job
- No, I experienced temporary illness but I'm now looking for a job
- No, I was engaged in home duties (e.g. childcare) but I'm now looking for a job
- Other (please specify)

#### 36. Are you:

- Engaged in home duties
- Taking time out to travel
- Volunteering
- Retired
- Caring for a family member/other
- Not able to work due to illness or disability
- Unemployed and not seeking employment
- I'd prefer not to say
- Other (please specify)

#### 37. Are there any particular barriers you feel are preventing you from engaging in employment or further study? Please enter these in the box below

#### 38. In the following table we list the Programme Learning Objective Domains used in the Master's. Please indicate your perceived level of competency (0-5).

- Sustainability
- Transdisciplinarity
- Solving challenges
- Collaboration
- Communication
- Scholarship
- Personal and professional development
- Digital skills

#### 39. Where are you currently located?

- Your country of origin
- A country that you completed phases during the Master's (i.e. Ireland, the Netherlands, Hungary, France, or Spain)

- A country of a CHARM-EU partner university where you did not stay during your Master's (i.e. Ireland, the Netherlands, Hungary, France, or Spain)
- A country where you were located before CHARM-EU (if different from your country of origin)
- A country where you have not lived before

**40. What is the country you are currently staying in? Please select an option from the list below.**

select from list

**41. Did mobility during the Master's influence your current place of residence?**

- Yes (Please describe how it influenced your current place of residence)
- No

### Section 3: Programme Satisfaction

In this section we will ask you to reflect on the Master's you have completed.

**42. Reflecting on your experience of the Master's, how likely or unlikely is it that you would study the same course again?**

1 (very likely)	<input type="checkbox"/>
2 (likely)	<input type="checkbox"/>
3 (neither likely nor unlikely)	<input type="checkbox"/>
4 (unlikely)	<input type="checkbox"/>
5 (very unlikely)	<input type="checkbox"/>

**43. Looking back, what could have been included in the Master's to enhance your employability?**

**44. Looking back, what could have been included in your course to prepare you better for further study?**

**45. Looking back, what were the aspects of your course which most enhanced your employability?**

**46. Looking back, what were the aspects of your course which best prepared you for further study?**

**47. Considering our Master's is offered by a European Universities Alliance, do you see it as a benefit or drawback? Why**

**48. During your discussions with employers, or universities you are studying in, what were their perceptions of a degree offered by a European Universities Alliance?**

**49. Do you know how the Alumni organization works at CHARM?**

- Yes
- No

Those who answered yes:

50. Have you already registered with the Alumni organization of CHARM?

- Yes
- No

## Section 4: Demographic information

**51. To which gender identity do you identify the most? Select one option.**

- Female
- Male
- Non Binary / Third Gender
- Prefer not to say
- Prefer to self describe

**52. What year were you born?**

**53. Do you have children under the age of 18?**

- Yes
- No

**54. What is your father's highest level of education?**

- Up to elementary / primary school
- Vocational training, vocational school (without graduation)
- High school with graduation (gymnasium, vocational high school)
- College, university
- I do not know

**55. What is your mother's highest level of education?**

- Up to elementary / primary school
- Vocational training, vocational school (without graduation)
- High school with graduation (gymnasium, vocational high school)
- College, university
- I do not know

## Section 5: Future Contact

We would like to contact you again in a few years' time to see how you are getting on, as part of a follow-up survey.

### 56. Would you be happy for us to contact you in a few years' time?

- Yes:
- No:

[Respondents who indicate "yes" are directed to the following questions]

If yes please provide the following contact details:

Personal email address:

Please note that CHARM will store these contact details on their system only so that you can be contacted in a few years' time and used solely for the purposes of a follow-up survey. Your e-mail address will be kept separate from your survey responses and will be treated confidentially.

Thank you message

**18. APPENDIX H: DESCRIPTION OF OTHER EUROPEAN MASTER’S COURSES WITH STUDENT PERSONALIZATION.**

Institution	Course	Thematic specializations or choices
University of Helsinki <sup>31</sup>	Master's Programme In Environmental Change And Global Sustainability	Aquatic Sciences Environmental soil science Changing Arctic and northern environments Agriculture and environment Urban studies Environmental policy and economics Consumer citizens and sustainability transition Forests, global changes and sustainability Sustainable management of marine environments Environment and development Food and sustainability Global land use Urban studies, basic Indigenous Studies Climate University MOOC Science and Technology Studies

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<sup>31</sup> <https://www.helsinki.fi/en/degree-programmes/environmental-change-and-global-sustainability-masters-programme>

Rome Business School <sup>32</sup>	International Master's In Sustainability And Circular Bioeconomy Management	Integrated Sustainability Management Circular Bioeconomy Physical Dimensions of Sustainability Management and Environmental Law Climate Change and Energy Transition Scenarios The Economics of Biomass Energy Roadmap for a jointly funded AU-EU Partnership on Climate Change and Sustainable Energy (CCSE) Climate Change, Innovation, and Energy Transition Towards Sustainable Bio-Based Bioeconomy Innovation and Sustainability in Energy Transition Sustainability and Energy Transition in Africa and Developing Countries
Leiden University <sup>33</sup>	Governance Of Sustainability (Master's)	Materials and Circular Economy Biodiversity and Ecosystems Climate change and Energy Transition Water and Toxicity
EDHEC Business School <sup>34</sup>	Master's In Climate Change & Sustainable Finance	Carbon allowances and trading Innovation in cleantech and climate-change solutions Private equity and project finance for sustainability

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<sup>32</sup> <https://romebusinessschool.com/specialized-master-in-sustainability-management-circular-bio-economy/>

<sup>33</sup> <https://www.universiteitleiden.nl/en/education/study-programmes/master/governance-of-sustainability>

<sup>34</sup> <https://climateimpact.edhec.edu/Master's-climate-change-sustainable-finance>

Bocconi	Master's In Transformative Sustainability	Diversity and Global Policy Technologies and Systems for Sustainable Mobility Electives on key enabling technologies for sustainability transition, theoretical methods and practical tools for sustainability management and entrepreneurship (to be chosen among a set of Bocconi and Politecnico di Milano courses)
Leuven <sup>35</sup>	Master's Of Science In Sustainable Development	Space and society (mobility) Ecology
LUT University <sup>36</sup>	Master's Programme in Circular Economy	Energy Technology (Distance Learning) Innovation management Performance Management Entrepreneurship Entrepreneurship Environmental Science Basics of Finnish Language and Culture Professional Finnish Elective studies Air Pollution Control Circular Economy for Materials Processing Current Issues in Enabling Technologies for Circular Econom

35

[https://www.unibocconi.eu/wps/wcm/connect/bocconi/sitopubblico\\_en/navigation+tree/home/programs/master+of+science/transformative+sustainability](https://www.unibocconi.eu/wps/wcm/connect/bocconi/sitopubblico_en/navigation+tree/home/programs/master+of+science/transformative+sustainability)

36

<https://forms.lut.fi/opinto-opas/Tutkinto.aspx?id=otm-4b60a4c5-4b20-4e08-aff9-b835334b4db6&period=lut-curriculum-period-2022-2023&lang=en-US>

## 19. APPENDIX I: JOINT MASTER'S PROGRAMMES RELATED TO ENERGY

Course title	Delivered by	Key themes
Master's in Renewable Energy	<p>IST: Instituto Superior Técnico, Lisbon,</p> <p>KTH: Royal Institute of Technology,</p> <p>École Polytechnique, Paris, France</p> <p>UPC: Universitat Politècnica de Catalunya · BarcelonaTech,</p>	<p>Advanced technology concepts and methods</p> <p>Production and utilization of sustainable energy</p> <p>Wind energy</p> <p>Solar photovoltaic energy</p> <p>Solar thermal electricity</p> <p>Ocean energies</p> <p>Energy economy and markets</p> <p>Energy and the environment</p> <p>Business and Management training by ESADE</p> <p>Summer School, including co-creation workshop, Innovation Seminar, and ESADE module 3</p> <p>Hydropower</p> <p>Biomass and biofuels</p> <p>Integration of renewable systems with the energy system</p>
European Master's in Renewable Energy <sup>37</sup> (90 ECTS + internship)	<p>MINES-ParisTech,</p> <p>Zaragoza University</p> <p>Oldenburg University</p> <p>Hanze UAS</p> <p>University of Northumbria,</p> <p>National Technical University of Athens,</p>	<p>Wind Energy</p> <p>Grid Integration</p> <p>Solar Thermal &amp; Associated Renewable Storage</p> <p>Ocean Energy</p> <p>Sustainable Fuel Systems for Mobility</p>

<sup>37</sup> <https://master.eurec.be/>

Course title	Delivered by	Key themes
	University of Perpignan IST Lisbon	The fundamentals of energy concepts and power The fundamentals of heat transfer The fundamentals of fluid mechanics The fundamentals of electricity

Course title	Delivered by	Key themes
Erasmus Mundus Master's in Renewable Energy in the Marine Environment <sup>38</sup> (90 ECTS teaching + 30 ECTS thesis)	University of the Basque Country  University College Cork  Norwegian University of Science and Technology  École Centrale de Nantes	Resource and marine environment  Theoretical foundations: early marine energy conversion  Conversion technologies  Connection and integration into the electricity grid  Engineering, development and management of offshore parks  Environmental, economic and legal aspects of marine renewable energy  Offshore wind  Wave power  Tidal power and sea currents

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<sup>38</sup> <https://www.master-replus.eu/about-replus/>

<p>Erasmus Mundus in Management and Engineering of Environment and Energy<sup>39</sup> (120 ECTS)</p>	<p>Indian Institute of Technology (India)</p> <p>University of Tlemcen (Ageria)</p> <p>Nazarbayev University (Kazakhstan)</p> <p>Universiteti Europian i Tiranës (Albania)</p> <p>Igor Sikorsky Kyiv Polytechnic Institute (Ukraine)</p> <p>Universidad de los Andes (Bogotá – Colombia)</p> <p>Institut Teknologi Bandung (Indonesia)</p> <p>Universitas Indonesia (Indonesia)</p> <p>Université Saint-Joseph de Beyrouth (Lebanon)</p> <p>Polytechnic University of Tirana (Albania)</p> <p>Universidad Autonoma de Ciudad Juarez (Mexico)</p> <p>Ecole Nationale Supérieure des Travaux Publics (Cameroun)</p> <p>Stellenbosch University (South Africa)</p> <p>Unternehmerverband Südtirol Association (Italy)</p> <p>Eurac Research (Italy)</p> <p>Mission Hermon (Ivory Coast)</p>	<p>Three study tracks are proposed to train the future project managers in renewable energy integration and environment (study track 1), in environment and resource recovery towards the circular economy (study track 2) and in smart cities and industry 4.0 (study track 3).</p> <p>These study tracks provide multiple degrees, after successful completion of the study programme:</p> <p>Study track 1 offers the Master's in Mechanical Engineering Modelling from BME and the Master's in "Process and Bioprocess Engineering" track "Project Management for Environmental and Energy Engineering" (Master's PBPE /PM3E) from IMT Atlantique</p> <p>Study track 2 offers the Master's with major in Resource Recovery, specialisation in Energy Technology from HB and the Master's in "Process and Bioprocess Engineering" track "Project Management for Environmental and Energy Engineering" (Master's PBPE /PM3E) from IMT Atlantique</p> <p>Study track 3 offers the Joint Master's in Energy Engineering from Unibz and Unitn and the Master's in "Process and Bioprocess Engineering" track "Project Management for Environmental and Energy Engineering" (Master's PBPE /PM3E) from IMT Atlantique</p>
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## 20. APPENDIX J: FRENCH INTERNSHIP REGULATIONS

### Definition

The internship is a temporary placement in the professional environment of the student. It allows him to acquire the professional skills related to his training. The tasks assigned to the traineeship must be in accordance with the educational project of the educational institution. Internships and periods of training in a professional environment are integrated into a training course whose pedagogical volume of teaching is set at a minimum of 200 hours per year of teaching. This pedagogical teaching volume of 200 hours must include a minimum of 50 hours teaching provided in the presence of the students.

### Prohibited conditions

A student internship cannot be offered for the following missions:

- Replacing an employee in the event of absence, suspension of employment contract or dismissal
- Perform a regular task corresponding to a permanent work position (the trainee does not have a production obligation as an employee)
- Dealing with a temporary increase in activity
- Seasonal employment

### Number of authorized trainees

#### *For a company of less than 20 employees*

Companies with less than 20 employees can accommodate 3 maximum trainees at the same time. Each tutor follows a maximum of 3 trainees during the same period.

#### *For a company of at least 20 employees*

In a host organization of at least 20 employees, the number of trainees whose traineeship agreement is in progress during the same period calendar week may not exceed 15% of the staff.

FYI

in compulsory vocational training (for technological or secondary vocational diplomas) in companies with a maximum of 30 employees, the number of trainees may not exceed 20% of the staff. These companies cannot accommodate more than 5 interns at the same time.

### Compulsory traineeship agreement

The trainee must sign a traineeship agreement. The agreement shall specify the competences to be acquired or developed during the traineeship. The agreement shall also indicate the expected duration of the training period in the training curriculum.

The internship must take place within the framework of an agreement signed between the different parties:

\_\_\_\_\_

<sup>39</sup> <https://www.imt-atlantique.fr/en/study/masters/emimd/me3plus>

- Trainee (or, if he is a minor, his legal representative)
- Host organization (company, public administration, local government, health institution, association or any other organization)
- Educational or training establishment
- Reference teacher in the educational establishment
- Traineeship tutor in the host organization

The following particulars must be included in the agreement:

- Full name of the trainee's curriculum or training and hourly volume per year or semester of instruction
- Activities entrusted to the trainee
- Names of the referring teacher and tutor
- Start and end dates of the traineeship and maximum weekly duration of the trainee's presence
- Conditions for authorization of absence
- Hourly rate of pay (called *gratification*), calculated on the basis of the trainee's actual presence, and the conditions for payment thereof
- Possible benefits to the trainee (e.g. catering, accommodation, reimbursement of expenses)
- Social protection scheme for trainees, in particular in the event of accidents at work

The employer must keep the list of internship agreements concluded up to date and enter the names and forenames of the interns accommodated in a specific part of the single staff register.

The labor inspector may request a copy of the traineeship agreements from the educational establishment or host organization. [If the traineeship takes place abroad, an information sheet setting out the host country's rules on the trainee's rights and duties must be annexed to the traineeship agreement.](#)

### Maximum Duration

The duration of the internship or training carried out in a professional environment shall be **6 months** maximum per host organization and per year of instruction. This period shall be determined taking into account the actual presence of the trainee in the host organization as follows:

- 7 hours of presence, consecutive or not, represents 1 day of presence
- 22 days of attendance is 1 month

**The maximum duration of six months of training is reached once the trainee has completed, during the year of teaching, 924 hours actual presence in the host organization.**

Please note : if the trainee is hired, within 3 months of the end of the traineeship, the duration of the traineeship shall be deducted from the trial period and shall be taken into account for the calculation of entitlements relating to seniority.

### Waiting period

The employer must comply with a waiting period between 2 courses: it is 1/3 of the duration of the previous course.

*Example:*

After a 6-month internship, the employer must wait 2 months before welcoming a new intern to the same position.

This obligation does not apply if the trainee himself interrupts the traineeship.

### Conditions for payment

#### *Continuous Internship*

One [minimum bonus](#) shall be paid to the trainee if the duration of the training is **more than 2 consecutive months** (equivalent to 44 days at 7 hours per day) in the same academic year. Below these duration thresholds, the host organization is not required to pay a bonus.

If the hourly amount of the bonus is less than €4.05, the trainee shall be exempt from social security contributions.

#### *Discontinuous internship*

One [minimum bonus](#) shall be paid **from 309<sup>e</sup> internship time** even if it is performed non-continuously. Below these duration thresholds, the host organization is not required to pay a bonus.

If the hourly amount of the bonus is less than €4.05, the trainee shall be exempt from social security contributions.

### Payment

The bonus is paid at the end of each month and not at the end of the internship. It's due as early as the first<sup>er</sup> day of training.

*Example:*

For a full-time internship (7 hours a day) of 1<sup>er</sup> January to March 31, 2023:

- January: 154 hours worked (22 days x 7 hours)
- February: 140 hours worked (20 days x 7 hours)
- March: 161 hours worked (23 days x 7 hours)

The amount of the total bonus due is **455 hours**, or €1,842.75.

Any temporary internship is subject to readjustment on the basis of the actual number of hours worked.

### Leave and absences

Any internship permanently interrupted is subject to a global regularization according to the number of hours worked. When the internship lasts more than **2 months**, the probationary agreement must provide for leave and leave to be taken.

If the internship lasts for a maximum of 2 months, leave is not mandatory.

Leave pay is optional.

In the event of maternity, paternity or adoption, the trainee shall be granted leave and leave for a period equivalent to that laid down for employees. During these absences, the maintenance of the gratification is not mandatory.

Intern rights and benefits

### Tutoring

The trainee is welcomed and accompanied by a tutor throughout the course. The tutor is responsible for ensuring that the educational objectives set out in the Convention are respected. The tutor responsible for supervising the internship cannot supervise simultaneously over the same calendar week more than 3 interns.

The referent teacher, responsible for the pedagogical follow-up, of the trainee cannot simultaneously follow more than 24 trainees

### Rights identical to those of employees

The trainee shall enjoy the same rights as the employees of the host organization:

- Working time (working time daily and weekly maximum, daily rest, of weekly rest, of public holidays and night work),
- Access to the company restaurant or restaurant titles
- Access to social and cultural activities provided for in Social and Economic Committee (ESC)

### Reimbursement of public transport costs

The trainee shall be entitled to reimbursement of a share of transport costs under the same conditions as employees.

### Protection against harassment

The trainee shall enjoy the same protection as employees in the fight against psychological harassment and the sexual harassment at work.

### Prohibited Tasks

It is prohibited to entrust the trainee with tasks dangerous to his health or safety.

### In case of interruption of the course

If the course is interrupted before its end, it may be validated by the educational institution, in one of the following cases:

- In case of interruption due to sickness, accident, maternity, paternity or adoption
- In the event of non-compliance with the traineeship agreement
- In the event of termination of the traineeship agreement at the initiative of the host organization

A postponement of the end of the internship is also possible, in whole or in part, if all the signatories of the internship agreement agree.

### Sanctions

In the event of non-compliance with the rules governing traineeships, the employer is liable to an administrative fine of up to €2,000 per trainee concerned.

The fine may be up to €4,000 in the case of a new infringement within one year of 1<sup>era</sup> fine.

### At the end of the course

#### *Proof of internship*

At the end of the traineeship, the host organization must provide the trainee with a certificate of traineeship. It shall state the total actual duration of the traineeship and, if necessary, the total amount of the bonus paid.

#### *Rating*

The trainee must provide his/her educational institution with a document assessing the quality of his/her traineeship. This document is not taken into account in the trainee's graduation.

#### *Hiring*

The trainee may be hired by the organization in which he or she completed the traineeship. The trainee then benefits from certain advantages, related to the length of the trial period and seniority.

## 21. APPENDIX K: CHARM-EU EDUCATIONAL PRINCIPLES

### What are the CHARM-EU educational principles?

The CHARM-EU educational principles represent the guiding or organising concepts that underpin the design of a CHARM-EU educational experience. Some of these principles relate to ‘how’ we teach, others to ‘what’ we teach, and some intersect across ‘how’ and ‘what’ we teach. It is important to note that not every CHARM-EU educational experience must integrate every principle, but that they are considered in some way in its design and implementation.

### How do CHARM-EU use their educational principles?

We use educational principles in CHARM-EU to:

- Scaffold and guide our teaching and learning
- Support CHARM-EU teachers to align how they teach with the principles of CHARM-EU
- Make sure our teaching and learning approaches are consistent
- Address current innovations and best practices in teaching

### Our educational principles:

#### Sustainability

CHARM-EU aims to educate its students to create solutions “to secure a sustainable, peaceful, prosperous and equitable life on Earth for everyone now and in the future” (UNESCO, 2017). CHARM-EU research and education supports the United Nations Sustainable Development Goals and key European missions including those in the Horizon Europe Framework Programme and the European Green Deal. Its programmes support the development of UNESCO’s Education for Sustainable Development competencies.

**Example:** The CHARM-EU [Master’s in Global Challenges for Sustainability](#) incorporates sustainability theory and practice across all modules in an integrated transdisciplinary manner.

#### Transversal skills

CHARM-EU educational programs are designed to consistently offer students the opportunity to develop essential transversal skills required to tackle global challenges. Transversal skills are those typically considered as not specifically related to a particular job, task, academic discipline, or area of knowledge that can be used in a wide variety of situations and work settings. These skills include critical and innovative thinking, hybrid communication and collaboration, self-management skills, information and data literacy, analytical thinking, ethical sensitivity, adaptability, entrepreneurship, as well as leadership and project management.

**Example:** Our Master's students are taught and assessed in terms of Programme Learning Outcomes, many of which are directly related to transversal skills such as Communication and Collaboration.

### **Transdisciplinarity**

Global challenges are complex problems that require input from equally complex networks of individuals and groups to identify and define problems. CHARM-EU is a transdisciplinary university alliance in which all stakeholders, students, academic and extra academic actors collaborate equally to tackle global challenges, to create new knowledge, and to transgress boundaries. Transdisciplinarity develops in students the ability to use theoretical frameworks to analyse complex problems, source and appraise data, assess stakeholder needs, build collaboration and teamwork, and create action plans to develop solutions.

**Example:** Our Master's students are from many disciplinary backgrounds and work together on sustainability challenges with external stakeholders throughout the programme. This mix of disciplinary backgrounds, scaffolded with transdisciplinary teaching by teachers and societal stakeholders from multiple disciplines and sectors, fosters educational excellence to address global challenges.

### **Challenge-based learning (CBL)**

The CHARM-EU curriculum is challenge-based and built on trans-institutional research missions focused on solving global and local challenges. Students learn through Challenge-Based Learning (CBL), an educational approach that frames learning around global, real-world, authentic challenges. These challenges are co-developed, investigated and acted upon by students and multidisciplinary stakeholders, including academic and extra-academic (social and traditional enterprise) actors.

**Example:** Many of our modules use CBL to scaffold teaching and learning and employ the [CBL Engage, Investigate, Act](#) cycle to structure student challenges.

### **Research-based learning (RBL)**

The CHARM-EU curriculum is research-based: it is deeply connected to research strengths and practices of its member universities. CHARM-EU facilitates innovation and networks across education and research and, through Research-Based Learning (RBL), students develop the skills to analyse and interpret information, reach conclusions and, wherever relevant, propose solutions.

**Example:** Our Master's students experience and reflect on the full process of a research project at multiple times during their programme (e.g. research question development, methodological training, data gathering, and reporting), culminating in an individual research-based report in their Capstone project.

## **Technology-enhanced**

CHARM-EU explores and integrates new technologies to enhance and innovate education, research and pedagogy. Following a learner-centered approach of education, technology is used not only for instructional purposes, but to promote self-directed and self-paced acquisition of knowledge, skills, and attitudes. This includes the development of digital skills as described in relevant digital competence frameworks. Hybrid and virtual learning environments provide optimal conditions for new ways of learning and teaching, enabling cross-location learning and enhancing flexibility, mobility, and accessibility for students and teachers alike.

**Example:** CHARM-EU uses hybrid classrooms in its Master's, allowing for inter-institutional collaboration across geographical boundaries.

## **Student-centred**

Students are active partners in independent and collaborative learning and can exercise flexibility in time and location with regard to their learning experience. Students can choose and contribute to challenge pathways as a group or individually to fulfil their professional and educational ambitions and support their personal needs. Assessment methods strive to be student-centered, holistic, feedback-focused, mentor-supported, flexible, and outcome-based.

**Example:** The Master's has been developed with student participants to ensure that their needs are met. Throughout the Master's, teaching staff are encouraged to facilitate rather than instruct to ensure that students have an active and central part of the learning process. CHARM-EU has student representation on multiple governance structures, and students are consulted in many strategic and operational decisions.

## **Situated learning**

Students learn through social interaction in authentic, realistic contexts. They participate in networks and/or communities and gradually learn and grow from novices into experts, building their identity throughout their studies. Students learn authentically in close collaboration with global and local partners in a variety of professional environments, for example, research groups and laboratories, enterprise, civic organisations and administrations.

**Example:** During the second phase of the Master's, students embark on a blended mobility to a CHARM-EU country, where they closely collaborate with local stakeholders on challenges that they are facing.

## **Transnational and intercultural learning**

CHARM-EU educational programmes offer a dynamic environment for transnational and intercultural learning. Our diverse teaching staff, representing academic experts and external stakeholders from various cultures and nations, provide students with a unique global perspective. Collaborating with international peers and stakeholders, coupled with mobility, and internationalisation "at home," ensures a dynamic, multilingual, and globally-oriented educational journey.

**Example:** Mobility is embedded within our Master’s programme, whereby CHARM-EU Master’s students move between CHARM-EU partner institutions at least twice during the programme. Mobility can be both physical and virtual, facilitated by the CHARM-EU hybrid classrooms.

## Inclusivity

CHARM-EU educational programmes are designed to respect the diversity of students and are adapted to different students’ learning needs and preferences taking into consideration their backgrounds or abilities. They will enable all students to take part in learning and fulfil their potential. Where possible, any barriers that prevent students from learning are minimised or removed. Designing the CHARM-EU teaching and learning environment by applying universal design educational principles (multiple means of engagement, representation, and expression) is a proactive rather than a retrospective approach which fosters access and participation in education to the greatest extent of students possible.

**Example:** CHARM-EU encourages applications from all candidates who fulfil the Master’s specific requirements, regardless of their backgrounds, lived experiences, and access needs. In order to ensure access and inclusion, Master’s applicants from under-represented communities (in terms of age, gender, family status, disability, sexual orientation, race and ethnic origin, religion, migration status, membership of the Roma and Traveller communities, and socio-economic background in all aspects of higher education, among others), that wish to be considered for 10 additional points can indicate this on their application.

## Additional Resources

- For further details about each of these principles please refer to our CHARM-EU [Pedagogical Guidelines](#).
- [Learn how to integrate CHARM-EU educational principles into your teaching with these practical tips](#)

## Development

The CHARM-EU educational principles are the result of a series of workshops held throughout 2019 (Utrecht, June 2019, Budapest, September 2019, and Dublin, February 2020) in which all CHARM-EU partners articulated an educational philosophy, mission, vision, and values for CHARM-EU educational programmes. They were reviewed and revised in March and April 2020 by the Work Package (WP) 3 (Curriculum Design) team to include feedback from Work Packages 5 (Mobility) and 6

(Inclusiveness).

Subsequently, as part of the CHARM8 project, a systematic review of the educational principles was undertaken by WP3 (Education) in 2023/2024. As part of this review, the educational principles were updated following a thorough evaluation with the CHARM-EU Academic council, students, staff, stakeholders, and educationalists.

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