ENHANCE

European Universities of Technology Alliance

ENHANCERIA

ENHANCERIA – executive summary and dissemination

May 2023
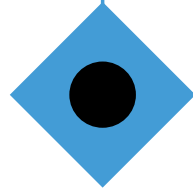
Project consortium

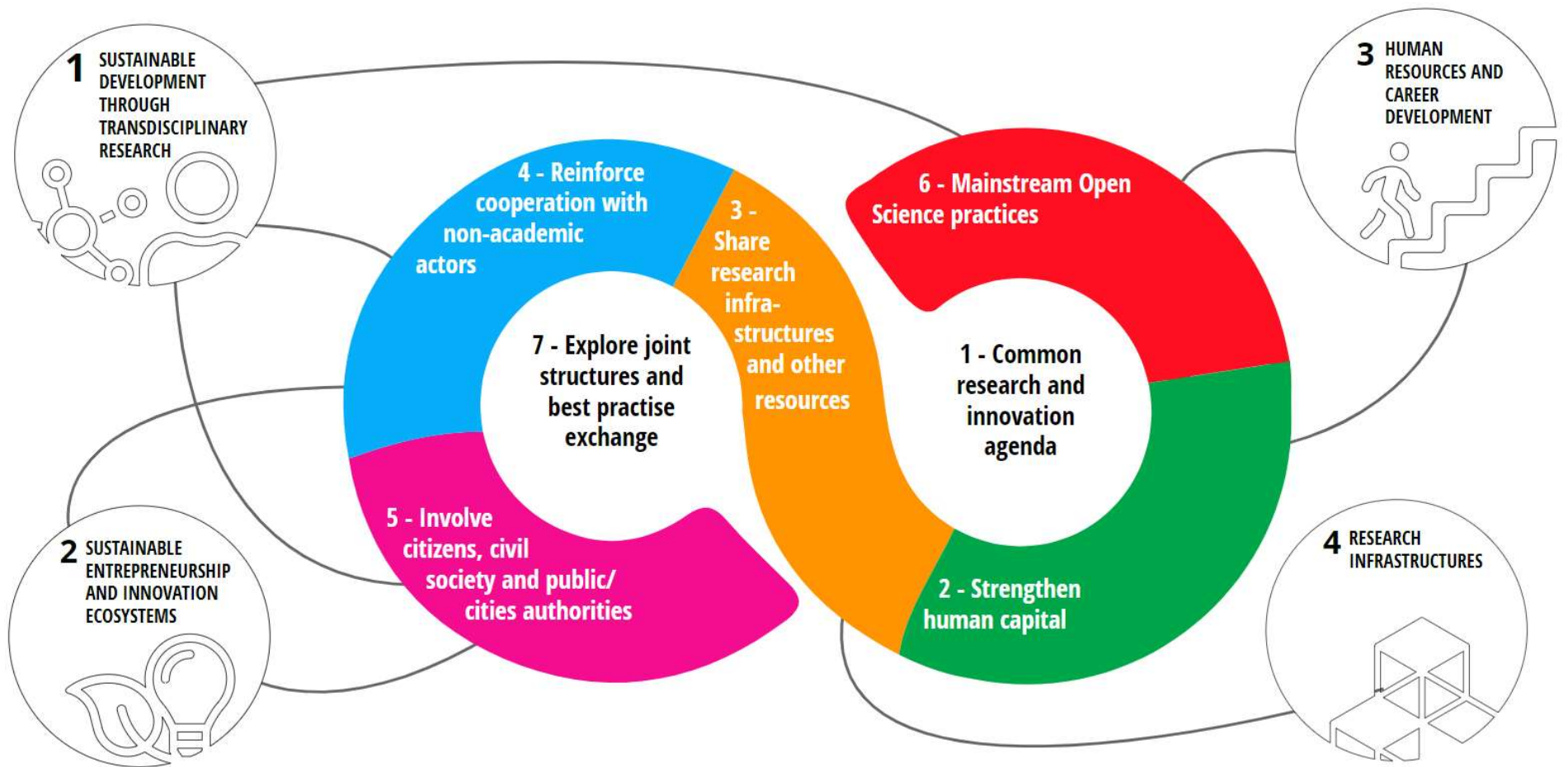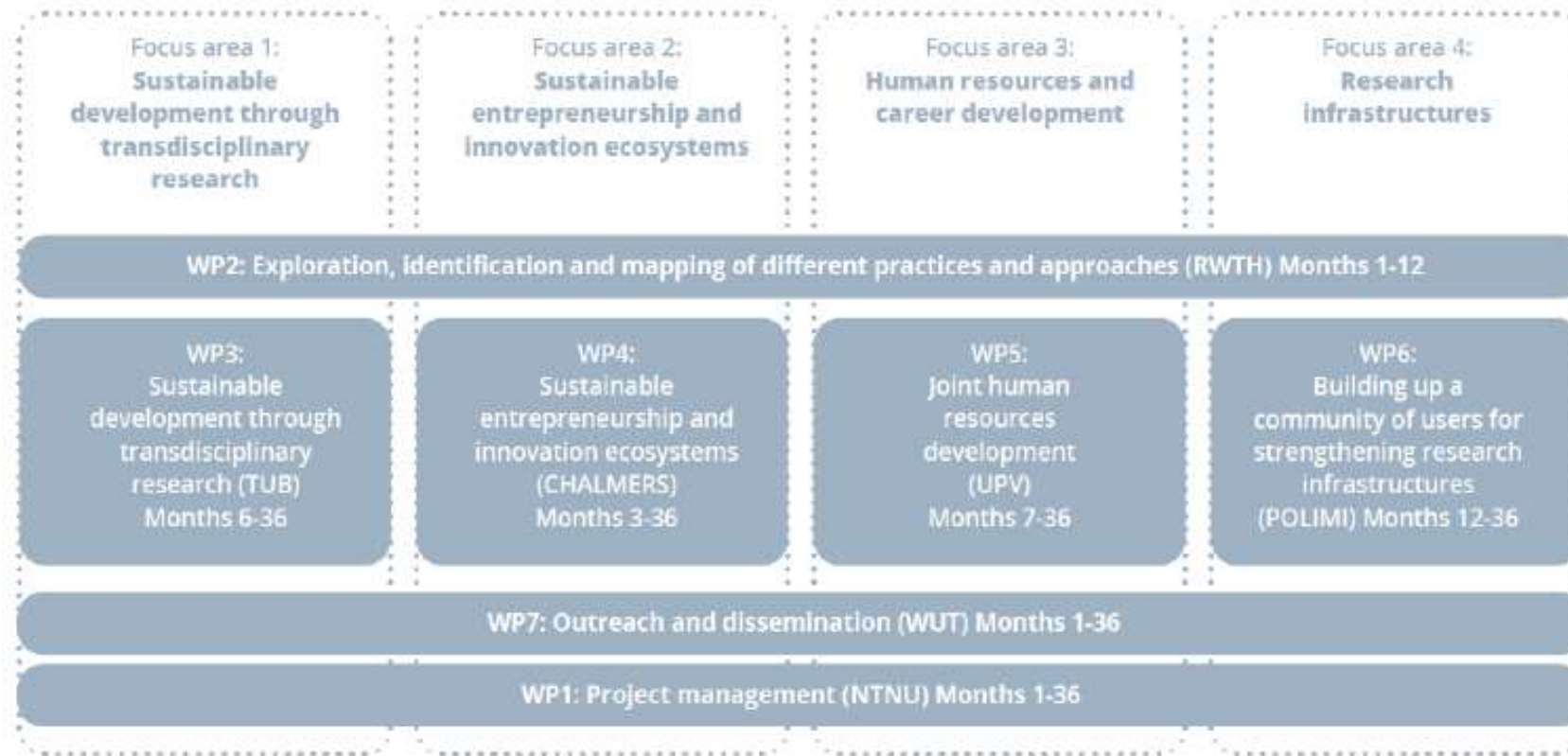| Institutional name	Short name
NORGES TEKNISKNATURVITENSKAPELIGE UNIVERSITET NTNU	NTNU
CHALMERS TEKNISKA HOEGSKOLA AB	CHALMERS
POLITECNICO DI MILANO	POLIMI
RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN	RWTH
TECHNISCHE UNIVERSITAT BERLIN	TUB
UNIVERSITAT POLITÈCNICA DE VALÈNCIA	UPV
POLITECHNIKA WARSZAWSKA	WUT

ENHANCERIA objectives

- The main objective of ENHANCERIA is to **support and strengthen the research and innovation dimensions of ENHANCE,** the European Universities of Technology Alliance, through developing a transformation agenda for the alliance focusing on the role of **universities as drivers and enablers of sustainable development.**

- Sub-objectives of ENHANCERIA:
    1. Explore practices, ways of working and structures across the alliance (SO1)
    2. Establish and widen international networks of employees within research and innovation (SO2)
    3. Develop models for collaboration and recommendations for implementation (SO3)
    4. Disseminate and exchange models and practices (SO4)
    5. Increase the internationalization of research and innovation activities (SO5)
    6. Identify challenges and barriers at institutional, national and European level (SO6)
    7. Develop new initiatives to be funded through internal, national and international sources (SO7)

ENHANCERIA focus areas

1 SUSTAINABLE DEVELOPMENT THROUGH TRANSDISCIPLINARY RESEARCH

2 SUSTAINABLE ENTREPRENEURSHIP AND INNOVATION ECOSYSTEMS

3 HUMAN RESOURCES AND CAREER DEVELOPMENT

4 RESEARCH INFRASTRUCTURES

1 SUSTAINABLE DEVELOPMENT THROUGH TRANSDISCIPLINARY RESEARCH

3 HUMAN RESOURCES AND CAREER DEVELOPMENT

4 - Reinforce cooperation with non-academic actors

3 - Share research infra-structures and other resources

6 - Mainstream Open Science practices

7 - Explore joint structures and best practise exchange

1 - Common research and innovation agenda

5 - Involve citizens, civil society and public/ cities authorities

2 - Strengthen human capital

2 SUSTAINABLE ENTREPRENEURSHIP AND INNOVATION ECOSYSTEMS

4 RESEARCH INFRASTRUCTURES

ENHANCERIA

Work packages

Focus area 1:
Sustainable development through transdisciplinary research

Focus area 2:
Sustainable entrepreneurship and innovation ecosystems

Focus area 3:
Human resources and career development

Focus area 4:
Research infrastructures

WP2: Exploration, identification and mapping of different practices and approaches (RWTH) Months 1-12

WP3:
Sustainable development through transdisciplinary research (TUB)
Months 6-36

WP4:
Sustainable entrepreneurship and innovation ecosystems (CHALMERS)
Months 3-36

WP5:
Joint human resources development (UPV)
Months 7-36

WP6:
Building up a community of users for strengthening research infrastructures (POLIMI) Months 12-36

WP7: Outreach and dissemination (WUT) Months 1-36

WP1: Project management (NTNU) Months 1-36

Submitted deliverables in reporting period (Aug 2021 – Mar 2023)

WP	Del rel #	Del #	Deliverable title	Lead beneficiary
WP1	D1.1	D1	Appointed Project Management Group	NTNU
WP1	D1.2	D2	Digital collaboration tool and project templates	NTNU
WP1	D1.3	D3	Data management plan	NTNU
WP1	D1.4	D4	Quality plan	NTNU
WP1	D1.5	D17	Mid-term policy brief	NTNU
WP2	D2.1	D6	Sample of institutional supporting structures (top-down strategies) including models, methods and formats that support transdisciplinary research, citizen involvement and knowledge exchange between science and society	TUB
WP2	D2.2	D7	Sample of transdisciplinary practices and case studies that support transdisciplinary research, citizen involvement and knowledge exchange between science and society	RWTH
WP2	D2.3	D8	Preliminary systematic sample of SEI initiatives from the institutions	CHALMERS
WP2	D2.4	D9	Report on current state-of-the-practice on HR	UPV
WP2	D2.5	D10	Report on mapping activities and main findings on RI portfolio within the Alliance	UPV
WP2	D2.6	D11	First version of a glossary of the terminology used in the different universities within the focus areas	RWTH
WP2	D2.7	D12	Report on interconnections of the defined focus areas based on the study cases explored	RWTH
WP3	D3.1	D13	Document discussing comparison, analysis including enhanced glossary	TUB
WP4	D4.1	D14	Framework on sustainable impact/sustainable return of investment	TUB
WP4	D4.2	D15	First systematic mapping brought to first workshop	CHALMERS
WP4	D4.3	D16	Research instruments	CHALMERS
WP5	D5.1	D18	Guidance tool for researcher career development (g-RCD)	UPV
WP5	D5.2	D19	Catalogue of RCD activities and strategies	UPV
WP7	D7.1	D5	Dissemination and outreach plan	WUT
WP7	D7.2	D20	Updated dissemination and outreach plan	WUT

WP1 Project management

- Governance
  - Task 1.1 Governance structures
  - Task 1.3 Day-to-day management

- Tools and templates
  - Task 1.2 Project, data and information managmement

- D1.5 Mid-term policy brief

ENHANCERIA kick-off meeting, September 2021

ENHANCERIA

Funded by
the European Union's Horizon 2020
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WP2 Exploration, identification and mapping of different practices and approaches

WP2: Exploration, Identification and Mapping of Different Practices and Approaches
[M1-M12]

WP3:
Sustainable Development trough transdisciplinary research

WP4:
Sustainable entrepreneurship and Innovation ecosystems

WP5:
Joint human resources development

WP6:
Building up a community of users for strengthening research infrastructures

WP2 Exploration, identification and mapping of different practices and approaches

- Task 2.1   Top-down strategies, transdisciplinary research [TUB]
- Task 2.2   Bottom-up activities, transdisciplinary research [RWTH]
- Task 2.3   Sustainable entrepreneurship and innovation ecosystems [Chalmers]
- Task 2.4   Human resources strategies [UPV]
- Task 2.5   Research infrastructures [UPV]
- Task 2.6   Glossary for focus areas [RWTH]
- Task 2.7   Interconnections between focus areas [RWTH]

WP2 Exploration, identification and mapping of different practices and approaches

Task 2.1 Identification of top-down strategies for addressing sustainable development through transdisciplinary research
&
Task 2.2 Identification of bottom-up activities for addressing sustainable development through transdisciplinary research

Mapping:

- Started with Miro-board
- One-pagers
- Survey
- Interviews
- Workshops

Combining D2.1 & D2.2

- Discussions in the workgroup
- Results of interviews

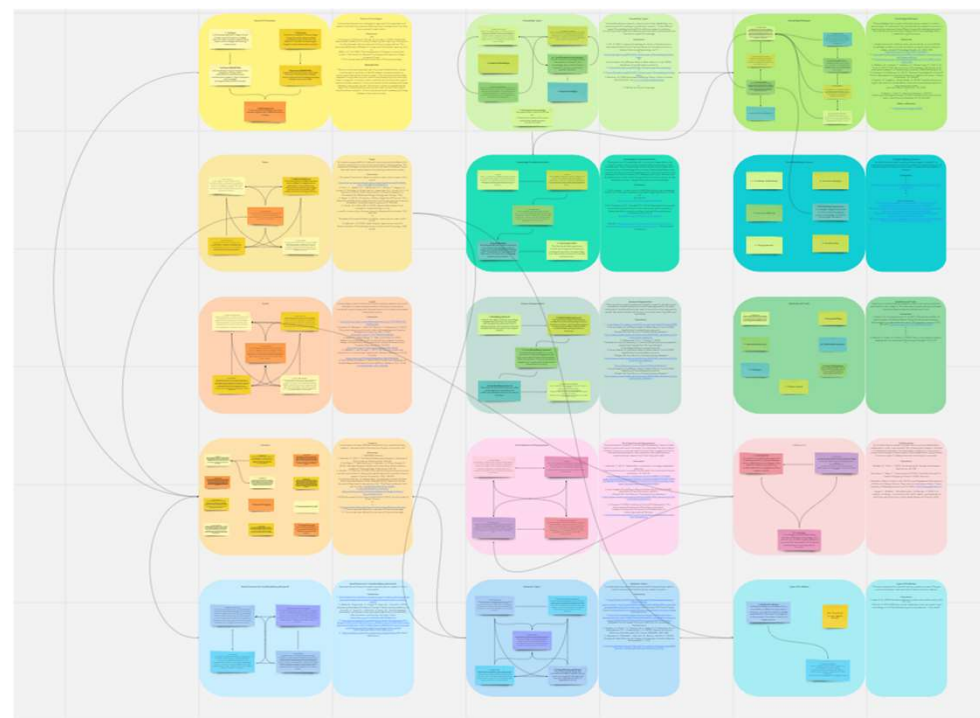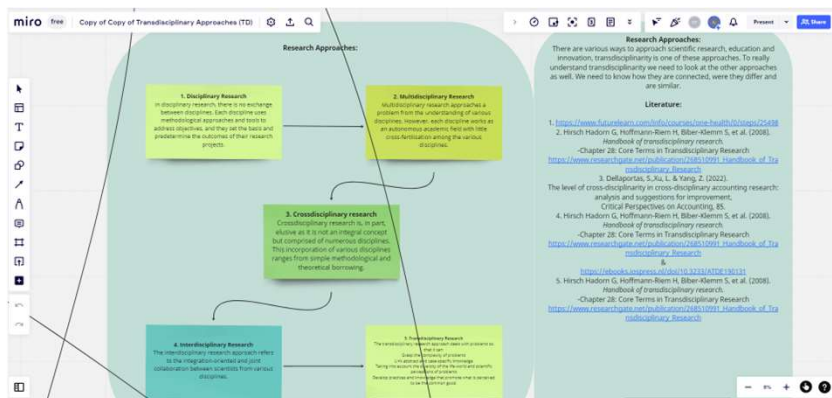# WP2 Exploration, identification and mapping of different practices and approaches

Task 2.3 Identification and mapping of sustainable entrepreneurship and innovation ecosystems

- Data collected from secondary sources from the seven universities (e.g., official websites)

- Result: a preliminary list of 40+ initiatives that contribute to creating SEI ecosystems

- This was a first step toward a more thorough mapping for D4.2 (further data collection, interviews, workshop) resulting in a list of 80+ initiatives – more details in WP4

WP2 Exploration, identification and mapping of different practices and approaches

Task 2.4 Identification and mapping of human resources strategies

- Setting up of a HR Working Group which met regularly (1-2 months) and review HRS4R Implementation on every member institution.

- Creation of a template for mapping current state of the practice on HR and best practices in HRS4R implementation and a selection of best examples. This template was used by the HR working group members to gather information on their own institution HR strategies and activities.

- Analysis of best practices and discussion. Compendium of best examples and elaboration of a comprehensive synthesis of the overall HR situation.

- This activity contributed to the mapping of RCD strategies conducted on task 5.1.

WP2 Exploration, identification and mapping of different practices and approaches

Task 2.5 Identification and mapping research infrastructures

- Setting up of a RI Working Group which met regularly (1-2 months) and review of the RI capacities of each institution.

- Discussion and selection of useful indicators and data for RI mapping. The selection was based on RI definition recommended by the EC and ESFRI.

- Creation and distribution of a template survey (24 questions) to map and categorize a selection of RIs from all universities. This survey was answered by the RIs contact person (RI managers or directors mostly).

- Selection of information and report of main findings. The outcome of this activity contributed to task 6.1.

D2.6 Glossary transdisciplinarity

WP2 Exploration, identification and mapping of different practices and approaches

Task 2.7 Determining interconnections between focus areas

- Increasing access and training to different European RI as unique skill (HR and RI)

- Transdisciplinary and multi-perspective approaches as an essential learning for researchers (TD, SEI, HR)

- Exchange of methodologies between RI and industrial stakeholders yields to increased impact (RI, TD, SEI)

- Empowering researchers to address challenges through co-design and co-production of knowledge as essential in the career development (RI, TD, SEI)

- Broad variety of conceptions means difficulties to gain a structured overview, but underline richness of the diversity within ENHANCE (TD, SEI, HR, RI)

WP3 Sustainable development through transdisciplinary research:
Overview

Focus Area 1: Sustainable development through transdisciplinary research

WP3: Sustainable development through transdisciplinary research (M6-M36)

Task 3.1 (M6-M12)	Task 3.2 (M6-M36)	Task 3.3 (M6-M36)	Task 3.4 (M6-M36)
Analyse and categorise transdisciplinary approaches including structures, strategies, study cases and terminology used for different transdisciplinary approaches	Development of a framework for transdisciplinary research processes and integrated knowledge exchange between science and society	Explore approaches to sustainability	Develop transformation toolbox for transdisciplinary research

D3.1 (M12)

D3.2.1 (M24)　D3.2.2 (M24)

D3.3.1 (M36)　D3.3.2 (M36)

D3.4.1 (M36)

WP3 Sustainable development through transdisciplinary research:
Overview

// Main Objective WP3

The main aim of this Work Package is to develop a menu of pathways for universities to better address sustainable development through transdisciplinary research.

Work is oriented towards two main areas: 1) structures, strategies and initiatives related to transdisciplinary research, and 2) sustainable development.

// Specific Objectives

O3.1 Mainstream, optomise and provide structures for institutionalising knowledge exhange betweeen science and society by addressing structures, strategies and case studies/pilots within the Alliance

O3.2 Promote and enhance the international knowledge exchange between science and society within the Alliance

O3.3 Foster a common understanding of the relevance of and encourage the use of transdisciplinary approaches within ENHANCE universities as a way of solving 'wicked problems' for sustainable development, including challenges and bottlenecks.

WP3 Sustainable development through transdisciplinary research:
Activities & Outcomes August 2022 (M1)-February 2023 (M18)

// Task 3.1 (M6-M12) Analyse and categorise transdisciplinary approaches including structures, strategies, study cases and terminology

// Task 3.2 (M6-M36) Development of a framework for transdisciplinary research processes and integrated knowledge exchange between science and society

- **Mapping** (inc. 20 case studies)
- **Survey** (40 cases mapped and categorised)
- Structured **interviews** on select projects
- **Workshop** jointly with WP2 (Oct 2022) on mapping methodology and
- **Workshop** (May 2022) on categorisation, analysis and comparison.
- **Miroboard** collaborative working platform

D3.1 (M12) Discussion, comparison and analysis of transdisciplinary approaches in ENHANCE partner universities
Comparison and analysis of the mapped transdisciplinary initiatives, exploring the different models of cooperation and approaches to transdisciplinarity in ENHANCE. Including glossary of key terms.

Transdisciplinary Walk & Talk in Berlin, September 2022

WP3 Walk & Talks
Format developed for exchange of best-practice, to strengthen networking within ENHANCE on transdiscipliarity and increase understanding of different approaches to co-creation with society across the Alliance.

WP3 Sustainable development through transdisciplinary research:
Activities & Outcomes August 2022 (M1)-February 2023 (M18)

- **Methodology** developed along two paths:
  1) Develop a broad shared understanding of transdisciplinarity
  2) Identify good practice examples - defined with regard to levels of engagement and societal impact.

- Informed by ongoing **mapping** exercises (WP2 and WP3), **interviews**, WP **meetings** and **workshops**, **bilateral exchanges**, **Walk & Talks.**

- Clustering of mapped initiatives according to **level of engagement** and **societal impact** (plus relevant structural factors) ongoing via collaborative Miroboard.

Cooperation model **(transdisciplinary)**	Research Centre **(inter- and transdisciplinary)**	Social engagement programme **(transdisciplinary)**	**Interdisciplinary** network (Eng., Architecture and Design)	Research laboratory/maker space **(multidisciplinary)**
--> structure-related providing long-term alliances	--> topic- and process-related, providing transdisciplinary processes	--> method-related providing teaching and research training	--> process-related + project-driven, providing interdisciplinary knowledge production in science, technology and innovation	--> method-, process-related providing knowledge production and experimentation with enterprises + institutions
Sustainability and University Governance Office **(interdisciplinary)**	Research project with **inter- and transdisciplinary agenda**	Strategic (real-world-lab) platform **(transdisciplinary)**	**Transdisciplinary** formats	Strategic projects (on inter- and transdisciplinary agenda)
--> structure-related, providing governance change and transdisciplinary agenda setting	--> topic-, process-related, providing multifaceted toolbox, methods and dialogue with regional partners	--> structure-related, providing knowledge exchange, testing and evaluating transformation	--> method-related, providing a framework, processes, methods for knowledge integration, exchange	--> method-, structure-related, providing research, methods, networks and participation models
Research program **(interdisciplinary)**	Research teams **(inter- and multidisciplinary)**	Business models and teams **(interdisciplinary, technology transfer)**	Partnerships (including industries) **(inter- and transdisciplinary)**	Central facility **(inter- and transdisciplinary knowledge transfer)**
--> method-related, providing alliances between researchers with a technological profile	--> structure-, topic-related	--> process-related, project-driven, providing business models and scientific business teams	--> structure-, topic-related providing interdisciplinary engagement of PhD candidates in development work	--> structure-, method-related, providing knowledge base, developing and implementing pilot projects, linking projects, centres and services for transdisciplinarity

WP3 Sustainable development through transdisciplinary research:
Ongoing & Upcoming Activities March 2023 (M19)- August 2023 (M36)

// **Task 3.2 (M6-M36)** Development of a framework for transdisciplinary research processes and integrated knowledge exchange between science and society

- The output of Task 3.1 (mapping, categorisation, development of glossary) has begun to inform the identification and development of methods and formats that can be used to support and foster transdisciplinary research at ENHANCE universities.
- The methodology that has been established will inform the next two deliverables, including a catalogue that will systematise further the mapping of transdisciplinary research projects within ENHANCE, collating the results of ongoing exchanges and offering recommendations for how ENHANCE universities can further foster transdisciplinary research projects, drawing on lessons learned from partners and good-practice identified in the mapping phase.
- An external publication will explore how this can be applied to a European pathway on transdisciplinarity, with a focus on how this research mode can be effectively used to drive the sustainable development needed to address today's grand societal challenges.
- Partners are for example engaged in a collaborative exercise to cluster the mapped transdisciplinary initiatives according to level of engagement, driving supporting structures, level of societal impact, and other key factors.
- Increased visibility of these activities is being generated and increased exchange within the Alliance and sharing of best-practice allows for key gaps to be identified and the necessary elements of the framework to be defined.

WP3 Sustainable development through transdisciplinary research:
Ongoing & Upcoming Activities March 2023 (M19)- August 2023 (M36)

// Task 3.3 (M6-M36) Explore approaches to sustainability

- Within this task we are exploring how universities, and different actor groups within them, understand and apply the concept of sustainability, with the aim of better understanding the institutional, epistemic and practical barriers and enablers relevant to developing sustainable development strategies. We also explore how universities weigh central dilemmas and trade-offs of sustainability goals.
- Task 3.3. will result in a practice-based 'menu' that will highlight potential strategies and pathways for university actors (including university leadership, educators and researchers). To achieve this, we will conduct a series of targeted case studies across the ENHANCE universities, focusing on cases that involved actors understand as best-practice, as well as cases that are understood to be particularly challenging.
- The results of this work will be included in an external publication discussing the approach of universities of technology towards sustainability research and education.

// Task 3.4 (M6-M36) Develop transformation toolbox for transdisciplinary research
- Throughout the activities in WP3 we seek to contribute to the gradual institutionalisation of transdisciplinarity and one key output will be a 'transformation toolbox'. This will be aimed at European universities of technology and offer recommendations for anchoring transdisciplinarity as a research principle for tackling the SDGs. This will include recommendations for strategic activities, supporting structures and building frameworks for establishing a permanent knowledge exchange between science and society.

WP4 Sustainable entrepreneurship and innovation ecosystems

- **SEI ecosystems:** communities of <u>interconnected and interdependent</u> individuals, organizations, institutions, and processes oriented towards enabling value creation through supporting the development of new <u>innovations and entrepreneurial start-ups</u> with the aim of cultivating <u>sustainable development</u>

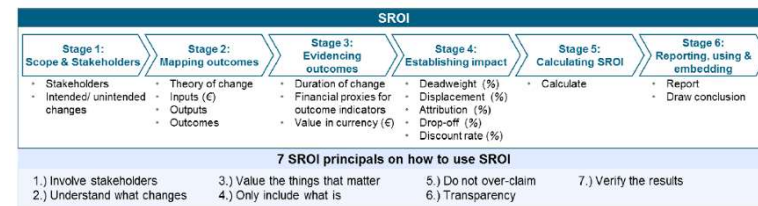- **Deliverables led by:** CHALMERS, NTNU, TUB (with support from all partners)

WP4 Sustainable entrepreneurship and innovation ecosystems

- **Task 4.1 Literature research, document analysis, partner screening and development of research instruments**
  - D4.2. First systematic mapping brought to first workshop [CHALMERS - M15]
  - D4.3. Research instruments [CHALMERS - M15]

- **Task 4.2. Developing a framework for, and piloting, sustainable impact/sustainable return on investment**
  - D4.1. Framework on sustainable impact/ sustainable return of investment [TUB - M12]

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WP4 Sustainable entrepreneurship and innovation ecosystems

D4.1. Framework on sustainable impact/ sustainable return of investment [TUB - M12]

- A framework for sustainable return on investments (SROI) developed based on scientific research

- A comprehensive view on social, environmental and economic outcomes

- Partner universities supported the testing / piloting of the framework on cases

- The work is being further developed for D4.7 (Joint platform on the measurement of sustainable return of investment)

WP4 Sustainable entrepreneurship and innovation ecosystems

D4.3. Research instruments
[CHALMERS - M15]

2.1. Interview guide for interviewing staff of universities' SEI initiatives

Theme	Interview questions
Introduction The purpose is to introduce the aim of the research to the interviewee and take their permission to record the interview for the purpose of transcription and storing data. Besides, understanding the interviewee's job description will help set the stage for the conversation.	• [Introducing the interviewer and the project] • Do you agree to recording this conversation? • What is your title/role/responsibilities at the initiative and/or the university?
Initiative's overview The purpose is to get an understanding of the background and aims of the initiative, and the different activities it undertakes to achieve its goals. This will give an overview on the "why" and "how". In addition, asking about the beneficiaries and target group will help identifying the extent of "openness" of the initiative (e.g., whether it is only for university's students and staff or to the general public; whether it is only for the city / region or the whole country / EU).	• Can you give a brief overview about the initiative (e.g., history, goals, and objectives)? • What are the key activities that support sustainable entrepreneurship and innovation? (e.g., education, research, disclosures and technology transfer, incubators and accelerators, idea evaluation/development, startup and venture formation support, networking, funding). • Who are the key beneficiaries of the initiative?
Governance and management The purpose is to clarify how the initiative is governed and managed (e.g., if it is an independent organization/program with connection to the university or a unit/department that is formally under the university's management; if it is a student-run initiative; if it involves different actors/organizations). Besides, asking about the sources of funding will help in understanding the connections to the broader ecosystem (e.g., locally, nationally, EU-level). The last question of this theme aims to seek reflections on the challenges in managing the initiative at the initiative's organizational level as well as staff's personal level.	• Is the initiative formally governed/managed by the university? Or completely independent? Clarify. • How is the initiative financed/funded? • Who are the different actors/stakeholders involved in managing the initiative? • What are the key challenges in running the initiative?
Impact The purpose of this theme is to understand how success is defined from an informal perspective (how the interviewee broadly perceives it) as well as from formal perspective (how the initiative formally evaluates success in achieving its goal via specific frameworks, tools, metrics, Key Performance Indicators, etc.). The last question digs specifically into the initiative's sustainability impact (e.g., any sustainability criteria/requirements for beneficiaries).	• How do you define success in achieving your goals? • Any metrics / KPIs / mechanisms / tools to formally assess success/impact? • How do you reflect on the initiative's impact on environmental and social sustainability specifically (as opposed to entrepreneurship and innovation in general)?
Conclusion The purpose of the concluding questions is snowballing, i.e., getting additional contact persons for conducting more interviews and/or further research on sustainable entrepreneurship and innovation (e.g., on success cases of sustainable entrepreneurs who benefited from the initiatives).	• Can you share names/contacts of: - researchers doing research on the initiative and/or the topic of sustainable entrepreneurship and innovation? - interesting entrepreneurs/companies that benefited from the initiative? - other initiatives at your university that support sustainable entrepreneurship and innovation?

WP4 Sustainable entrepreneurship and innovation ecosystems

D4.3. Research instruments [CHALMERS - M15]

2.2. Template for summarizing and organizing data on universities' SEI initiatives

Initiative & interviewee	Overview	Governance & management	Impact	Other contacts
Initiative's name: Website: Brief text: Initiative type (highlight all applicable): • educational course / program • research project / lab • disclosures & technology transfer • incubator / accelerator • idea evaluation / development • venture formation support • general advice / consultancy • funding / financing Interviewee: Title: Email:	Initiative's goals: • • • Key activities: • • • Key beneficiaries: • • •	Governance: • • • Sources of funding: • • • Actors involved in managing: • • • Key challenges: • • •	Definition of success: • • • Metrics / mechanisms / tools to assess: • • • Sustainability impact: • • •	Researchers conducting relevant research: Name: Title: Email: Entrepreneur / company that benefited: Company name: Contact person: Title: Email: Other SEI initiative(s) at the university: Initiative name: Contact person: Title: Email:

WP4 Sustainable entrepreneurship and innovation ecosystems

D4.3. Research instruments [CHALMERS – M15]

2.3. Interview guide for interviewing entrepreneurs / companies' innovation managers (beneficiaries of SEI initiatives)

Theme	Interview questions
Introduction *Here you want to gather general info about your interviewees, and what Sustainable Entrepreneurship and Innovation (SEI) initiatives / ecosystems they sought / got support from.*	• [Introducing the interviewer and the project] • Do you agree to recording this conversation? • Can you give a brief background and history about your venture / your role? • What was your key motivation to start your venture / your role? • What SEI initiatives/ecosystem did you seek support seek support from? What type of support did you get?
Value-creating challenges: making positive long-term contribution to society *Here your interviewee may tell you about their mission, vision, and the value of what they work on. They may mention issues with prototyping, product development, designing, digital technology enablers (e.g., IoT, AI, digital platforms), external legal/regulatory opportunities, and whether they follow different processes from the conventional way. The last question of this theme asks specifically on the support they sought/got from the SEI ecosystem/initiative to deal with value-creating challenges.*	• What is the value that you provide to society? • What challenges did this entail for you and your team? • How did you go about solving those challenges? • Did you get any support from the SEI ecosystem/initiative for dealing with these challenges? How?
Funding challenges: bringing money into the sustainable venture *Here your interviewee may tell you about their efforts to raise funds to power ahead with their ideas. They may mention different sources for funding such as impact investors, FFF (family/friends/fools), customer funding, public funding, grants, etc. They will possibly share ideas about their revenues/sales, and whether they are sufficient to run the business. The last question of this theme asks specifically on the support they sought/got from the SEI ecosystem/initiative to deal with funding challenges.*	• Can you tell us about your ways to sustain your project financially? • What challenges did this entail for you and your team? • How did you go about solving those challenges? • Did you get any support from the SEI ecosystem/initiative for dealing with these challenges? How?
Systemic challenges: enablers and barriers in the external environment *Here your interviewees may talk about lock-ins in place, path dependent thinking, incumbent players, stakeholders' conflicting interests, technologies, regulations, policy, institutional barriers, lobbyist forces, public attitude, change resistance, planetary boundaries, etc. The last question of this theme asks specifically on the support they sought/got from the SEI ecosystem/initiative to deal with systemic challenges.*	• Can you tell us about the environment where you operate? How do the characteristics of the systems (economic, social, political, technological, etc.) impact your operations? • What challenges did this entail for you and your team? • How did you go about solving those challenges? • Did you get any support from the SEI ecosystem/initiative for dealing with these challenges? How?
Human collaboration challenges: team and coordination issues *Here your interviewees will talk about teamwork issues, difficulties in building and maintaining their teams, conflicts in their organizations, ways to overcome conflicts and differences in values amongst team members. The last question of this theme asks specifically on the support they sought/got from the SEI ecosystem/initiative to deal with human collaboration challenges.*	• How have you organized internally to push your project forward? • What challenges did this entail for you and your team? • How did you go about solving those challenges? • Did you get any support from the SEI ecosystem/initiative for dealing with these challenges? How?
Final thoughts *Here you want your interviewees to emphasize a particular challenge or mention other challenges they have encountered and whether any support has been particularly useful for them. Finally, they hopefully tell you about possible future business/projects and whether they will follow the same logic of sustainability and continue seeking support from the SEI ecosystem/initiative.*	• What has been the most challenging part of your experience? • What has been the most useful support you got from the SEI ecosystem/initiative? • What suggestions for improvement would you recommend to the SEI ecosystem/initiative to further develop their activities/services to support SEI? • What are your future plans in the short-term and long-term? • Will you seek further support from the SEI ecosystem/initiative for your future plans? Why / why not?

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WP4 Sustainable entrepreneurship and innovation ecosystems

D4.2. First systematic mapping brought to first workshop [CHALMERS – M15]

- Built on the preliminary sample of 40+ SEI initiatives (D2.3)

- Extended to 80+ initiatives that contribute to creating SEI ecosystems

- Data from secondary sources (websites, documents, etc.) and 30+ interviews using research instruments (D4.3)

- Presented and discussed in a workshop (TU Berlin, 19th Oct 2022)

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WP4 Sustainable entrepreneurship and innovation ecosystems

D4.2. First systematic mapping brought to first workshop [CHALMERS – M15]

	Educational programs and courses	Research centers, programs, and labs	Disclosures and technology transfer	Accelerators, incubators, and funders	Student-led initiatives
CHALMERS	Chalmers School of Entrepreneurship Tracks Practical Leadership and Entrepreneurship Course Creating New Business Course	HSB Living Lab Swedish Life Cycle Center Northern LEAD Logistics Centre	Chalmers Innovation Office Chalmers Industriteknik	Chalmers Ventures Stena Center Entrepreneurship Village Johanneberg Science Park Lindholmen Science Park Sahlgrenska Science Park	ICM Advice Elumni Chalmers Entrepreneurship Society
NTNU	NTNU School of Entrepreneurship MSc Innovation, Society, and Sustainable Development Experts in Teamwork	Centre for Environment-friendly Energy Research Centers for Research-based Innovation	NTNU Technology Transfer AS	Trondheim Tech Port NTNU Discovery 6AM	Spark* NTNU Start NTNU FRAM
POLIMI	Master in Sustainability Management and Corporate Social Responsibility Master in Environmental Sustainability and Circular Economy MSc Transformative Sustainability	"Cantieri" for the city of Milan	Technology Transfer Office Spin-Offs Tech4Planet	PoliHub Poli360 Switch2Product Self-financing	Entrepreneurship Club

RWTH	Sustainability in Degree Programs Impact Degree in GreenTech	Center for Circular Economy Undergraduate Research Opportunities Program	Expert Hubs	RWTH Innovation Deep Tech Momentum Sustainability and University Governance Sustainability Fund FairTrade University	Autak – Inclusion through Innovation
TUB	M.Sc. Innovation Management, Entrepreneurship, and Sustainability Master in Energy	Chemical Invention Factory	Center for Intellectual Property	Centre for Entrepreneurship The coworking space EINS	TUB Mobility Club
UPV	Lifelong Learning Center	Project Management, Innovation and Sustainability Research Center	Office for the Promotion of Research, Innovation and Technology Transfer R&D and Innovation Management Office Orientation for Innovation R&D+i Solutions	IDEAS UPV StartUPV SPIN UPV The Polytechnic City of Innovation Centre for Development Cooperation	Generación Espontánea
WUT	Renewables in Business Program Executive MBA Startup Entrepreneurship Courses	Waste Management Innovations for Sustainable Energy Sustain 4.0 Advancing Methodology of Integrated Decision-Making Support for Sustainable Development	Center for Innovation Management and Technology Transfer Innovation Brokerage Department Research and Analysis Department	Innovation Incubator	Enactus PW

WP5 Joint human resources development

- Task 5.1 Inspire improvement in researchers' career development conditions [UPV]

  > D5.1: Guidance tool for researcher career development (g-RCD) [M18]
  > D5.2: Catalogue of RCD activities and strategies [M18]

Workshop in Valencia, November 2022

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WP5 Joint human resources development

- Task 5.1 Inspire improvement in researchers' career development conditions
  - Set up of an RCD working group
  - Regular online meetings (1-2 months)
  - 1 in-person workshop
  - Mapping of Good Practices in the implementation of Charter & Code for Researchers
  - Review of the C&C

WP5 Joint human resources development

- D5.1.1: Guidance tool for researcher career development (g-RCD)
  - The RCD WG co-created a template for identifying good practices in HR strategies and the HRS4R process in each institution
  - Members of each institution mapped good practices using the template and shared them with the rest of the WG
  - After a few online meetings to assess the content and select good examples, an in-person workshop was carried out in Valencia in which the layout and sections of the guidance tool was discussed and agreed on.
  - The final 2-3 months of the task were used to elaborate the g-RCD using the content and format that was previously agreed on, with few follow-up online meetings to address specific issues.
  - The final version of the g-RCD was uploaded and posted publicly on the ENHANCERIA webpage.

WP5 Joint human resources development

- D5.1.2: Catalogue of RCD activities and strategies
  - The RCD WG co-created a template for mapping RCD activities and strategies.
  - The template was used to collect examples of RCD activities (courses, training sessions, info sessions, seminars and conferences, online resources…) and strategies (policies, programs, organizational initiatives…) in every member institution participating in WP5.
  - The WG planned on gathering specific dates for activities in the next year, but it was pointed out the difficulty to foresee specific activities in the future. It was agreed to communicate any relevant activity (even after the completion of the task) publicly and to the rest of the alliance, and include activities in the mapping that are carried out every year.
  - The final catalogue includes the resources, activities and strategies grouped by institutions, with an overall discussion for all of them.
  - The final version of the catalogue was uploaded and posted publicly on the ENHANCERIA webpage.

WP6 Building up a community of users for strengthening research infrastructures

Wind Tunnel – Politecnico di Milano (POLIMI)

CEZAMAT laboratory - Warsaw University of Technology (WUT)

The National Laboratory for Age Determination - Norwegian University of Science and Technology (NTNU)

Competence Center NGP² Biorefinery - Rheinisch-Westfälische Technische Hochschule Aachen (RWTH)

UPVfab - Universitat Politècnica de València (UPV)

Nanofabrication Laboratory - Chalmers University of Technology (CHALMERS)| © Jan-Olof Yxell

Center for Electron Microscopy - Technische Universität Berlin (TUB)

WP6 Deliverable description and schedule

Identified tasks	Deliverable no	Deliverable title	Lead beneficiary	Type	Due date (month)
WP 6.1 Exchanging best practices and sharing experiences on managing RIs	D6.1	Report on best practices in managing RIs	WUT	Report	24
WP 6.2 Creating a catalogue of ENHANCE RIs	D6.2	Catalogue of ENHANCE RIs	NTNU	Report	28
WP 6.3 Stimulating communities of RIs	D6.3	Recommendations on sharing RI resources within ENHANCE	POLIMI	Report	36

M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
ago-22	set-22	ott-22	nov-22	dic-22	gen-23	feb-23	mar-23	apr-23	mag-23	giu-23	lug-23	ago-23	set-23	ott-23	nov-23	dic-23	gen-24	feb-24	mar-24	apr-24	mag-24	giu-24	lug-24	ago-24

TASK 6.1 - Exchanging best practices and sharing experiences on managing Research infrastructures — D6.1

TASK 6.2 - Creating a catalogue of ENHANCE Research infrastructures — D6.2

TASK 6.3 - Stimulating communities of Research infrastructures — D6.3

Focus area 4: Research infrastructures
Connection with other WPs

WP2 - Task 2.5 Identifying and mapping research infrastructures (M1-M12)

Task 2.5 analyzed, mapped and gathered information on the current state-of-art of Ris and included:

i) a mapping of the internal technological assets and of the internal skills and capabilities;
ii) gathering information on management systems for user access and research data currently used within the RIs of the Alliance.

WP6 - Building up a community of users for strengthening research infrastructures

WP6 started in M12 from the main findings from the D2.5 Report, which led to a **database of 57 selected RIs;**

- These **data will be analyzed and compared** with respect to the approach to the management of RI to explore interconnections, similarities and/or differences but also to find synergies and way of cooperating to create a community

ENHANCE**RIA**

Funded by
the European Union's Horizon 2020
research and innovation program
grant number 101035806

Task 2.5 Preliminary activities

<u>November 2021 - May 2022</u>:

- Set up of the working group for the Focus Area 4

- Elaboration of a joint definition of Research Infrastructures to be mapped, starting from the definition of European Commission

- Development of the survey template

<u>June - August 2022</u>:

- All ENHANCE Universities were involved in the survey for identifying and mapping RIs of ENHANCE alliance and the assessment of survey results.

Task 6.1 Exchanging best practices and sharing experiences on managing RIs

Task's Objectives

- Identify key points/technologies of joint interest, main experts/teams responsible and major rules of management & sharing the RI applied by individual partners. The main areas on which the analysis will be carried on will be: general concept of sharing RI among project partners, user access policies, data management and protection policies;

- Identify common definitions and agreement on a possible common model for sharing RIs at Alliance level.

- Highlight organizational and regulatory barriers at partners level that might hamper cooperation within the RI ecosystem.

August 2022 – May 2023

- Finalization of the draft of the survey questionnaire to be submitted to max 3 identified RIs managers for each University
- 1st *Workshop on managing Research Infrastructures of the Enhance Alliance* (22nd March)
- 2nd *Workshop on managing Research Infrastructures of the Enhance Alliance* (31st May 2023) - target: managers/scientific directors of RIs mapped in Task 2.5 + interested researchers
- Planning of a final Workshop on the *Report on best practices in managing Ris* (D6.1)

Task 6.2 Creating a catalogue of ENHANCE RIs

Task's Objectives

- strengthen cooperation, facilitate exchange and stimulate the creation of RI user communities

- **produce an on-line catalogue of select ENHANCE RIs** shared in different ways, e.g. by providing access for researchers, offering training activities, exchanging methods and technologies, and pooling resources for joint research projects

- collect, through the catalogue, relevant data on RI capacities including human resources, technologies, access policies and user costs and present them in a structured manner.

August 2022 – May 2023

- Definition of the RI catalogue scope and technical features;
- Identification of categories and keywords have to be used for the catalogue (es. (keywords ERC, ESFRI roadmap, Web of Science)
- Finalization of the first draft memo for the definition structure of the catalogue (draft available on Teams folder)

Task 6.3 Stimulating communities of RIs

Task's Objectives

- **Piloting initiatives** intended to pull expertise, data, platforms and other resources together

- **Opening up the portfolio** of ENHANCE RIs

- Exploring **training and mobility opportunities** between RIs

<u>August 2022 – May 2023:</u>

- Identification of set of pilot initiatives to foster cooperation among RIs and research groups of the Alliance

- Planning for the visits to facilities to be undertaken in NTNU in-person meeting (April 2023)

- Elaboration of format for "pilot reconnaissance events" (meetings between researchers who work/do research in similar fields of interest/Research Infrastructures)

- *Workshop on how to enhance the use of RIs of the Alliance contributing to main EU policies* (21st March 2023) - target: managers/scientific directors of RIs mapped in Task 2.5 + interested researchers

- *Workshop on how to attract EU funding* (31st May 2023) – target: managers/scientific directors of RIs mapped in Task 2.5 + interested researchers

- Launching of a collaborative, open and permanent MiroBoard to start new synergies and collaborations

- Gathering of needs/ideas/interests for pilot initiatives and for joint HE projects (through Microsoft Form)

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WP7 Outreach and dissemination

- Task 7.1 Develop and implement dissemination and outreach plan:
  - First version in Feb 2022

- The plan contains what and how we should do in the dissemination and communication process. Its main sections are visual communication; communication tools; implementation and reporting plan.

- The dissemination and outreach plan assumed to be dependent on and linked to ENHANCE resources, because the main objective of ENHANCERIA is to support and strengthen the research and innovation dimension of ENHANCE.

ENHANCE

Support for the Research and Innovation Dimension of European Universities

WP7.1 OUTREACH AND DISSEMINATION PLAN

EUROPEAN UNIVERSITIES OF TECHNOLOGY ALLIANCE RESEARCH AND INNOVATION ACTION

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WP7 Outreach and dissemination

- Task 7.1 Develop and implement dissemination and outreach plan:
  - Updated version in Mar 2023

| Work package	WP7 Outreach and dissemination
Deliverable	D7.2 Updated dissemination and outreach plan
Date	28.02.2023
Type	report
Dissemination	public
Lead	WUT

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D7.2 UPDATED OUTREACH AND DISSEMINATION PLAN

- The updated version of the plan included the details that weren't in the first version.
- The following details were prepared: for visual communication - we accepted the ENHANCE style guide, but also prepared our own logo and templates (for presentation and deliverables); for communication tools - new website and social media channels; for implementation and reporting plan - golden rules for working with the ENHANCE Communication Office; WP on-site meeting schedule, including workshops, events, walk & talk format.

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WP7 Outreach and dissemination

- Task 7.1 Develop and implement dissemination and outreach plan
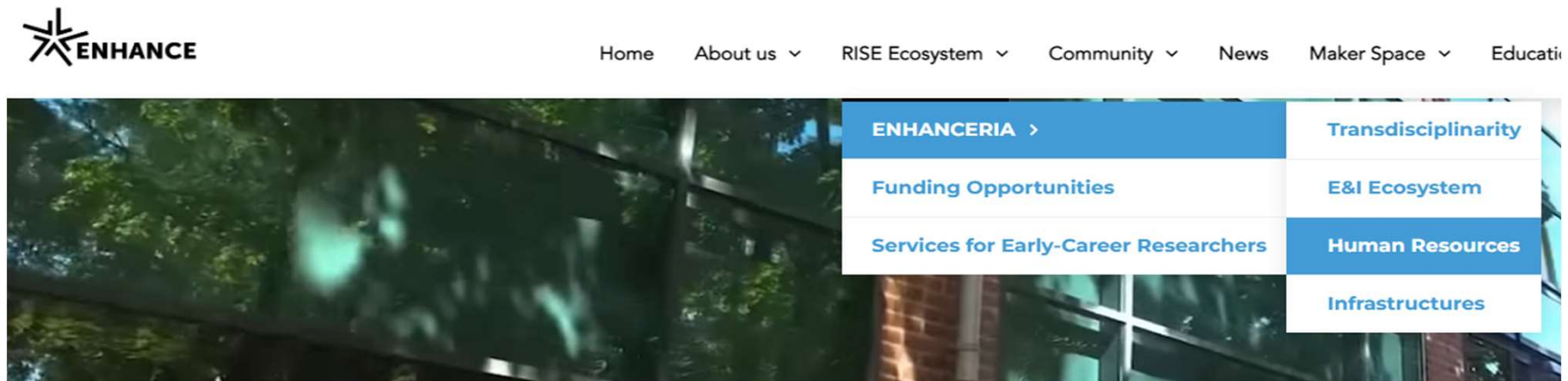
- Now we are in a continuous state of of the process of communication and dissemination realisation.

- We have new website – this website is the part of the Research Innovation Sustainability and Entrepreneurship Ecosystem on the ENHANCE website, which consists of 5 specific web pages - the ENHANCERIA main page and the next four for each focus area of ENHANCERIA. On these specific pages we publish details about each focus area, but also disseminate the deliverables of the project.

WP7 Outreach and dissemination

- Task 7.1 Develop and implement dissemination and outreach plan

Prof. R. Morawski: The road to your first scientific publications

	After March	Before March	Sum
Twitter	5	8	13
Linkedin	4	2	6
Instagram	1	2	3
Sum	10	12	22

- We also started publishing information on social media - we have collected the coaching film on YouTube and a total of 22 posts on LinkedIn, Twitter and Instagram. And of course we will continue these all activities until the end of the project and according to the implementation and reporting plan.

WP7 Outreach and dissemination

- Task 7.3 Structured collaboration at the European level, among pilot alliances:

Collaboration within the project - ENHANCERIA in-site meeting schedule, to deepen networking and structure international collaboration

ENHANCERIA events and meetongs schedule

Year	Month	Major milestones in alliance	Planned travels/physical events
2022	September		- WP3 walk and talk in **Berlin**
2022	October		- WP4 ENHANCE/ENHANCERIA mtg in **Berlin**
2022	November		- WP5 workshop in **Valencia**
2022	December		
2023	January		
2023	February		WP6 meeting in **Milan**
2023	March	Deadline mid-term reporting Deadline ENHANCE 2.0 Erasmus proposal	
2023	April		**Trondheim** - WP3 walk and talk - WP6 meeting and RI visit - WP4 meeting - PMG meeting
2023	May		**Aachen** - WP3 walk and talk - WP6 meeting and RI visit - WP5 workshop
2023	June	Deadline deliverables due M24	WP6 researchers exchange visits/pilot initiatives
2023	July		WP6 researchers exchange visits/pilot initiatives
2023	August		

WP7 Outreach and dissemination

- Task 7.3 Structured collaboration at the European level, among pilot alliances:

  Collaboration between ENHANCE and ENHANCERIA projects - to strengthen and broaden the dissemination of results, e.g. collaboration of WP4 of ENHANCERIA and WP5 of ENHANCE

Sustainable entrepreneurship and innovation ecosystems

The summer school 2022 (taken by Karen Williams Middleton)

The summer school 2022 (taken by Karen Williams Middleton)

WP7 Outreach and dissemination

- Task 7.3 Structured collaboration at the European level, among pilot alliances:

Forum of European Universities #2 (FOREU2) participation - ongoing process of exchange with European Commission, between alliances, and position papers and joint actions

Risks and mitigation

- Two areas so far
  - Changes of key people or key competences in the project
  - Lacking integration with the Erasmus+ project of the Alliance
    - on the communications side
    - good integration in regards to trandisciplinary research, sustainable entrepreneurship and innovation; and integrated into new Erasmus+ EUI proposal

- Risk-mitigation actions have taken place

Exploitation and impact

- Majority of current results are based on exploration and mapping of approaches and practices across the partner universities, and we are half way through the project.

- Little or no results have been exploited in the traditional sense of the term so far.

- Partners have been inspired by each others ways of working and institutional structures and practices, and this has already shown impact at some of the partner institutions. As documented in the mid term policy brief, some examples of this includes:

  - Implementation of a gender equality plan, a policy against unequal treatment and harassment and establishment of an office for social responsibility at the university.
  - Enhanced institutional websites and support systems related to research infrastructures.

- Related to the research and innovation dimensions of the ENHANCE Alliance, a regular meeting arena for the Vice Presidents for Research has been established.

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European Universities of Technology Alliance

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