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D6.8 – Dissemination, Communication and Exploitation First Report

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Deliverable coordinator	Alessandra Aurelio (ENG) – alessandra.aurelio@eng.it Angelo Manfredi (ENG) – angelo.manfredi@eng.it
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1. Document Info

1.1. Authors

Author name	Organization Acr.	E-mail
Alessandra Aurelio	ENG	alessandra.aurelio@eng.it
Angelo Manfredi	ENG	angelo.manfredi@eng.it
Vladimiro Scotto di Carlo	ENG	vladimiro.scottodicarlo@eng.it
Chiara Gunella	UAB	Chiara.Gunella@uab.cat
Pilar Orero	UAB	pilar.orero@uab.cat
Sarah Anne McDonagh	UAB	sarahanne.mcdonagh@uab.cat
Andria Nicodemou	BSC	andria.nicodemou@bsc.es
Diana Urquiza	BSC	diana.urquiza@bsc.es

1.2. Contributors

Contributor name	Organization Acr.	E-mail
Alessandro Caforio	UNINET	alessandro.caforio@uninettunouniversity.net
Manfred Mudelsee	CRA	mudelsee@climate-risk-analysis.com
Solene Delarue	AGO	solene.delarue@agorize.com
Lorena Banyuls	4S	lorena.banyuls@4sfera.com
Biljana Basarin	UNSPMF	biljana.basarin@gmail.com
Loukas Katikas	EA	lkatikas@ea.gr
Aleksandar Radisic	RGSMART	aleksandar.radisic@smart.edu.rs
Uusitalo Teuvo	VTT	teuvo.uusitalo@vtt.fi
Zarrin Fatima	VTT	Zarrin.Fatima@vtt.fi
Ida Skov Nielsen	DBT	teuvo.uusitalo@vtt.fi
Anda Badita	RST	anda.badita@royalschool.ro
Michael Reiner	ECQA	michael.reiner@fh-krems.ac.at

1.3. Reviewers

Reviewers name	Organization Acr.	E-mail
Alessandro Caforio	UNINET	alessandro.caforio@uninettunouniversity.net
Jelena Desnica	RGSMART	jelena.desnica@smart.edu.rs

1.4. Document History

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0.1	Alessandra Aurelio Chiara Gunella Pilar Orero Sarah Anne McDonagh	15-01-2023	Table of Content
0.2	Alessandra Aurelio Vladimiro Scotto di Carlo Angelo Manfredi	30- 03- 2023	Introduction Paragraph 2.1 Deliverable Aims and Objectives Paragraph 2.2 Project Overview Paragraph 4.1.1 GreenSCENT Scope and Objectives

			Paragraph 4.2.1 Project Market Overview and Relevant Sectors
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1.6. Table of Contents

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1.7. Acronyms

Acronym	Description
AI	Artificial Intelligence
API	Application Programming Interface
AVMSD	Audiovisual Media Services Directive
CAGR	Compound Annual Growth Rate
CSR	Corporate Social Responsibility
DBMS	Database Management System
ECCEL	European Certification for Climate and Environmental Literacy
GDA	Green Digital Accessibility
GDP	Gross Domestic Product
HTML	Hyper Text Markup Language
JSON	JavaScript Object Notation
NGO	Non-Governmental Organization
PESTEL	Political, Economic, Sociocultural, Technological, Environmental, Legal
KPIs	Key Performance Indicators
REST	Representational State Transfer
SWOT	Strengths, Weaknesses, Opportunities, Threats
VR	Virtual Reality
WCAG	Web Content Accessibility Guidelines
WebGL	Web-based Graphics Library

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1.8. Executive Summary

This report is the result of the work conducted within the Task 6.1 – Dissemination Activities (M1-M36), Task 6.2 - SCENT clustering and peer learning activities (M3-M36) and Task 6.3 Sustainability and Exploitation (M3-M36). It represents a key result of WP6 Impact and Outreach, for assuring the future exploitation of the main outcomes of the project.

GreenSCENT's Communication, Dissemination, and Exploitation initiatives started in Month 1 and will persist until the project's conclusion in Month 36. Although these activities are interrelated, they encompass distinct facets and stages of the project.

The focus of this deliverable is on several items. Firstly, it aims to report on the dissemination and communication activities conducted during this initial phase of the project (M1- M17). The first section will provide a detailed summary of the achievements, innovative materials developed, active involvement in events, and the key performance indicators (KPIs) attained up to M17 to enhance the visibility of the project. Next, the document aims to present an overview of the architecture and a summary of the project outcomes. Additionally, the document seeks to provide an outline of the current market status in relation to the potential launch of the project outcomes and it intends to introduce the potential target market segments too. Then, as part of these efforts, an initial benchmark has been conducted to identify potential competitors and key players in the reference sectors. Furthermore, the early individual intentions for outcomes exploitation from each partner in the Consortium have been collected. This activity serves as a starting point to gain an understanding of how to exploit the project's results effectively, both on an individual basis and collectively.

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2. Introduction

GreenSCENT – Smart Citizen Education for a Green Future – is a research and innovation project funded by the European Union's Horizon 2020 programme, under Grant Agreement N° 101036480.

GreenSCENT aims at developing a competence framework embracing all the Green Deal focus areas through an iterative, participated, experience and learning-by-doing based design approach.

GreenSCENT activities embrace both experts' and researchers' inputs and advise, citizen participation and stakeholder engagement initiatives; different European regions, different educational levels (from primary schools to higher education), at different engagement levels (from observation to data collection and processing, to contribute to scientific and policy agenda).

GreenSCENT legacy will consist of the Competence Framework (GreenComp), its Methodology, Use Cases, User Guides; Training kits co-designed for implementing the framework; SCENTbox, the set of digital, physical and hybrid demonstrators developed by the project; and ECCEL, a European "driving license" for Climate and Environmental competencies and skills, that will be tested during the project.

2.1. Deliverable Aims and Objectives

This report is the result of the work conducted within the Task 6.1 – Dissemination Activities (M1-M36), the Task 6.2 - SCENT clustering and peer learning activities (M3-M36) and Task 6.3 Sustainability and Exploitation (M3-M36). It represents a key result of WP6 Impact and outreach, for assuring the future exploitation of the main reached results of the project.

The aim of this deliverable is:

- to report about the **dissemination and communication activities** performed in the first half of the project;
- to report about the **clustering;**
- to provide an overview of the **project outcomes**;
- to provide an overview of the current **status of the markets** where the potential project outcomes could be launched;
- to introduce the potential **target market** groups;

As part of this activities, the **individual exploitation early intentions** of each partner of the Consortium have been collected.

In more details, this deliverable aims to:

- report about the **communication and dissemination materials and channels**;
- update with regard to the **events** joined;
- inform on the progress in relation to the project **KPIs**;
- report about **clustering actions**;
- describe the **main innovative outcomes** in GreenSCENT project;
- provide a **market study and analysis**, concerning the main sectors impacted by the GreenSCENT project;
- provide an analysis of the main target market groups potentially interested in the solutions developed in GreenSCENT project;
- carry out an **early benchmark** on the main **competitors** and **players** of the project's reference markets;
- carry out a ***PESTEL Analysis*** aimed at understanding how the external environment could negatively influence the impact of the proposed technological solutions and framework, also providing possible conceptual tools to implement appropriate strategies to prevent this from occurring;
- carry out a ***SWOT Analysis*** in order to identify strengths, weaknesses, opportunities and threats related to GreenSCENT solutions;

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- describe in a visual way, through the ***Marketing Funnel*** tool, the path leading to conversion, from the initial stages in which potential users learn about the project, to the choice phase;
- define and describe the **early individual exploitation plans** of all the partner involved.

The dissemination level of the present document is marked as Confidential, only for members of the consortium.

2.2. Project Overview

The main objective of GreenSCENT is to support the implementation of Green Deal [1] policies by involving EU citizens, especially young people, in the co-creation, testing and validation of a European Multidisciplinary Competence Framework (GreenComp) covering the main thematic areas of the EU Green Deal. It aims to foster acceptance and uptake of the Green Deal through a multi-stakeholder participatory approach and measure its effectiveness in terms of awareness, skills and implicit attitudes, key factors for real behavioural change.

The main founding pillars of the SCENT project are as follows:

- **Citizen engagement**. Within the project, it is considered a driver for change. Actively involving citizens in policymaking is a means to improve the effectiveness, quality and uptake of policies and decisions that address relevant and complex challenges at both global and local levels, ranging from climate change to welfare redesign, territorial development, or public service provision. From the point of view of adoption, when citizens are involved, feel included in the creation of innovations and not just the recipients of them, and when there is a lack of acceptance among citizens for such services, it becomes easier to ensure that they gain broad acceptance.
- **Active experimentation.** Active observation, data collection, and open innovation can enhance comprehension and increase acceptance. By promoting engagement and hands-on actions, individuals can be motivated to participate and feel involved in addressing environmental problems caused mainly by human activities. GreenSCENT will offer various comprehensive "demonstrators" that allow students and citizens to apply the proposed competency framework and encourage them to play with science and their behaviour. This way, they can observe, comprehend, and evaluate the effects of their actions on the planet.
- **European Youths.** The youth of the European Union is crucial for promoting knowledge and information about the Green Deal and the importance of adopting green behaviour. Young EU citizens can disseminate this information to their peers both in and out of school, as well as to their families. Furthermore, as they grow up, they can become professionals and drive change in the work market and various industries, political and social processes, all towards a green perspective for the protection of the planet. Educational institutions like schools and universities play a vital role in this process. GreenSCENT plans to showcase its demonstrators in various settings, including schools, universities, and non-formal education settings, such as Open Innovation Challenges and Citizen Engagement initiatives, across different educational levels.
- **Involvement of vulnerable groups**. It is important to involve vulnerable groups, including migrants, refugees, people with disabilities, the elderly, and those living in rural areas, in both the discussion and practical measures concerning the Green Deal. The European Union's "united in diversity" philosophy cannot be achieved if these groups are left out. Respect for diversity, inclusion, and democratic participation are fundamental EU principles, and GreenSCENT will ensure that they are upheld. Considering the changes in education after COVID-19, new methods of engaging people are necessary, and digital accessibility is crucial. Creating accessible content is essential to reach and motivate people while minimizing the risk of dropping out of education. GreenSCENT will involve different user groups in designing and validating proposed solutions and will also adopt accessibility standards and cross-cultural approaches in developing any analog or digital demonstrators supporting the GreenComp.
- **GreenComp: acceptable and adoptable**. The GreenSCENT project aims to involve EU citizens in increasing awareness and acceptance of the Green Deal growth plan. In addition to citizens, the project will engage potential users and stakeholders of GreenComp, such as experts, activists, educational providers, and employers. This engagement is necessary to ensure the broad adoption of GreenComp beyond the project's lifetime. GreenComp can be used as a tool for designing and

implementing educational initiatives both inside and outside the classroom. It can also facilitate the integration of environmental-related competences in human resources and talent management enterprise processes.

- **Other competences in addition to climate and environment.** The GreenSCENT project will involve citizens, particularly students, in activities that aim to test and validate the proposed competence framework. These activities will help individuals develop various competences beyond just climate and sustainability knowledge. For instance, they will be challenged in areas such as science education, digital competences, and soft skills like creative thinking, problem-solving, team working, project planning, and design. These transversal and complementary competencies will have a positive impact on both their personal and professional capacities, as well as their understanding of climate and environmental challenges.

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3. Communication and Dissemination

In this section, we will provide a detailed summary of the achievements, innovative materials developed, active involvement in events, and the key performance indicators (KPIs) attained up to M17 to enhance the visibility of our project. This section will be organised into the following subsections:

- **Communication and dissemination materials:** We will outline the range of materials and engaging content created to share the objectives and the mission of the GreenSCENT project.
- **Channels of communication and dissemination:** We will explore the diverse array of communication channels employed to disseminate our project's message. This encompasses website and social media networks through which we have proactively engaged with our target audience.
- **Events joined:** We will provide an account of the various events our project has actively participated in. These events include conferences, seminars, workshops, and symposiums related to sustainable practices and green initiatives. Our involvement in these events has provided valuable opportunities to network with like-minded individuals, exchange knowledge, and showcase our project's outcomes.
- **Monitoring progress through key performance indicators (KPIs**): We will highlight the KPIs we have established to measure and track the impact of our project. These indicators serve as quantifiable benchmarks that enable us to assess the effectiveness of our communication and dissemination efforts, audience engagement, and overall progress towards our objective of empowering individuals towards a green transition.

By presenting a systematic overview of our achievements, materials, events, and KPIs, we aim to demonstrate the efficacy of our communication strategies in engaging, educating, and empowering individuals to embrace sustainable practices.

3.1. Communication and dissemination materials

This section focuses on the Communication and Dissemination Materials developed and to be developed in the GreenSCENT project. These materials play a crucial role in effectively conveying the project's objectives, outcomes, and success stories to various stakeholders, partners, and the wider audience. The following list provides a brief overview of each material:

- **Flyers:** Informative and visually appealing leaflets created to distribute key information about the GreenSCENT project.
- **Roll up**: Large, retractable banner designed to showcase the project's objectives and outcomes at events or exhibitions.
- **Storytelling toolkit:** A storytelling toolkit designed for children, allowing them to express their environmental stories through stop-motion animation using GreenSCENT characters.
- **GreenSCENT stories:** Gathering stories from project partners that highlight the positive impact of GreenSCENT on the environment and accessibility.
- **Book:** A comprehensive book that provides an in-depth exploration of the GreenSCENT project, its findings, and its implications. In total, we currently have fifteen chapters that cover the multitude of topics related to the project. The book is due for publication in October 2024.
- **Newsletter:** Regularly published newsletters to update stakeholders, partners, and interested individuals about the project's progress, achievements, and upcoming events.
- **Blog articles:** Informative and engaging blog posts sharing project updates, insights, and relevant topics with a wider audience.
- **Videos:** Visually compelling videos that explain the GreenSCENT project's goals, showcase its activities, and present success stories.
- **Customised graphics and flyers:** Tailored graphics and flyers designed to meet specific communication needs or target different audiences effectively.
- **Academic Articles:** Scholarly articles published in academic journals to disseminate GreenSCENT's research findings and contribute to the academic community's knowledge.
- **Special Issue on Green Digital Accessibility:** A Special Issue guest edited by Sarah McDonagh and Pilar Orero at UAB. In total, we have received nineteen papers, nine of which have made it through

the peer review process. Publication of all articles is due end of October 2023 with articles published on a rolling basis.

Below is a detailed analysis of each element.

3.1.1. Flyers

Two informative flyers have been created to provide an overview of the project's main goals and expected outcomes. These flyers are designed to be used in various settings such as events, conferences, and presentations. Additionally, digital versions of these materials have been developed to facilitate wider distribution and reduce the environmental impact associated with printing. By Month 30 (M30), 4 more flyers will be completed:

- Flyer and brochure summarising the project results: This document will present the findings and achievements of the project, providing a comprehensive overview of the outcomes.
- Design of a distinct brand/logo for the final event: A specific logo will be created to represent the concluding event, giving it a unique visual identity.
- Customised event agenda layout for the final event: A tailored agenda design will be developed to effectively organise the activities and schedule of the concluding event.
- Updated version of the GreenSCENT brochure: The project's existing brochure will be revised and improved, incorporating any relevant updates and enhancements by M30.

The image below illustrates the two illustrative flyers.

Figure 1: GreenSCENT flyers created to inform the public about the key objectives and anticipated outcomes of the project

3.1.2. Roll up

During the last 17 months, we have been focused on developing a roll-up model that showcases the visual identity of our project. This model is available as an optional dissemination tool for each partner. The roll-up

has been designed with the aim of increasing the project's visibility in diverse contexts and settings, effectively promoting its objectives. The image below illustrates an example of the GreenSCENT roll-ups.

Figure 2: Visual representation of the GreenSCENT roll-up

3.1.3. Storytelling toolkit

Over the past months, we have crafted a GreenSCENT storytelling toolkit specifically designed for children. This unique toolkit aims to empower children to unleash their creativity and imagination by creating their own stories using the GreenSCENT characters. Our primary objective is to shift the project's perspective from being primarily focused on adults to one that prioritises the experiences and perspectives of children. We aim to highlight the visions, perspectives, and ideas of children who engage with GreenSCENT.

To facilitate this process, we have included stop-motion animation as an engaging medium. The toolkit provides comprehensive guidelines and resources in the form of videos, enabling children to create their own stories through the world of stop-motion animation.

The storytelling toolkit has been shared among partners and is available on the DDD Open source platform for external stakeholders.

Figure 3: Examples taken from the GreenSCENT Storytelling Toolkit for Children

3.1.4. GreenSCENT stories

Over the course of the last 17 months, we have actively engaged with our partners to gather valuable input on GreenSCENT, Smart Education, and Environmental Education. This collaborative effort has led us to develop a social media campaign that showcases the perspectives and thoughts of our partners. Our primary objective with this campaign is to humanise the project by putting a face to it and to create a platform where our partners can express their ideas and provide insightful contributions. The campaign was launched on social media in

Month 14 and will persist until the completion of the project. We have included a few examples below to illustrate the nature of our campaign.

Figure 4: Examples taken from the GreenSCENT stories

3.1.5. Book

We have also organised a book that will disseminate the research of the GreenSCENT project. Titled *European Green Deal in practice: research perspectives on environmental education and sustainability*, the book combines theoretical as well as practical approaches to education and training for sustainability. It takes as its key themes the European Green Deal's eight topic areas: clean energy, sustainable industry, building and renovation, farm to fork, eliminating pollution, sustainable mobility, biodiversity and sustainable finance.

The diversity of subjects this book offers to the reader makes it a welcome addition to a growing field. To date there has been little work published on the application of the Green Deal in educational programmes and, while environmental education is very dynamic at present, this area has received scant attention. Seeking to remedy this critical omission, this book represents the first application of the Green Deal topics in the classroom.

It will examine environmental education from an academic perspective, further the development of digital tools to promote sustainability through inclusive and accessible design and provide recommendations for their practical application. Furthermore, it will discuss ways to engage larger and more diverse audiences (children, young people and adults across socio-economic, cultural and ethnic backgrounds) on the topic of sustainability through such activities as air quality monitoring, open innovation challenges, climathons and youth design assemblies.

The book will be available in Open Access as part of UAB's agreement with the publisher Open Books Publishers. Currently, the book comprises 15 chapters that covers the range of the GreenSCENT project activities. The book is edited by Sarah Anne McDonagh, Alessandro Caforio, and Alessandro Pollini with a publication date set for the end of the project in October 2024.

3.1.6. Newsletter

A total of 10 newsletters were shared with subscribers. In M18, there are 474 subscribers. The newsletter always maintains a consistent structure, starting with upcoming events and followed by recommendations for

books, movies, documentaries, and articles related to smart, accessible, green education, climate change, and environmental education.

The objectives of the newsletter are twofold:

- To provide subscribers with information about upcoming events: The newsletter aims to keep subscribers informed about upcoming events related to smart, accessible, green education, climate change, and environmental education. This objective ensures that subscribers are aware of relevant opportunities to engage, participate, and stay updated on important activities and initiatives.
- To offer recommendations on educational resources: The newsletter aims to provide valuable recommendations on books, movies, documentaries, and articles that pertain to the aforementioned topics. By doing so, subscribers can broaden their knowledge, deepen their understanding, and explore various perspectives on smart, accessible, green education, climate change, and environmental education.

3.1.7. Blog articles

A collective of 39 blog articles has been released, featuring contributions from various partners. Each partner has contributed at least one article discussing their involvement in the project or a topic relevant to GreenSCENT's missions, such as environmental education for all, smart accessible environmental education, sustainability, and accessibility.

Figure 5: Examples taken from the GreenSCENT Blog

3.1.8. Videos

GreenSCENT has released a total of 18 videos for dissemination purposes.

The videos are categorized into four distinct categories:

- Videos showcasing the project's structures and mission.
- Videos highlighting the Green Digital accessibility conferences, featuring feedback from experts.
- Videos showcasing the GreenSCENT demonstrators.
- Videos focusing on the GreenSCENT webinars.

These videos are published on GreenSCENT's YouTube channel and shared across various social media platforms, including those of project partners.

The videos are easily accessible on the GreenSCENT are presented at events, fairs, and conferences to promote the project's activities, vision, and results in an appealing and eco-friendly manner.

3.1.9. Customised graphics and flyers

During the past 17 months, various customised graphics and flyers have been designed to announce significant events and make impactful announcements for the project. These materials are carefully crafted to effectively convey the relevant information to the intended audience. The project's visual identity is integrated into these materials, ensuring consistency and coherence across all project communications. Below are a few examples among the numerous materials created during this period:

Figure 6: Examples taken from GreenSCENT dissemination materials

3.1.10. Academic articles

In the past 17 months, a total of six academic articles have been written with the purpose of making valuable academic contributions to the fields of environmental education, smart accessible environmental education, sustainability, and accessibility.

N.	Year	Authors	Title
1	2022	Bilgin, A. S., Molina Ascanio, M., Milanovic, I., Kirsch, M., Beernaert, Y., Sotiriou, S., Gregori Montaner, A., Cornakov, S., Velner, G., Axisa, J. , Wellens, T., Muscat, M., Vaidelis, G., Messaritou, M., Goździk, A., Castilla Mora, L., Ivanova, I., Dariou, E., Yuste,	STEM in the future: Transforming education for sustainability

		A., Preda, E., Quarta, B., B. Domínguez, X., Kesting, F., Katikas, L., Mitic-Radulovic, A., Gras-Velazquez, A. (2022),	
2	2022	Garito, M.A., Caforio, A.	Education and Citizen engagement as drivers for ecological transition: the GreenSCENT project in Proceedings of the 15th International Scientific Conference on "Energy and Climate Change", ISBN: 978-618-84817-6-3 (e-book), ISSN: 2241-7850-3
3	2023	McDonagh, S. & Brescia Zapata, M.	Combining XR, Accessibility, and Sustainability in the Classroom: Results of an Exploratory Study
4	2023	Micić Ponjiger T, Lukić T, Wilby RL, Marković SB, Valjarević A, Dragićević S, Gavrilov MB, Ponjiger I, Durlević U, Milanović MM, Basarin B, Mlađan D, Mitrović N, Grama V, Morar C.	Evaluation of Rainfall Erosivity in the Western Balkans by Mapping and Clustering ERA5 Reanalysis Data.
5	2023	Orero, Pilar	La accesibilidad a los medios. Una oportunidad para la diversidad, la inclusión y la educación
6	2023	Stankov, U., Filimonau, V., Vujičić, M. D., Basarin, B., Carmer, A.B., Lazić, L., Hansen, B.K., Ćirić Lalić, D., Mujkić, D.	Ready for Action! Destination Climate Change Communication: An Archetypal Branding Approach

Table 1: Articles published during the first 18 months of the project

Additional articles are scheduled for publication within this year as part of the Special Issue on Green Digital Accessibility.

3.1.11. Special Issue Green Digital Accessibility

As an output of the GDA conference, we have organised a Special Issue on the topic of "Green Digital Accessibility" in the open access Springer journal Universal Access in the Information Society. The goal of this Special Issue is to disseminate research generated as part of the GDA conference. It is edited by Dr Sarah McDonagh and Professor Pilar Orero and publication is due in late 2023. Currently, there are eight articles that are due to be published, subject to peer review.

3.2. Communication and dissemination channels

To effectively reach and engage a wide audience, GreenSCENT employs various channels such as social media platforms and its website. The project shares information on its official social media accounts as well as those of its partner organisations. Regular posts are made to disseminate news and valuable content, with updates being added on a weekly basis.

GreenSCENT uses Facebook, Twitter, LinkedIn, YouTube, and Instagram to enhance the project's visibility, share knowledge, promote results, and foster interaction with the public. The project is committed to using inclusive, non-discriminatory, and gender-neutral language in its social media content and messaging. All partners collaborate with UAB to curate and select appropriate content.

This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101036480

To ensure a systematic approach, a publication calendar was established for the GreenSCENT project. Starting from Month 9 (M9), the Communication and Dissemination (C&D) team began posting specific content with targeted messaging every Monday, Tuesday, Wednesday, Friday and Sunday. At present, in Month 18 (M18), the publication schedule includes Monday, Tuesday, Wednesday, Thursday, and Friday which are the days in which we got more interaction with the public. However, this schedule is subject to change if there is a need to supplement the news content.

Provided below, concise explanations for each channel.

3.2.1. Facebook

In month 3, we established the Facebook channel. The data from Facebook at month 17 are presented below:

Social Media	Facebook	M17
	Followers	124
	Posts	216
	Coverage	7626
	Interactions	1370
	Likes	1249
	Shares	50

Table 2: GreenSCENT Facebook page analytics

3.2.2. Twitter

In month 3, we established the Twitter channel. The data from Twitter at month 17 are presented in the table below:

Social Media	Twitter	M17
	Followers	434
	Tweets	521
	Impressions	88'806
	Profile visits	37557
	Likes	1983
	Retweets	738

	Mentions	149

Table 3: GreenSCENT twitter page analytics

3.2.3. YouTube

In month 3, we established the YouTube channel. The data from YouTube at month 17 are presented in the table below:

Social Media	**Youtube**	**M17**
	Subscribers	22
	Videos	18
	Views	2967
	Shares	28
	Likes	14

Table 4: GreenSCENT Youtube page analytics

3.2.4. LinkedIn

In month 3, we established the LinkedIn channel. The data from LinkedIn at month 17 are presented in the table below:

Social Media	**LinkedIn**	**M17**
	Followers	373
	Posts	235
	Impressions	36'392
	Page views	1183
	Reactions	1551
	Shares	133

Table 5: GreenSCENT Linkedin page analytics

3.2.5. Instagram

During the implementation of our project, specifically on M16, we focused on establishing an Instagram page for GreenSCENT. Our main objective is to broaden the reach of the project, with a particular emphasis on engaging with young people. Through captivating visuals our aim is to establish connections with youths and their communities. The Instagram page serves as a platform for sharing the project's progress, achievements, and upcoming events with a wider audience, thus encouraging greater engagement. Data collection will occur over the course of the upcoming months.

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3.2.6. Website

Our project's website has recently undergone an update, focusing on incorporating more visual elements and simplifying the language used. The objective was to make the information accessible to a diverse range of audiences, including those who may not be familiar with the project's specific terminology. The aim is to create an interactive, appealing, and user-friendly website that can reach a broader audience and enhance engagement with the project. Over the 18 months, the project website has received multiple updates to improve the user experience and ensure that the information remains current and relevant. We are now conducting a second review of the webpage to create a compelling call to action on the homepage and provide space for each partner to describe their activities and mission.

According to the latest data analysis, the website visits for the 17th month have reached a count of 7282.

3.3. Events

This section will present the notable high-level events and external collaborations that occurred during the first 18 months of the project. These events and collaborations were essential in driving the project's progress and success, contributing significantly to achieving its goals and milestones.

3.3.1. High level events

In the GreenSCENT project, a total of 9 high-level events were attended. These events were organised by prestigious institutions at the EU or worldwide level, including renowned organisations such as UN agencies and the European Commission. The table below provides specific details about each event, including the date, location, partner contribution, audience size, audience type, and, if available, a URL for further information:

N	Date	Location	Name of Event	Type of Event	Partner Contributers	Size of audience (if data is availabl e)	Audience type (if data is available)	URL (if data is available)
1	12th of May 2023	Online	UN WSIS Forum 2022 - Green Digital Accessiblilty	Thematic Workshop	UAB, UNINET, BSC, UNSPMF	60	UN representatives, policy makers, ICT enterprises, researchers	https://www.itu.int/net4/wsis/forum/2022/Agenda/Session/363
2	18th of May 2022	Barcelona	Global accessibility awareness day - GAAD	Workshop	UAB	15	Students	https://grupsderecerca.uab.cat/transmedia/GAAD
3	30th of May 2022	Barcelona	Creative educational materials towards Green Deal children engagement. Eu Green Week	Workshop	UAB	15	Eucators, ITs, Schools	https://grupsderecerca.uab.cat/transmedia/greenweek
4	30th of September 2022	Rome	European researcher Night	Workshop	UNINET	30	Students	-
5	30th of September 2022	Barcelona	European researcher Night	Workshop	UNINET and UAB	30	Students	https://lanochedelosinvestigadores.esciencia.es/la-noche-2022/programa-bcn-2022/

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6	2/Dicember/ 2022	Barcelona	Green Digital Accessibility	Conference	UAB	30	Academics	https://webs.uab.cat/transmedia/gda/
7	13th to 17th of March 2023	Geneve	WSIS FORUM 2023	Workshops and Fair	UAB	150	High level participtants	https://www.itu.int/net4/wsis/forum/2023/es/Agenda/Session/260
8	14th of March 2023	Geneve	WSIS FORUM 2023	UN - High Level Interactive Policy Session	UNINET	250	High level participtants	https://www.itu.int/net4/wsis/forum/2023/Agenda/Session/143
9	15th of March 2023	Geneve	WSIS FORUM 2023	High Level Policy Track - Closing Event	UNINET	500	High level participtants	https://www.itu.int/net4/wsis/forum/2023/Agenda/Session/441
10	19th of May 2023	online	Accessibility Meets Sustainability Gaad	Pitch Event	UAB	30	academics, social workers, ITs	https://webs.uab.cat/transmedia/gaad/
11	7th of June 2023	online	Skills for Clear Communication of Sustainability - Green week	EU event	UAB	100	-	https://webs.uab.cat/transmedia/greenweek2023/
12	8th of June 2023	online	Empowering and skilling citizens to become drivers towards a climate neutral and sustainable Europe through citizen science - Green week	EU event	UNINET	100	-	https://ec.europa.eu/research-and-innovation/en/strategy/strategy-2020-2024/environment-and-climate/european-green-deal/green-deal-projects-support/green-deal-events/empowering-and-skilling-citizens-become-drivers-towards-climate-neutral-and-sustainable-europe

Table 6: High Level events joined by GreenSCENT's partners

3.3.2. External events

During the first 18 months of the project, each partner actively participated in various external events to promote and disseminate the GreenSCENT project. A total of 55 events were joined by the partners, aiming to share project outcomes and engage with relevant stakeholders. The following details the date of each event, its title, the partner responsible for organizing the event, the target audience, and, if available, a link for further information:

N	Date	Location	Name of Event	Type of Event	Partner Contributers	Size of audience (if data is available)	Audience type (if data is available)	URL (if data is available)
1	1th of March 2022	Online	Webinar: Unlocking the Potential of XR for Persons with Disabilities	Webinar	UAB	90	experts on media accessibility, pòlicy makers, regulators	https://www.funka.com/en/unlocking-the-potential-of-xr

2	5th of April 2022	Brussels	PROCREATION	Conference	UAB	47	Media producers	https://www.coproductionforum.com/
3	13th of April 2022	Rome	Project's presentation at the seminar titled: Sustainability Monitor	Seminar	UNINET	30	Private Companies, Policy Makers	
4	29th of April 2022	Online	The European Local Coalition	Webinarr	UNINET	40	Academics	https://www.civocracy.org/europeanlocalcoalition
5	5/May/2022	Online	Project's presentation at the Plenary Assembly of the European Climate Pact	Plenary Assembly	UNINET	50	Policy Makers	
6	20/May/2022	Online	The New Media Initiative	Pitch Event	UAB and ENG	30	-	https://nem-initiative.org/
7	24th of May 2022	Institute of Applied Linguistics, Varsaw	Blockchain as a circular economy facilitator for media accessibility	Pitch Event	UAB	30	-	-
8	25th of May 2022	Barcelona	GreenSCENT Smart Citizen Engagement for a Green Future	Class	UAB	20	Students	-
9	25th of May 2022	Online	Roundtable on Air quality monitoring	Workshop	UNSPMF	30	Academics	-
10	3rd of June 2022	Vienna	"Green Immersive Media for All"	Pitch Event	UAB	58	-	https://immersivelrn.org/pages/ilrn2022
11	15th of June 2022	Online	Support Office for Green Deal	Webinart	UNINET	Sister projects	Sister projects	-
12	20th of June 2022	Online	Intersectional design in practice a critical perspective on sustainability for all	Webinar	UNINET	50	Students	https://www.forumdesignprocess.org/dgdw22/
13a	1st of July 2022	Online	STEM IN THE FUTURE: THE ROLE OF SCHOOLS IN THE GREEN TRANSITION	Pitch Event	EA	50	Students	http://www.scientix.eu/networking-event/STEM-in-the-future

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13b	1st of July 2022	Printed version	Illustration (Book) of the school activities and projects that the students participated for the school year 2021 - 2022. The co-design workshops and the demonstrators presentation are mentioned in the book.	Presentation	EA	5000	Parents	Photos and the printed version can be shared.
14	30 th of July 2022 - 11th of July 2022	Barcelona	ITACA	Workshop	UAB	20	Students	https://www.uab.cat/web/campus-itaca-1345780037226.html
15	5th of July 2022	Online	Sustainable because accessible : Diversity and Inclusion	Workshop	UNINET	19/January/1900	Students	-
16	7th of July 2022	Barcelona	Jornada Universitats Compromeses	Workshop	UAB	50	Students	https://www.uab.cat/web/sala-de-premsa/detall-noticia/universitats-compromeses-seminari-de-treball-sobre-responsabilitat-social-universitaria-1345829508832.html?detid=1345863298817
17	09th of July 2022	Online	project's presentation at the EuCliPa	Euclipa Event	UNINET	40	Policy Makers	-
18	10th of July 2022	Finland	RRI and sustainability	Pitch Event	VTT	20	Students	-
19	26-27 September 2022	Parma	Il traduttore visibile	Pitch Event	UAB	60	Students, academics	https://dusic.unipr.it/it/notizie/gara-di-traduzione-inedita-il-traduttore-visibile-x-edizione#:~:text=La%20premiazione%20della%20traduzione%20vincitrice,non%20oltre%20venerd%C3%AC%2015%20luglio.
20	16th of September 2022	Online	Green deal Workshop	Participation in activities organised jointly with other EU project(s)	UNINET	80	Sister projects	-
21	4th of Octo	Barcelona	Nit de la Recerca	Pitch Event	UAB	15	Students	https://lanochedelosinvestigadores.esciencia.es/la-noche-2022/programa-bcn-2022/

	ber 2022							
22	19th of Octubre 2022	Bergen	MediaFutures Seminar: Media Accessibility: Current Solutions and Future Challenges	Pitch Event	UAB	20	academics, Students	https://mediafutures.no/event/mediafutures-seminar-media-accessibility-current-solutions-and-future-challenges-with-pilar-orero-professor-from-the-universitat-autonoma-de-barcelona/
23	20th of October 2022	Sabadell	Jornades Ciència Ciutadana	Pitch Event	BSC and 4sfera	30	General public	https://sites.google.com/view/jornades-ciencia-ciutadana/sessions/dimecres-19-doctubre?authuser=4#h.mgxdpim0wdhp
24	20th of October 2022	online	Ambassador Talk on "The European Green Deal at the local level - inspiring climate activities in regions and municipalities"	Participation in activities organised jointly with other EU project(s)	UNINET	50	Policy Makers	-
25	22th of October 2022	Rome	"Food and climate: a new challenge for the planet" - The New EU Green Deal - GreenSCENT project for EU Citizens	Conference	UNINET	100	Academics and researchers	https://www.sisclima.it/wp-content/uploads/2022/10/Agenda_cibo-e-clima_22ott.pdf?
26	7th of November 2022	India	Session 5 - Technology applications: XR and Immersive technologies	Pitch Event	UAB	300	Students, academics	tsdsi.in
27	27th of November 2022	Colombia	Seminario de traducción audiovisual en UAM (Colombia) / presentation	Workshop	UAB	30	Students	-
28	28th of Novemeber 2022	Online	OPEN Research Network - GreenSCENT presentation	Pitch Event	UAB	50	Students, academics	https://www.uantwerpen.be/en/research-groups/open-research-network/activities/past/
29	25th of November 2022	Serbia	International conference organised by UNSPMF Contemporary Trends in Tourism and Hospitality – CTTH 2022 in a season dedicated to international	Conference	UNSPMF	100	PHD candidates ESRs	https://ctth2022.pmf.uns.ac.rs/

			projects (environmental and tourism).					
30	30th of november 2022	Online	BlueCom. I Congreso Internacional de Comunicación para la Transición Ecológica y la Economía Azul	Conference	UAB	100	Academics	https://bluecom.uji.es/
31	12th of December 2022	Rome Lumsa University	project's presentation at MASTER OPEM Lumsa University	Master presentation	UNINET	25	Students and accademics	-
32	15th of December 2022	Rome Sapienza University	project's presentation at the Master Europrogettazione Sapienza	Master presentationr	UNINET	30	Students and accademics	-
33	12th of January 2023	Online	Dialogue on selected European Green Deal Policy Priorities Workshop	Workshop	UNINET	50	Green deal projects	-
34	14th of January 2023	Online	Organization of the workshop "Environmental Education for All"	Workshop	UAB	30	Students/ academics/ teachers	https://festival.learning-planet.org/event/environmental-education-for-all-the-greenscent-project/
35	16th of January 2023	Latina	ACLI Terra provinciale Assembly	Assembly	UNINET	20	Agricolture Association members	-
36	10th of February 2023	Online	[Thematic Group-DRR] Reg. Recommendations to Article 11 of CRPD for CRPD Committee	Workshop	UAB	50	Experts in Accessibility	-
37	23rd of February 2023	Vienna	Accessibility by default: three examples of EU funding: MILE, MediaVerse and GreenSCENT	Pitch Event	UAB	100	Students/ academics/ teachers	https://zeroproject.org/news

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38	23rd of February 2023	Vienna	Subtitles in 360º video Results from an eye-tracking experiment	Pitch Event	UAB	200	Students/ academics/ teachers	https://zeroproject.org/news
39	2nd of March 2023	Online	Super accessibility: immersive media for all / IAAP EU Series Webinar	Workshop	UAB	100	Experts in Accessibility	webinars@accessibilityassociation.org
40	16th of March 2023	Online	Future of Interface – and Accessibility Workshop		UAB	50	Academics	https://drive.google.com/file/d/17Oq_iV7G2glsU6D-sgNmz4UPhhJhx-L5/view
41	16th of March 2023	Online	Social Media Marketing Mastery 2023: Top tips to increase engagement and maximise exposure for Green Deal projects	Participation in activities organised jointly with other EU project(s)	UAB	70	-	-
42	8th and 10th of March 2023	France	GreenSCENT: an ongoing journey to citizen green education / Tmrees Conference	Pitch Event	UNINET	50	-	https://tmrees.org/index.php
43	10th of March 2023	Online	"International Conference on Technologies and Materials for Renewable Energy, Environment & Sustainability"	other	UNINET	150	Accademics-Researchers	https://tmrees.org/index.php/program
44	17th of March 2023	Rome	ACLI TERRA LAB	Conferencer	UNINET	50	Agricolture Association members Policy Makers and journalists	https://acliterra.it/acli-terra-lab-agricoltura-al-centro-il-16-e-17-marzo-a-roma-nel-meeting-nazionale-di-formazione-e-dibattiti-con-le-istituzioni/
45	29th of March 2023	Timisoara	Green Media Accessibility: Let's Join the Green Revolution	Conference	UAB	100	Academics	https://rseas.ro/13th-international-conference-on-professional-communication-and-translation-studies-timisoara-romania-30-31-march-2023/
46	14th of April 2023	Finland	KäTu Symposia on Translation/Interpreting and Sustainability	Pitch Event	UAB	70	Academics	https://katu-symposiumi.com/second-circular-and-call-for-papers-2023/
47	11th and 3th	Poland	Third Wrocław Terminological Meeting	Pitch Event	UAB	-	-	https://eleto.gr/en/diethnes-synedrio-orologias-termos-2023/

	of May 2023		TERMOS 2023					
48	17th of May 2023	online	Seminari al BNU-HKBU United International College	Pitch Event	UAB	50	Students	https://ddd.uab.cat/record/274430#:~:text=Seminari%20al%20BNU%2DHKBU%20United%20International%20College.%20Hong%20Kong%20(en%20l%C3%ADnia)
49	24th of May 2023	Zagreb	Nem initiative summit 2023 - Accessibility in 3 European projects	Pitch Event	UAB	100	academics	https://nem-initiative.org/nem-summit-2023-program/
50	25th of May 2023	Zagreb	Nem initiative summit 2023 - Green Media	Pitch Event	UAB	100	academics, Students, general public.	https://nem-initiative.org/nem-summit-2023-program/
51	25th of May 2023	Zagreb	Nem initiative summit 2023 - Green Media - Engaging EU citizens towards media sustainability awareness	Pitch Event	UNINET	100	academics, Students, general public.	https://nem-initiative.org/nem-summit-2023-program/
52	25th of May 2023	Online	Nem initiative summit - Subtitles in 360º video Results from an eye-tracking experiment	Pitch Event	UAB	100	academics, Students, general public.	https://nem-initiative.org/nem-summit-2023-program/
53	25th of May 2023	Zagreb	Nem initiative summit - Standardising Media Sustainability	Pitch Event	CSR	100	Academics, Students, general public.	https://www.rnib.org.uk/courses/inclusive-design/
54	21-22 June 2023	Glasgow	Inclusive Design for Sustainability Conference	Conference	UAB	-	-	https://www.rnib.org.uk/courses/inclusive-design/
55	25th of June 2023	online	American Blind Council - AD research	Pitch Event	UAB	-	-	https://acbconvention.org/?p=95

Table 7: Events joined by GreenSCENT's partners

We have successfully accomplished our goals of organizing and participating in a wide range of events that catered to various demographics. As we move forward, our next priority is to host an additional webinar that highlights the perspectives and voices of young individuals. Moreover, we are determined to enhance our reach by actively taking part in more fairs, enabling us to foster deeper connections with the wider public.

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3.3.3. Clustering

GreenSCENT is continuously seeking to build synergies and share lessons learned in the project with other relevant projects and initiatives that tackle topics related to the environment, citizen engagement and Green Deal. This involves interacting and exchanging knowledge, as well as exploring potential synergies and collaboration opportunities related to communication, dissemination, evaluation and monitoring, in an attempt to maximise the project's impact and foster peer learning. The main partners involved in clustering interactions are BSC, UNINETTUNO and UAB.

Some of the actions carried out in the last year to build synergies with other projects and initiatives include the following:

- Participated in several clustering workshops, organised by the European Commission and Green Deal Project Support Office (see more details below).
- GreenSCENT is leading a thematic cluster on air quality, involving another four projects within the same Green Deal call, established during the aforementioned workshops. Several meetings and interactions have been planned to date (see more details below).
- Held bilateral meetings with several projects (e.g. COMPAIR, I-CHANGE) to exchange knowledge and lessons learned.
- Established relationships with related citizen engagement initiatives (e.g. Science for Change)
- Interacted with and shared other projects' activities through the GreenSCENT social media pages and website.
- Mapped activities taking place in other projects that are related to specific topics of GreenSCENT (specifically air quality), in order to identify opportunities for collaboration

The actions above are ongoing, and will be complemented with further actions in the future. These include hosting a joint hybrid event with other projects and initiatives dealing with Green Deal, smart education, and environmental awareness (already underway, see more information below).

Initially, the organisation of two peer-learning workshops (M12-M36) to reach the broader community of practice was planned. However, these workshops are not currently deemed necessary, as several activities are already taking place where this community is reached in an even more profound and collaborative manner. These include the "air quality", "knowledge and citizens" and other project clusters, as well as several events organised by GreenSCENT. These include the following:

- International Green Digital Accessibility Conference, December 2022
- Environmental Education for All, January 2023
- Accessibility Meets Sustainability - GAAD, May 2023
- Skills for Clear Communication of Sustainability, Green Week, June 2023 (this event attracted 130 attendees, and was a collaborative effort between our project and other initiatives such as I-CHANGE, Rethink Action, MediaVerse, and Firelogue)
- Empowering and skilling citizens to become drivers towards a climate neutral and sustainable Europe through citizen science, Green Week, June 2023, (attended by around 120 participants, developed in collaboration with AURORA, I-CHANGE, SOCIO-BEE, COMPAIR, ECF4CLIM, and PSLifestyle projects and with the support of the Green Deal Support Office)

Clustering workshops

In February 2022, GreenSCENT participated in two clustering workshops of seven projects granted through the same Green Deal call (10.3). Through this workshop, GreenSCENT formed the "air quality cluster" along with another four projects, including ECF4CLIM, COMPAIR, I-CHANGE and SOCIO-BEE. The cluster is led by the BSC. Originally, the 7 projects funded under the H2020 Green Deal 10.3 call developed a "knowledge

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and citizen engagement" cluster, analysing practices, pilot sites and potential synergies among the seven projects. Currently, the Knowledge and Citizen cluster has been incorporated in the Working Groups managed by the Green Deal Support Office. In the Board of Coordinators organized in Brussels in June 2023, involving all the 73 projects funded by H2020 Green Deal call, GreenSCENT was presented in the plenary session in the "success stories" slot, and together with the GDSO presented its "External Pilot Protocol" approach in the Working Group "Knowledge and Citizen" session. In addition, GreenSCENT participated in several workshops, webinars and other activities organised by the Green Deal Project Support Office, which brings together 73 projects of the Green Deal call, and forms part of the knowledge and citizens cluster.

Air quality cluster

As part of the "air quality cluster", GreenSCENT has gathered information on the nature, timings, and geographical distribution of activities planned in each project related to specific topics (e.g. air quality), to help recognise opportunities for collaboration. Cluster activities included several joint or bilateral meetings, during which the projects involved shared the lessons learned, methodologies used and good practices in order to learn from each other and identify potential collaboration opportunities. Several topics were identified during the cluster meetings that are of interest to be explored further, such as sensors used and applications developed in the projects.Last year, two of the projects in the cluster (COMPAIR & SOCIO-BEE) have already held a joint workshop last year, during the EU Regions Week 2022. Currently, GreenSCENT has submitted an application to host a joint session together with COMPAIR during this year's EU Regions Week 2023.

Other interactions

The project partners have interacted or collaborated with several other projects and initiatives that deal with similar topics of interest. These include BioBeo, MULTIPLIERS, AIRSAFE, Firelogue, I-CHANGE, GIF, L2C, Rethink Action and Domestic Data Streamers, among others. Finally, GreenSCENT partners hosted a conference on Accessibility and Sustainability (the International Green Digital Accessibility Conference), which was attended by several researchers in the field.

Projects and initiatives identified

A non-exhaustive list of relevant projects and initiatives has been collected, with which GreenSCENT might potentially engage. The list is provided in the table below. Note that special attention is given to interacting with EU-funded projects under the same call, such as ECF4CLIM (also taking part in the air quality cluster). GreenSCENT has already interacted with many of the projects listed below.

Project	Full name / brief description	Relevant topics (not exhaustive)
ECF4CLIM	A European competence framework for a low carbon economy and sustainability through education.	Competence framework, education, citizen journalism, AR app, air quality.
COMPAIR	COMPAIR empowers citizen scientists across the EU with digital sensors to easily measure, monitor and act on local air quality data.	Citizen science and engagement, air quality, user research.
SOCIO-BEE	Wearables and drones for city socio-environmental observations and behavioural change.	Citizen engagement, environmental monitoring.
iChange	Encouraging behavioural change through citizen science, using sensors and monitoring the impact of their environmental footprint.	Air quality, sensors, citizen science and engagement.
AURORA	Achieving new European energy awareness and a new generation of near zero-emission citizens.	Citizen engagement, sensors, green energy.

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PSLifestyle	Co-creating positive and sustainable lifestyle tools with and for European citizens.	Citizen science and engagement.
RI-URBANS	Turning clean urban air into reality; innovative urban air quality monitoring.	Air quality, environmental monitoring.
PHOENIX	The rise of citizens voices for a Greener Europe.	Citizen engagement.
REAL_DEAL	Reshaping European advances towards green leadership through deliberative approaches and learning.	Citizen engagement and participation.
ACCTING	Advancing behavioural change through an inclusive Green Deal.	Behavioural change, society, sustainable economy.
SHARED GREEN DEAL	Social sciences and humanities for achieving a responsible, equitable and desirable Green Deal.	Society, sustainable economy.
FRONTSH1P	A front-runner approach for transition to a circular and resilient future.	Citizen engagement, circular economy.
PAUL (ICOS-Cities)	Pilot application in urban landscapes - Towards integrated city observatories for greenhouse gases.	Citizen engagement.
ILIAD	Integrated digital framework for comprehensive maritime data and information services.	Citizen science.
TRANSFORM	Territories as responsive and accountable networks of S3 through new forms of open and responsible decision-making.	Citizen science and engagement, society.
HOOP	Hub of circular cities boosting platform to foster investments for the valorisation of urban biowaste and wastewater.	Citizen science and engagement, behavioural change.
GIF	Multistakeholder design of training modules promoting sustainable approaches in EU fashion industries	Education, SMEs
L2C	Online modules for developing circular economy competences in EU SMEs	Continuous professional development, SMEs
AIRSAFE	Indoor life quality project, with activities in upper secondary schools in rural areas in South Italy, the project developed a specific pilot activities with air sensors and students experiments	Citizen science, students' participation
SToRIES	While the main technological objectives of StoRIES are linked to the energy storage development, it aims to provide training and education on socio-technical and environmental aspects of new developments and systems	Training for energy industries and professionals

Table 8: List of relevant projects and initiatives identified by GreenSCENT

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3.3.4. Organisation of GreenSCENT conferences

After a successful inaugural conference last year, we will organise the next Green Digital Accessibility (GDA) over the course of two days (30 November - 1 December). Similar to last year's conference, the goal of this year's conference is to offer a platform to bridge work in digital media, communication and sustainability, with a particular focus on the role of accessibility in the green transition. The conference will include workshops and talks that bridge the gap between accessibility and sustainability. Last year, we had over 30 experts in the fields of traditional and digital media, media accessibility, tourism, translation technologies and user organisations. This year, we have expanded our offering to include workshops and talks on topics as diverse as crisis communication for people with disabilities to sustainability of live music events. The GDA represents significant.

3.4. Monitoring: KPIS

In month 3 (M3), we have established a set of Key Performance Indicators (KPIs) to evaluate and assess the effectiveness of our Communication and Dissemination (C&D) strategy. These KPIs have allowed us to measure and track the overall performance of our C&D activities during the initial months of the project. By consistently monitoring these activities, we can evaluate our progress in achieving targets and identify the activities that have the greatest impact. The table below presents our KPIs and the objectives achieved in Month 17 (M17).

3.4.1. KPIs M17

Below is the list of the specific KPIs that the GreenSCENT consortium has identified and reached by M17:

Platform	**Indicator**	**Target M36**	**M17**
Website	Number of page visits	1000	7282
	News posted on the webpage	50	39
LinkedIn	Followers	300	373
	Posts	350	235
	Impressions	30'000	36'392
	Reactions	3000	1'551
Facebook	Followers	300	124
	Posts	350	216
	Impressions	20'000	7'626
	Reactions	2500	1249
Twitter	Followers	500	434
	Tweets	600	521
	Impressions	200'000	88'806

	Reactions	4000	1983
Youtube	Followers	50	22
	Videos	20	18
Newsletter	Distribution (people reached)	300	474
Conferences	Joined by GreenSCENT partners	15	49
Trade shows, Fairs	Joined by GreenSCENT partners	15	5
Events	Organised by GreenSCENT consortium	6	5
Partner publications (press releases, social media)	Publications by partners	30	196
Scientific publications	Articles elaborated inside the project	6	6

Table 9: Communication and Dissemination KPIs of the GreenSCENT project

We are nearing the achievement of all the established Key Performance Indicators (KPIs). In the upcoming months, we will focus on the following endeavours to further enhance our performance:

- Enhancing inclusivity by actively involving a wider audience.
- Augmenting engagement on our YouTube platform.
- Maximizing Facebook impressions and reactions.
- Increasing Twitter impressions.

These initiatives reflect our commitment to continual improvement and signify our dedication to connecting with a broader range of individuals. By pursuing these objectives, we aim to strengthen our presence and impact in a more diverse and expansive manner.

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4. Exploitation Strategy

4.1. GreenSCENT Exploitable Outcomes and Services

This section aims at providing an overview of the GreenSCENT project, its scope, and main outcomes in order to define the potential positioning of the proposed technology solutions.

4.1.1. GreenSCENT Scope and Objectives

This section will describe the context and high-level objectives that the GreenSCENT project aims to implement, in order to contextualise and clarify the outcomes and results that will derive from the research and development activities conducted.

GreenSCENT addresses the call LC-GD-10-3-2020 [2]: Enabling citizens to act on climate change, for sustainable development and environmental protection through education, citizen science, observation initiatives, and civic engagement, with an innovation action targeting Subtopic 1: Enabling citizens to act on climate change and for sustainable development through education.

Citizens must play an active role in addressing climate change and other human actions that harm the environment on land, air, and sea. To encourage citizens to adopt more sustainable patterns of behaviour, changes are needed in their behaviours as consumers. This can be achieved through education, awareness-raising, citizen science, observation and monitoring of environmental impacts, civic engagement, and social innovation. The direct involvement of citizens and communities is essential to promote climate action and protect the environment, encouraging them to change their behaviour and mindsets, reduce their carbon and environmental footprint, and take action at the individual and collective levels. This will result in a more sustainable lifestyle and a better relationship with the environment. Although the main objective of GreenSCENT is to create a comprehensive Competence Framework, the project activities aim to maximize citizen involvement and engagement. GreenSCENT will offer a variety of activities that include different levels of engagement, from informative and awareness-raising methods to active observation, data collection, and processing through simulations, mobile apps, collaborative project works, and open innovation challenges. SCENT's participatory, experimental, and hands-on approach will encourage behavioural changes, acceptance, and adoption of inputs from the EU Green Deal.

Another important issue is the focus on enhancing environmental awareness among the younger generation through education and other forms of youth engagement. Students and pupils have the potential to act as advocates for climate action, sustainable development, and environmental protection by sharing their knowledge, experiences, and involvement with their families, local communities, public and private decision-makers, as well as through communication and social media. According to the European Green Deal Communication, schools, training institutions, and universities are well-positioned to engage with pupils, parents, and the wider community on the changes required for a successful transition to a green economy. The primary focus of GreenSCENT is the youth, particularly in the context of education. The project involves schools and universities as partners and supporting institutions, with the aim of testing the first release of the GreenSCENT framework in educational activities. The students will become knowledge amplifiers by sharing what they have learned with their friends, peers, parents, teachers, and contacts.

Considering this scope and the expectations on these issues within the European Union context, the main objectives of the GreenSCENT project can be summarized as follows:

- **Design and develop the GreenComp Competence Framework by involving multiple stakeholders**. The project aims to provide an initial version of the GreenComp framework as a crucial

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objective to enable testing and validation activities in the second phase of the project. This release will include course design, skill cards, training kits, experiments through demonstrators, assessment, and other necessary components.

- **Challenge and change existing beliefs,** overcome doubts, and **enhance the knowledge and understanding of citizens, pupils, students, and society** as a whole through **educational and experimental activities**. This will be achieved through inclusive and accessible methods of citizen science and co-creation, which will encourage participation and engagement in the project. SCENT aims to motivate and engage students and citizens to become passionate about climate, sustainability, and environmental protection by providing them with opportunities to increase their knowledge through hands-on experimentation. Education is a central focus of the project, supported by technology, open innovation challenges, and the use of a crowdsourcing mobile app to collect and process data.
- **To include digital competencies in the GreenComp Competence Framework** to illustrate the **connection between the Green and Digital transitions**. The IT system plays a central role in the educational and co-creative processes of the GreenSCENT project. The aim is to engage young people, students, and citizens in identifying environmental issues and examples of environmentally friendly behavior. The collected data, metadata, and other related content will be stored in a central content store, where citizens can enrich them semantically. The collected content will be available for direct search through a user-friendly interface and semantic APIs, making it accessible to external tools.
- **To facilitate GreenComp adoption and implementation.** GreenSCENT aims to develop a comprehensive and user-friendly training ecosystem with a variety of training tools and materials to ensure project resilience. During phase 2 of the project, which involves the implementation of the GreenComp training and demonstrators, formal educational contexts will be used.
- To demonstrate the **effectiveness of the GreenComp Framework by implementing a series of digital and physical demonstration activities in real-life situations** using a network of schools, community organizations, and public administrations. The goal of GreenSCENT is to create plans for each Pilot based on the 8 Green Deal Focus Areas, with different levels of engagement that involve end-users in the co-creation process. These Pilots will serve as a means of testing and validating the GreenComp framework, while also providing feedback to improve the framework. Engaging students and citizens will be crucial to the success of the Pilots, which will utilize a variety of innovative tools and methods including digital ones like the SCENT Platform, Mobile app, AR platform, as well as physical tools like the Climathon, air pollution sensors, microplastic monitoring sensors, and citizen engagement assemblies. The aim is to maximize learning and behavioural impacts of educational activities through the Pilots.
- **To increase the influence and effectiveness of GreenComp** and other important project results through various activities, including **outreach, targeted dissemination, clustering, and exploitation**.

4.1.2. Main Project Outcomes

The following table summarises the main outcomes resulting from the GreenSCENT project, identifying the relevant activities and responsibilities, and giving an overview description of the outcomes.

Outcome	Description	Main Responsible
GreenSCENT Competence Framework	A competence framework, developed in a lifelong learning perspective, therefore covering all educational levels, addressing the 8 focus areas of the Green Deal. It provides descriptions for each competence, and statements describing	UNINET

	Knowledge, Skills and Attitudes expected for all competences	
GreenSCENT Knowledge Graph	A Knowledge Graph providing an interactive representation of the Competence Framework. It is easily explorable, and it allows further expansions (for example, now it is already linked with JRC's GreenComp framework)	UNINET
GreenSCENT Competence Questionnaire	An assessment tool, based on validated psychological scales, assessing both awareness, competences, and implicit attitudes of users/participants towards pro-environmental behaviours.	UNINET
Educational format/activities	Course design and implementation, putting in practice specific competences defined in the GreenSCENT competence framework	UNINET
Environment Monitoring App	The outcome is a mobile app (iOS and Android). The main features are: • to allow registered users to create geo-localized multimedia reports • to allow the monitoring and updating of existing reports • to manage discussions between registered users about the reports.	ENG
Citizen Journalism	The outcome is a web app. The main features are: • to show to registered users the current reports active on the territory • to allow the area managers to approve/edit/delete the reports • to moderate the discussions.	ENG
Interactive Documentary	The outcome is a web tool. The main features are: • to allow registered users to upload and store multimedia items • to allow registered users to use multimedia items to create immersive experiences to be enjoyed via browsers/mobile/VR • to enrich immersive experiences with multimedia annotations (audio tracks, picture in picture, video in picture, etc...).	ENG
Academic articles	The outcome are academic articles. Share knowledge on different aspects of Smart Accessible environmental education and on Green Digital Accessibility	UAB
Blog articles	The outcomes are blog articles. These articles target different audiences and use simpler language to discuss the project's activities and Smart Accessible Environmental Education.	UAB
Green Digital Accessibility (GDA) Conferences	The outcomes are GDA Conferences. Conferences dedicated to the exchange of knowledge and ideas on Green Digital Accessibility, facilitating collaboration and networking opportunities in the field of environmentally conscious and inclusive education	UAB
GreenSCENT Storytelling toolkit	The outcome is a storytelling toolkit. A toolkit designed to empower students to create their own environmental stories and express their agency.	UAB
Organisation of GreenSCENT webinar(s)	The outcomes are webinars aimed at the general public to raise environmental awareness and share information about the GreenSCENT tools, with the goal of reaching a wide audience across different countries.	UAB

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Participation in High level events	The outcome is the participation in High level events. Active participation in high-level events elevates the visibility of the project, ensuring its recognition and impact in the European Union's environmental landscape, including influential bodies such as the EC Commission.	UAB
Book	The outcome is a GreenSCENT book. The creation of a comprehensive book encompassing the project's diverse educational activities and tools, serving as a valuable resource for educators, researchers, and stakeholders. This book not only shares insights and best practices but also ensures the resilience and longevity of the project's impact in the field of environmental education.	UAB
Participation in Conferences	The outcome is the participation in conferences. Active engagement in conferences facilitates knowledge exchange and dissemination of expertise in Smart Accessible Environmental Education. Through presenting research findings, innovative approaches, and successful case studies, the project gains visibility and credibility among academic experts, practitioners, and policymakers. These conference interactions foster collaborations, discussions, and networking opportunities, promoting the project's goals and initiatives within the academic and environmental communities.	UAB
Special Issue with Universal Access in the Information Society	The outcome is the creation of a Special Issue titled "Universal Access in the Information Society." The primary aim of this special issue is to guarantee the resilience of our GreenSCENT project through the transfer of knowledge. By focusing on the concept of "green" digital accessibility, we seek to explore how sustainability can be integrated into the field. Through this collection, our objective is to address initial challenges and propose potential research avenues that will actively contribute to the transition towards a carbon-neutral society, benefiting all individuals involved.	UAB
Cleanair@schools monitoring kit	The outcome is a set of: • Educational material on air quality and air pollution: videos, reading material, etc. • Instructions of how to use the kit • Monitoring material: passive samplers, holders, and labels • Recommendations on educational exercises and reporting	4SFERA INNOVA
Cleanair@schools web interface	The outcome is a web app for the schools to plan the monitoring of air pollution around their school. The main features of the platform are: • To allow each school to plan and pin in a map the locations of the monitoring points • To create and allocate groups of monitoring points to groups of students The information defined in the web interface will feed the mobile app.	4SFERA INNOVA
Cleanair@schools app	The outcome is a mobile app (iOS and Android). The main features are: • To allow each school to log in and visualise the monitoring locations previously defined in the web interface • To allow the registration of the data of exposure and collection for each monitoring	4SFERA INNOVA

	point during field work: date/time, location, pictures, etc • To extract exposure data in an excel file for the analysis of the passive sensors • Visualise results after analysis (maybe)	
GreenSCENT Collaborative Innovation platform hosted by Agorize	Leveraging the capabilities of the Agorize platform, which enables effective communication and collaboration between participants. The platform serves as a hub for idea generation, project updates and interaction with the network of students across Europe, fostering a sense of community and shared learning. The platform is one of the main tools to disseminated information about the challenge to a larger number of individuals, leveraging on the communication channels that the platform provides, creating awareness and generating interest.	AGO
Social Media Presence	Agorize has established a strong presence on various social media platforms, such as Facebook, Twitter, Instagram, and LinkedIn. Regular posts and updates are shared to inform the audience about the project development and the challenge on the platform. Through Agorize's communication actions, the reach of the challenge was successfully expanded to a broader audience, resulting in increased participation and engagement.	AGO
Press Releases	Agorize has released online articles to communicate events, and achievements of the GreenSCENT project. This release generates reaction and visibility to the GreenSCENT project.	AGO
Collaborative Partnerships	Agorize has established partnerships and integration with schools, to enhance the dissemination and communication efforts. Students participate in the challenge through these integrations. As a result, we have successfully attracted a greater number of participants, thereby maximizing the potential for innovative ideas and solutions.	AGO
Interactive Documentary (Guidelines)	UNSPMF will develop guidelines for the use in higher educations.	ENG - development of the app; UNSPMF training materials development
Microplastics (Guidelines)	UNSPMF will develop guidelines for the use in elementary schools and help teachers.	

Cleanair@schools (Educational materials)	UNSPMF will develop educational materials specifically targeted at secondary schools and elementary schools, aimed at promoting a change in behaviour related to air pollution.	4SFERA INNOVA- development of the app; UNSPMF - educational materials
Climathon	UNSPMF will actively assist in developing a comprehensive syllabus for elementary schools to address the teaching of climate change.	CRA and UNSPMF
Instructional co-design workshops (training of trainers)	The outcomes of the instructional co-design workshops constitute of the workshop documentation reporting the insights generated during the workshop. It provides a reference for future iterations, revisions, and refinements of the instructional design process regarding the demonstrators. The workshops also foster collaboration and knowledge exchange among researchers, experts, and the school community (i.e., principals, teachers, students). Teachers worked on some initial use cases, prototypes, mock-ups related to the SCENT demonstrators (Interactive documentary, SCENT Augmented Reality application and CleanAir@Schools where 2 school principals, 10 teachers and 10 students participated).	UNINETTUNO 4SFERA BSC EA
Preparatory training (for students)	The outcomes of these preparatory training (also in the form of co-design workshops) are focused on the knowledge and deeper understanding gained by students regarding the demonstrators. Through these activities, students acquire relevant information, concepts, and theories related to the activities. Students worked on some initial use cases, related to the Interactive documentary platform and the Augmented Reality application (15 students have already participated).	UNINETTUNO BSC EA
Participants to pilots in formal education context (teachers/professors/students)	Throughout the piloting activities, documentation is the main outcome, including the reporting of the activities, summaries, and evaluations. These outcomes capture the entire implementation plan and process, opportunities, barriers and challenges encountered, adaptations made, and lessons learned. These reports will consist of the main driver for future planning and communication with education stakeholders. It is expected that during the planning and implementation phase at Ellinogermaniki Agogi approximately 200 – 300 students, 7 teachers and 2 school principals will participate.	EA
New practices adopted by the education	This outcome includes the opportunities and the way of integrating the SCENT demonstrators to	EA

	the national curricula. These outcomes will be reported as part of the implementation phase where the school will highlight how they integrated the demonstrators as part of the curriculum and/or the environmental education programmes.	
People engaged by indirect contact (families, friends etc.)	This outcome is also referring to the implementation phase and it will be part of the analytical documentation on the piloting activities at schools and universities. For instance, with the Cleanair@Schools demonstrator, students' parents will be engaged to the implementation process (approx. 100 - 150 students will participate).	EA
Participants (students and citizens) assessed against GreenComp	One of the key outcomes of the piloting activities is the collection of data and assessment results. This includes quantitative data including attendance records and pre- and post-questionnaires, as well as qualitative data observations regarding the level of participation and motivation of the students. This data provides evidence of the impact of the pilot implementation phase on the students learning outcomes, engagement and the development of students' knowledge-behavioural changes.	EA
Book	The outcome is a GreenSCENT book. The creation of a comprehensive book encompassing the project's diverse educational activities and tools, serving as a valuable resource for educators, researchers, and stakeholders. This book not only shares insights and best practices but also ensures the resilience and longevity of the project's impact in the field of environmental education. Ellinogermaniki Agogi compiles Chapter 1: Environmental Education and Chapter 12: School sustainability education best practices.	UAB EA
Green Digital Accessibility (GDA) Conferences	The outcomes are GDA Conferences. Conferences dedicated to the exchange of knowledge and ideas on Green Digital Accessibility, facilitating collaboration and networking opportunities in the field of environmentally conscious and inclusive education. Ellinogermaniki Agogi participated in the first GDA Conference presenting: 'Schools as Living Labs for the New European Bauhaus'.	UAB EA
Blog articles	The outcomes are blog articles. These articles target different audiences and use simpler language to discuss the project's activities and Smart Accessible Environmental Education.	UAB EA

	Ellinogermaniki Agogi has contributed by preparing the blog article entitled: 'Transforming schools to innovation hubs towards sustainability challenges'	
Organisation of GreenSCENT webinar(s)	The outcomes are webinars aimed at the general public to raise environmental awareness and share information about the Greenscent tools, with the goal of reaching a wide audience across different countries. Ellinogermaniki Agogi participated in the webinar "Environmental Education 4 All: The GreenSCENT project" introducing the topic of: 'Youths: The Green Changemakers' (along with DBT)	UAB EA
Citizen Engagement Methodology	• Responsible Research and Innovation (RRI) based comprehensive citizen engagement methodology that acts as a foundational tool for the training, education and citizen science pilots and demonstrations. • RRI evaluation framework. This is integrated into the methodology to ensure the alignment of the process and its outcomes with the expectations and needs of GreenSCENT and its stakeholders.	VTT
Circular Design Course	• This course will provide an in-depth understanding of circular design principles, strategies, and applications specifically in manufacturing industries. • Students will develop the ability to analyse, create, and implement circular design solutions for a sustainable and competitive manufacturing sector. • The course will consist of on-line training materials, case studies, workshops, and a final project.	VTT
Impact Assessment Framework	• Methodological framework for assessing impact of the citizen science activities in the project	VTT
Environment monitoring app (Training Materials)	RGSMART will develop guidelines for the use in secondary education	ENG- Development of the app RGSMART- Training Materials
Citizen journalism/Greenverse (Training Materials)	RGSMART will develop guidelines for the use of the app in secondary education.	ENG- Development of the app RGSMART- Training Materials
Interactive Documentary (Training Materials)	RGSMART will develop guidelines for the use in secondary education	ENG - Development of the app UNSPMF Training Materials development RGSMART Training Materials
Climathon (Training Materials)	In order to address the teaching of climate change in primary schools, RGSMART will actively contribute to the creation of a thorough curriculum.	CRA and UNSPMF RGSMART – Training Materials

GreenSCENT augmented reality app (Training Materials)	RGSMART will develop guidelines for the use in secondary education	BSC RGSMART- Training Materials and guidelines
Youth Assemblies	• 56 young people are involved in the development of the GreenCOMP curriculum, the pilots and demonstrators. • The young people's ideas, insights and feedback are incorporated and actively used to improve the education and the teaching formats. • The participating young people's ability to actively participate and contribute to citizen engagement processes is increased and their democratic empowerment is enhanced. • The participants achieve behavioural changes towards more sustainable lifestyles and gain the ability and knowledge to influence family and friends around them	DBT
Testing and Experimentation	• Raising awareness on different topics such as Climate, Pollution and possible actions of prevention. • Teaching our students about new technology developments and possible input that they may have • Encouraging participation at all levels and encouraging each student to think creatively, through small projects age appropriate • Test different products proposed by our partners to finally contribute to a European Competence Framework • Extend our recycling programme and promote a sustainable environmental education within our community	RST
Air Quality AR App	The outcome will be a webapp. The main features are: • Allow students to learn the basic concepts of air quality • Allow the exploration of Augmented Reality Air Quality Index maps • Allow the students to win trophies every time they explored and assess a lesson	BSC
Skillcard & Exams	Skill cards of different levels and certification (ECCEL)	ECQA & CSR company

Table 10: Main GreenSCENT Exploitable Outcomes

4.2. Market Analysis for GreenSCENT Framework and Solutions

In this section, an initial market analysis is proposed in order to understand the specific needs and requirements of the target audience, as well as assess the existing technologies, solutions, and gaps in the market. Analysing the market also enables the identification of potential competitors and their offerings. This allows for evaluation of their strengths, weaknesses, and market positioning. Market analysis also aids in identifying potential risks and challenges associated with introducing the solutions proposed in GreenSCENT. Understanding market dynamics, regulatory requirements, and potential barriers to entry, enables the development of strategies to mitigate risks and ensure successful adoption of project solutions.

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4.2.1. Project Market Overview and Relevant Sectors

A market overview and the analysis of target sectors of the GreenSCENT framework is crucial to provide valuable insights into stakeholders/customer needs, competition, market segmentation, pricing strategies, and risk assessment. These insights allow for the development of a more effective and successful solutions.

Therefore, the following sections will describe the main sectors related to GreenSCENT, in qualitative and quantitative terms. The main objective of this investigation is to realize the attractiveness of the market from a financial standpoint and to ensure that the market is large enough to build a sustainable business.

4.2.1.1. Environmental Protection

Environmental protection refers to actions taken to safeguard the natural environment and prevent harm to it. The preservation of the environment is vital for maintaining the health of the planet and the well-being of all living organisms, including humans. Environmental protection encompasses several critical elements, including the conservation of natural resources, pollution prevention, biodiversity conservation, sustainable development, and environmental education. It involves using natural resources such as water, forests, and minerals in a sustainable manner to ensure they are available for future generations.

Pollution prevention measures include implementing pollution control strategies, using cleaner technologies, and promoting the use of renewable energy [3]. Biodiversity conservation entails protecting and preserving diverse species and ecosystems, including habitats and ecosystems, through measures such as habitat restoration and conservation. Sustainable development is the balance between economic development and environmental protection to ensure that natural resources are used in a way that does not compromise the needs of future generations. Environmental education aims to promote awareness and understanding of environmental issues and encourage individuals and organizations to take action to protect the environment. Environmental protection is essential to achieving a sustainable future for the planet and all its inhabitants. It requires the collective efforts of individuals, organizations, and governments to take action and implement policies that promote environmental sustainability [4].

The environmental protection sector includes several business activities, such as waste management (collection, transportation, disposal, and recycling of waste), renewable energy production (from sources like sun, wind, water, and biomass), water treatment (cleaning and purification of sewage and polluting water), green technologies development and production (innovative technologies for pollution reduction, such as environmental monitoring systems, air purification systems, and emission control technologies), sustainable agriculture (food production using sustainable farming practices like organic farming and reduced use of chemical fertilizers and pesticides), sustainable building (design and construction of buildings that use eco-friendly materials, energy-efficient technologies, and minimize environmental impact), and sustainable mobility (production of low environmental impact vehicles such as electric cars, electric bikes, and low-emission public transport systems). The environmental protection sector is rapidly expanding due to increasing environmental awareness and the growing demand for sustainable solutions [5].

The following numbers and statistics are provided to understand the crucial importance that the environmental protection sector has, also in terms of business in the global and European market.

A report from insurance giant Swiss Re predicts that the cost of not taking action on environmental issues could exceed $20 trillion by 2050 [6]. In 2020, the global environmental protection industry was valued at around $2.2 trillion [7] . Reports from the World Wildlife Fund indicate that habitat destruction, overhunting and fishing, and pollution are among the main causes of the loss of 60% of wild animal species since 1970 [8]. Another IPBES report shows that 75% of the Earth's land has been altered by human activity [9] .The European Environment Agency reports that air pollution is responsible for about 400,000 premature deaths each year in the European Union. The global recycling industry is expected to reach a value of approximately $450 billion by 2025. A report from the Organization for Economic Cooperation and Development warns that if climate change mitigation measures are not implemented, the global economic cost of climate change could reach

$54 trillion by 2060. These numbers highlight the crucial importance of the environmental protection sector and the need for a worldwide commitment to tackle environmental challenges.

According to a survey conducted by Statista Consumer Insights in 38 countries [10], only a minority of respondents considered environmental protection a significant issue for their respective countries. Respondents from Brazil were the most concerned about the environment, followed by those from Mexico, Peru, and Colombia. In Asia, Indonesians ranked the issue as highly important, while Indians and Chinese were around the survey average, and Pakistanis ranked lower in the comparison. However, in countries where environmental protection was considered a major issue, many other issues were also viewed as highly problematic. Climate change was typically considered more important than environmental protection in developed countries, while the opposite was true in developing countries. European countries had varying levels of concern, with Italy having the highest percentage of respondents considering environmental protection a major issue at 44%, and only 23% of respondents in Ireland. In the United States, 27% of respondents considered the issue as major, ranking it 10th among 20 issues, tying with civil rights and immigration.

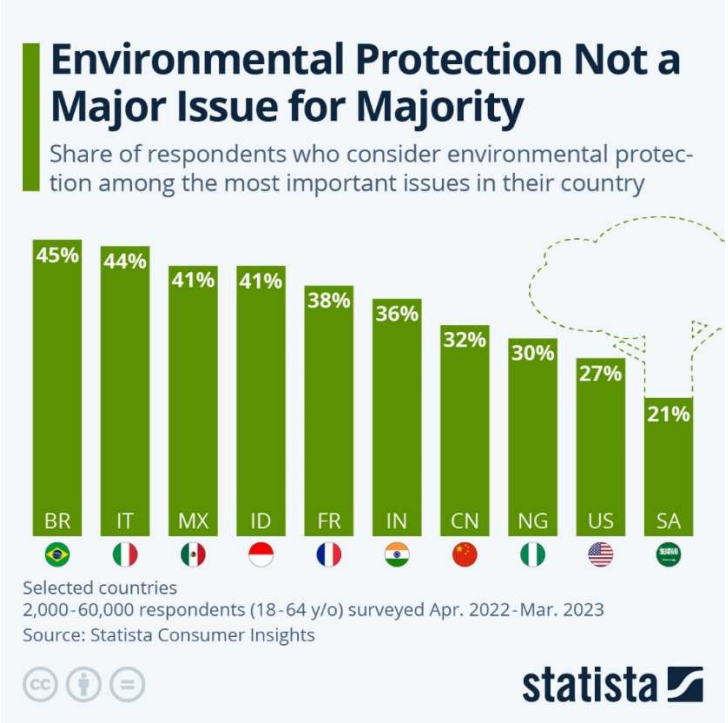

Figure 7: Statista Survey on Environmental Protection

From 2006 to 2021, the European Union's spending on environmental protection grew by 54%, while its percentage of GDP stayed consistent throughout the entire period. As of 2021, nearly half of the total national expenditure is allocated towards waste and wastewater management.

In 2021, the EU invested €59 billion in assets that are critical for providing environmental protection services, such as wastewater treatment plants, waste transportation vehicles, land acquisition for creating natural reserves, and cleaner equipment that produces fewer polluting emissions [11].

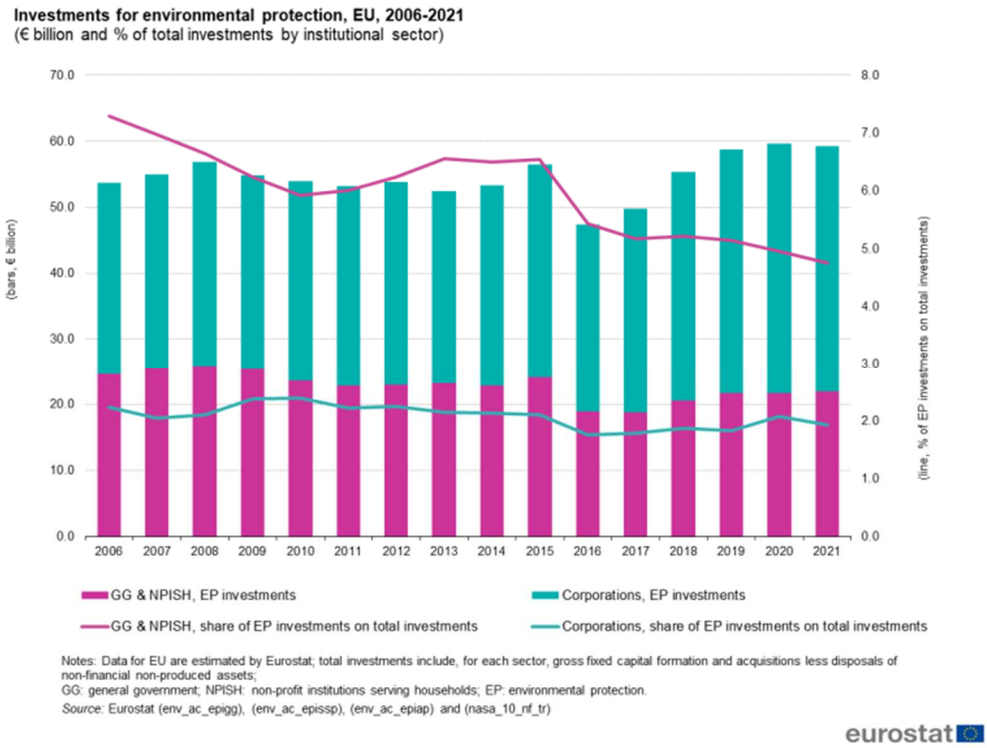

Figure 8: EU Investments for Environmental Protection – 2006- 2021

In 2021, the European Union's public sector spent €119 billion on "environmental protection," which represented 0.8% of the EU's gross domestic product (GDP).

Government investments in the environmental protection sector are important for several reasons. Firstly, they can help to promote sustainable economic growth and create new jobs. Additionally, they can support the development of new technologies and innovations that reduce environmental impacts and improve resource efficiency.

Investments in digital technologies, such as sensors, data analytics, and artificial intelligence, can also play a key role in environmental protection. These technologies can enable more efficient and effective monitoring of environmental quality, facilitate the development of new environmental solutions, and support the transition to a more circular economy. Moreover, government investments in the environmental protection sector (Figure 9) [12] can also help to address the urgent challenges of climate change and biodiversity loss, which require rapid and coordinated action at a global level.

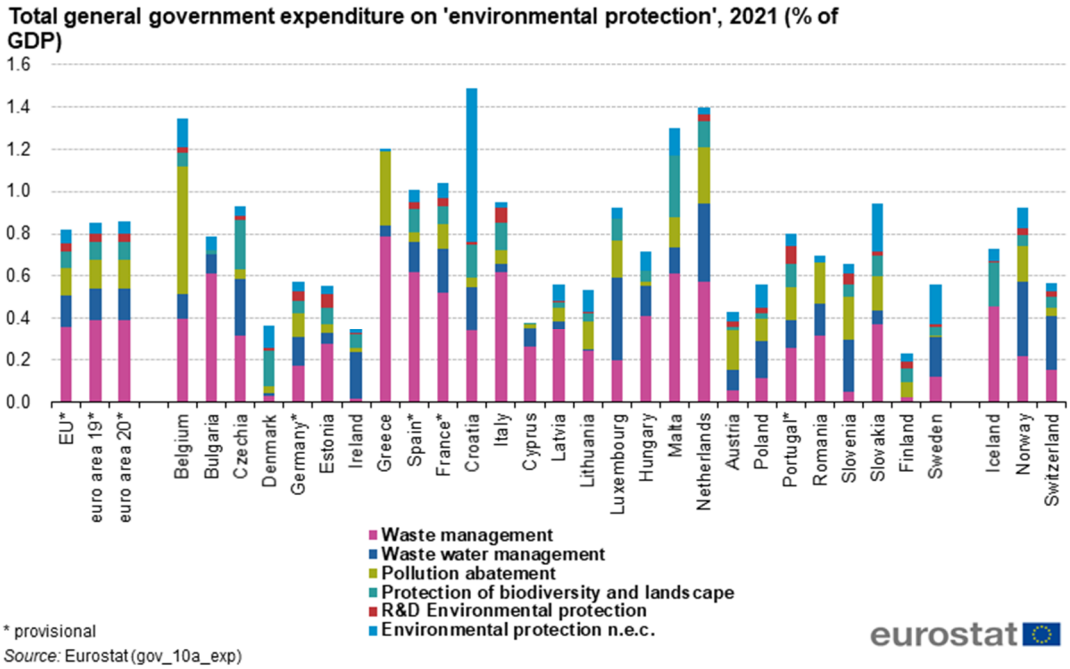

Figure 9: EU Governments Expenditure on Environmental Protection 2021

Moreover, government investments in the environmental protection sector can also help to address the urgent challenges of climate change and biodiversity loss, which require rapid and coordinated action at a global level. In this regard, the Green Deal is a plan of action launched by the European Union with the aim of making the economy of the EU sustainable and achieving carbon neutrality by 2050. One of the key pillars of the Green Deal is to mobilize investment, both public and private, in the environmental protection sector to enable the transition towards a green economy. The Green Deal aims to provide funding for initiatives such as energy-efficient buildings, renewable energy, sustainable agriculture, and transportation, among others. The ultimate goal is to create a more sustainable future for Europe and the planet as a whole.

4.2.1.2. Crowdsourced Environmental Monitoring

Environmental monitoring refers to the process of evaluating and analysing the state of the environment, which includes air, water, soil, and living organisms, to recognize patterns, changes, and potential hazards. Crowdsourcing is the act of involving a large group of individuals to gather data [12]. This can involve submitting text-based surveys or reporting events through an application. For instance, if people have concerns regarding water quality, they can use an app to report visible pollution by sharing photos or submitting them online.

The areas covered by environmental monitoring are vast and include a variety of fields such as air quality, water quality, soil quality, biodiversity, and climate monitoring. Air quality monitoring aims to determine the concentration of pollutants like nitrogen dioxide, particulate matter, and ozone, in the air to assess the influence of human activities like industrialization and transportation on the environment. Water quality monitoring involves the evaluation of the physical, chemical, and biological properties of water bodies such as rivers, lakes, and oceans, to measure water quality and identify possible contaminants [13]. Soil quality monitoring involves measuring the physical and chemical characteristics of soil, such as texture, pH, and nutrient content, to assess soil health and identify potential contaminants [14]. Biodiversity monitoring includes keeping track of the population and distribution of various species, including plants and animals, to evaluate the effect of human activities on ecosystems and identify conservation priorities.

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Overall, the scope of environmental monitoring is broad, and it plays a critical role in identifying environmental problems, informing policy decisions, and promoting sustainable development.

Crowdsourced environmental monitoring refers to the process of engaging volunteers or citizen scientists to collect and share environmental data. This approach involves using mobile devices, such as smartphones or tablets, to collect and share data on various environmental parameters, such as air quality, water quality, and biodiversity. Crowdsourced environmental monitoring can help to complement traditional monitoring methods and provide more extensive and real-time data on environmental conditions [15].

One of the key advantages of *crowdsourced environmental monitoring* is its ability to engage and empower individuals and communities to take an active role in environmental protection. By providing access to environmental data and information, crowdsourcing can raise awareness and promote citizen action on environmental issues. This approach can also help to identify environmental problems and inform decision-making by governments and other stakeholders.

Crowdsourced environmental monitoring can be facilitated through various platforms, such as mobile apps or web-based platforms, that allow individuals to report and share data in real-time. These platforms can also provide tools for data visualization and analysis, making it easier for individuals and organizations to understand and interpret environmental data.

However, there are some challenges to crowdsourced environmental monitoring, including issues related to data quality and reliability. To address these challenges, it is essential to establish quality control measures and ensure that data collection methods are scientifically sound and consistent. Additionally, it is necessary to provide appropriate training and support for volunteers to ensure that they can collect and report data accurately and effectively. GreenSCENT's main objective is to ensure as far as possible that these parameters are respected.

Overall, *crowdsourced environmental monitoring* can be a valuable tool for promoting environmental awareness and engagement, as well as providing real-time data on environmental conditions. It is an evolving field, and continued innovation and collaboration will be necessary to fully realize its potential.

After the network of people (social network), the network of data (big data) and the network of things (Internet of Things), an ecological network has emerged in recent years, called the Internet of Everything, capable of connecting entire ecosystems and thus putting us in relation with every element of nature. This is a real revolution capable of profoundly altering our relationship with the environment.

The *crowdsourced environmental monitoring* sector encompasses multiple business opportunities, such as the creation and sale of environmental monitoring devices for the public, the provision of environmental monitoring services for government organizations or private companies, the development of environmental monitoring platforms that connect citizens to researchers and organizations, the development of software for analyzing collected environmental data, and so on. Additionally, Crowdsourced Environmental Monitoring can also offer business opportunities in the field of environmental information and education, such as the creation of educational content on environmental issues and their dissemination through online channels [16].

4.2.1.3. Education

The education market sector refers to the industry involved in providing educational services and products to students, educators, and institutions. This sector includes both public and private entities and covers all levels of education, from pre-kindergarten to higher education and beyond.

The education market sector is a significant industry, with a global market value estimated at over $6 trillion in 2020 [17]. It includes a wide range of products and services, such as textbooks, digital learning resources, e-learning platforms, educational software, testing and assessment tools, and professional development services for teachers.

One of the key drivers of the education market sector is the increasing demand for education globally, driven by population growth, rising incomes, and the need for new skills and knowledge in a rapidly changing economy. Additionally, advances in technology and the increasing adoption of digital learning tools have transformed the education market, creating new opportunities for innovation and growth.

The education market sector is also heavily influenced by government policies and funding, as well as societal trends and changing education needs. For example, the COVID-19 pandemic has led to a significant shift towards online and remote learning, accelerating the adoption of digital learning tools and platforms.

The education sector in Europe is quite large and diverse, with a wide range of institutions, programs, and funding models. The size of the sector can be measured in a variety of ways, including the number of students enrolled, the number of teachers and staff employed, and the amount of funding allocated to education.

In the year 2020, there were a total of 93.3 million individuals enrolled in 6 different levels of education in the EU, which include pre-primary, primary, lower, and upper secondary, post-secondary non-tertiary, and tertiary education [18].

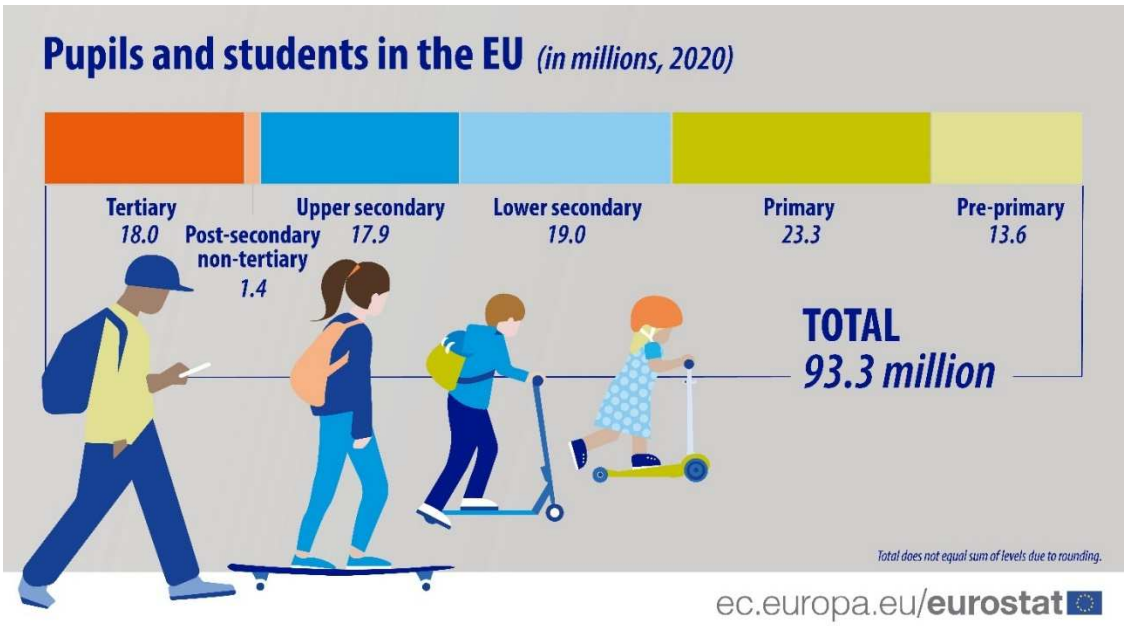

Figure 10: Pupils and students in EU- 2020

In terms of staffing, Eurostat data shows that there were over 9 million teachers and other education personnel employed in Europe in 2020. The largest number of education personnel were employed in primary education, followed by secondary education and higher education.

In terms of funding, the education sector in Europe is supported by a combination of public and private sources. Eurostat data shows that general government expenditure in the EU on education amounted to €701 billion or 4.8 % of GDP in 2021 (Figure 11) [19].

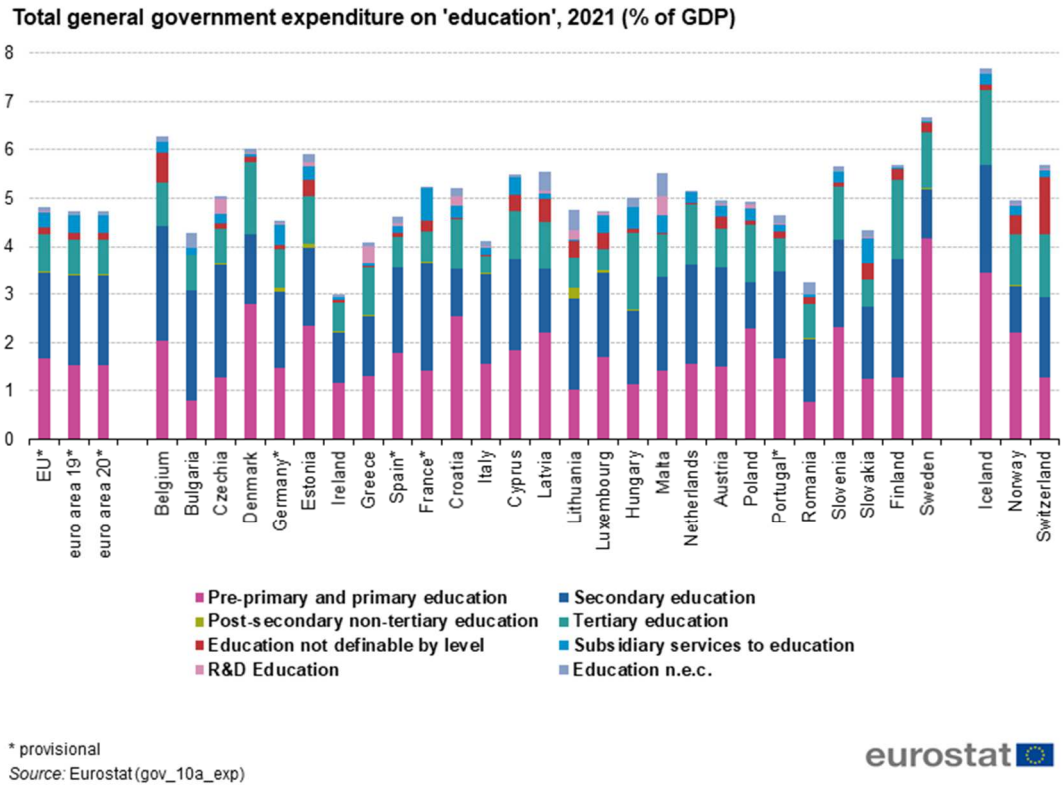

Figure 11: EU Governments Expenditure on Education - 2021

This represents a significant investment in education, reflecting the importance that European countries place on providing high-quality education and training to their citizens.

Besides the public education sector, there is also an education industry, which accounts for a large share of this market. Below we briefly see how this industry is organised and what its objectives are.

The education industry encompasses a range of organizations and enterprises that offer products and services designed to improve the overall quality of education in society. Its role in supporting public education has become increasingly significant as it meets the demand for products and services that both complement and supplement basic education services.

This sector can be broadly categorized into four main groups:

- **Schools/Service Providers**: This includes organizations that provide primary and secondary education, alternative/special education services, education management organizations, charter schools, virtual schools, and proprietary schools.
- **Supplemental Education Service Providers**: These organizations provide higher education, vocational education, learning centers, tutoring services, and assessment services.
- **Educational Products & Services Sector**: This sector involves the production and supply of educational materials and products, including educational products, publishing, and supplemental products.
- **Education Support Services Sector**: This sector offers support and ancillary services to the education industry, including education consultants, education information and research, education investment services, education policy specialists, and technology services.

It is now necessary to underline that digital education is closely connected with environmental education. They are connected because nowadays we can no longer talk about the environment, forests, climate, without digital

data, i.e., without the sensors, big data, environmental databases, geographic operating systems, algorithms and processors that enable aggregation and analysis; that connect us and reveal to us every day the environment and everything we call nature.

Market insights: Apps and digital solutions

The Education segment contains apps that enhance the learning process, typically by way of interactive gamified activities. The vast variety of educational content and methods enable people of different ages to increase their skills and knowledge. Below are some key indicators for defining the European digital market in education.

It is projected that the Education segment's total revenue will reach US$0.88bn by 2022, with an expected annual growth rate (CAGR 2022-2027) of 9.98%. This growth rate is expected to result in a projected market volume of US$1.54bn by 2027. Revenue from in-app purchases (IAP) is projected to reach US$410.40m, while revenue from paid apps is expected to reach US$40.88m in 2022. Furthermore, advertising revenue in the Education segment is projected to reach US$431.50m in the same year. It is also estimated that the number of downloads will reach 0.69bn in 2022, with an average revenue per download of US$1.28 [20].

4.2.2. Target Market Groups Analysis

In this section, the possible target users identified at an early stage of the programme will be described in detail. This background will later be used (D6.4- GreenSCENT exploitation report) for the definition of the Value Proposition and Sustainable Business Model of the GreenSCENT solutions.

The involvement of local schools, public institutions, non-profit organizations, and governments in GreenSCENT provides intrinsic value of sustainability for the stakeholders at the pilot sites and case studies. This involvement leads to an improved understanding of how to train and care for the environment, as well as an increased network sustainability. Together, these stakeholders can work to create a new narrative that prioritises respect and care for the environment.

4.2.2.1. Academic and Scientific Communities

The academic and scientific communities are important target audiences for technology solutions related to environmental protection and thus potentially interested in the solutions proposed within the GreenSCENT project. These communities include researchers, scholars, and academics in various fields, such as environmental science, ecology, sustainability, and engineering.

One of the main reasons why academic and scientific communities are an important target audience is because they have a strong interest and expertise in environmental issues. These communities are often conducting research and studies related to environmental protection and are at the forefront of developing new solutions. Technology solutions that are developed with input from these communities are more likely to be effective and well-received. Furthermore, academic and scientific communities are often involved in educating the public about environmental issues and promoting sustainable practices. By partnering with these communities, technology solutions for environmental protection can be more effectively disseminated to the general public, increasing their awareness and understanding of the importance of protecting the environment. Overall, the academic and scientific communities are a critical target audience for technology solutions related to environmental protection, as they have the expertise, resources, and influence needed to advance research and innovation in this field.

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4.2.2.2. Education Institutions

Education institutions are a key target audience for technology solutions related to environmental protection for several reasons. From primary schools to universities, education institutions have a significant role in shaping the beliefs, values, and actions of future generations. Incorporating technology solutions for environmental protection into their curriculum can help to promote sustainable practices and raise awareness of environmental issues among young people. Education institutions are centers of research and innovation, employing many researchers and scientists. Technology companies can partner with education institutions to access the latest research and innovations in environmental protection, working together to develop and test new technology solutions. Finally, education institutions are often deeply embedded in their local communities and have the potential to reach a wide audience. By engaging with their communities and promoting the use of technology solutions for environmental protection, education institutions can help to raise awareness and promote sustainable practices on a larger scale.

Overall, education institutions are an important target audience for technology solutions related to environmental protection, as they have the potential to influence future generations, conduct research and innovation, implement technology solutions in their operations, and engage with their communities.

4.2.2.3. Environment Stakeholders

Environment stakeholders refer to individuals, organizations, or groups who have an interest or stake in the environment, whether it be environmental protection, resource management, or sustainability. These stakeholders may have different perspectives, priorities, and levels of influence, but all have a shared interest in the environment. Examples of environment stakeholders include:

- **Government agencies**: government agencies are responsible for developing and implementing environmental policies and regulations that aim to protect the environment and promote sustainable practices.
- **Non-governmental organizations (NGOs)**: NGOs are organizations that work to promote environmental protection and sustainability through advocacy, research, and education.
- **Industry**: Industries that rely on natural resources or have a significant impact on the environment, such as energy or mining, are also environment stakeholders. They may have a stake in resource management, environmental impact assessments, and sustainable practices.
- **Community groups**: community groups may be concerned with local environmental issues, such as pollution, habitat destruction, or climate change. They may advocate for policy changes or engage in activities that promote sustainability and environmental protection.
- **General public**: the general public is also considered an environment stakeholder, as they are affected by environmental issues and may have an interest in environmental protection and sustainability.

Understanding the perspectives and interests of environment stakeholders is important for effective environmental management and decision-making. By engaging with stakeholders, policymakers and organizations can better understand their concerns and work collaboratively to develop and implement solutions that benefit both the environment and society.

Environmental stakeholders, such as NGOs and community groups, are an important target audience because they have significant influence in advocating for environmental protection and sustainability. Engaging with them and providing technology solutions that address their concerns can build support for environmental initiatives and enhance the reputation of companies and organizations as environmentally responsible entities. Environmental stakeholders possess a wealth of expertise and knowledge related to environmental issues. Collaborating with them and incorporating their insights into technology solutions can lead to more effective and innovative solutions. There is a growing market demand for environmentally friendly products and services, and by targeting environmental stakeholders with technology solutions that promote sustainability and environmental protection, companies and organizations can tap into this demand and create new

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opportunities for growth and innovation. Moreover, environmental stakeholders, including government agencies and NGOs, are often involved in setting environmental regulations and standards. Developing technology solutions that comply with these regulations and standards can demonstrate the commitment of companies and organizations to environmental protection and help them avoid potential legal or reputational risks.

4.2.2.4. Policy Makers

Policy makers have a critical role to play in protecting the environment. They are responsible for developing and implementing policies and regulations that aim to protect the environment, promote sustainable practices, and mitigate the impact of human activities on the environment.

One of the key roles of policy makers is to develop environmental policies and regulations. These policies and regulations provide guidelines and standards for businesses and individuals to follow and help to promote sustainable practices. Examples of such policies and regulations include regulations on emissions, waste disposal, and resource management. Policy makers are also responsible for enforcing environmental regulations, such as monitoring and enforcing compliance with emissions standards, waste disposal regulations, and other environmental regulations. This helps to ensure that businesses and individuals are following the guidelines and standards set out in the policies and regulations.

In addition to developing and enforcing policies and regulations, policy makers can allocate funding for environmental initiatives, such as research and development of new technologies or conservation efforts. This funding can help to promote innovation in the field of environmental protection, and support efforts to mitigate environmental damage.

Policy makers can also help to raise public awareness about environmental issues and promote sustainable practices by educating the public through public campaigns, events, and other initiatives. By doing so, they can help to encourage individuals and businesses to adopt sustainable practices that can help to reduce the impact of human activities on the environment. Policy makers can work with other countries to develop international agreements and policies aimed at protecting the environment. International cooperation can help to ensure that environmental protection efforts are coordinated and effective on a global scale. Examples of such international agreements include the Paris Agreement on climate change.

In summary, policy makers play a critical role in environmental protection by developing and enforcing policies and regulations, allocating funding for environmental initiatives, educating the public, and promoting international cooperation. Their efforts can help to mitigate the impact of human activities on the environment and promote sustainable practices for the benefit of current and future generations.

At this stage, it is also important to analyse the role of policy makers with regard to the adoption and use of technological solutions aimed at environmental protection. This is also critical in order to understand how the solutions developed within the GreenSCENT framework can generate interest among these stakeholders. Policy makers may be interested in using technological solutions for environmental protection in various ways. Firstly, technology can be used to monitor and measure environmental pollution accurately and efficiently. This can help policy makers make data-driven decisions and develop targeted policies and regulations to address key sources of pollution. Furthermore, technology can be used to develop innovative solutions to reduce pollution and promote sustainable practices. For example, renewable energy technology can be used to reduce greenhouse gas emissions and promote the use of clean energy sources. Waste recycling and management technology can be used to reduce the impact of waste on the environment and promote sustainable resource management.

In addition, technology can be used to improve communication and public participation in environmental policy decisions. For example, policy makers can use online platforms to engage the public and promote environmental awareness. Policy makers may also be interested in using technological solutions for environmental protection to improve pollution monitoring, develop innovative solutions, engage the public, and

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collaborate with technology companies. The adoption of sustainable technologies can help protect the environment and promote long-term sustainable development.

4.2.2.5. Businesses

The business sector in general can be an important target in the area of technological solutions for environmental protection for several reasons:

- **Environmental impact**: Enterprises can have a significant environmental impact through their operations, production and supply chains. Therefore, providing technology solutions that help businesses reduce their environmental impact can have a significant impact on the environment.
- **Cost savings**: Many environmental technologies can help companies reduce costs by increasing efficiency, reducing waste, and improving productivity. By providing cost-effective solutions, companies are more likely to invest in environmental technologies.
- **Regulatory compliance**: Many environmental regulations require companies to reduce their environmental impact. Providing technology solutions that help companies comply with these regulations can be a lucrative market.
- **Corporate Social Responsibility** (CSR): Many companies increasingly recognise the importance of CSR and incorporate environmental sustainability into their business strategies. By providing technology solutions that can help companies achieve their CSR goals, technology companies can tap into this growing market.
- **Brand Reputation**: Environmental sustainability is becoming an important factor for consumers when making purchasing decisions. By investing in environmental technologies, companies can improve their brand reputation and appeal to environmentally conscious consumers.

In general, the potential benefits for companies of providing environmental technology solutions are significant and make this market attractive for technology companies.

Below we briefly see how the business sector involved in digital service provision can play a key role in improving environmental sustainability.

Digital Service Providers
Digital services, such as IoT devices, AI, and data analytics, are increasingly important in environmental protection. They are used to develop digital services for monitoring and addressing environmental issues. These services provide real-time environmental data that can be used by stakeholders to make informed decisions about environmental management. Remote environmental monitoring services using IoT sensors and sensor networks are being provided by digital service providers, while data analytics services help businesses monitor their emissions and improve environmental sustainability. The advancement of technology is likely to increase the role of digital services in protecting the environment.

Digital service providers can provide remote environmental monitoring services using technologies such as IoT (Internet of Things) sensors and sensor networks. These services can be used to monitor air quality, noise pollution levels, water quality, and other environmental indicators. Finally, digital service providers can offer data analytics services for businesses that want to monitor their emissions and improve their environmental sustainability. These services can help businesses identify areas for improvement and make informed decisions regarding environmental management.

4.2.2.6. EU Citizens

Citizens of the European Union can benefit from various initiatives for the protection and monitoring of the environment. The EU has been proactive in promoting environmental sustainability and supporting technological advancements in this field [21]. The EU provides various opportunities for citizens to benefit from initiatives for environmental protection and monitoring. These efforts aim to create a more sustainable and

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environmentally friendly future. Hence, EU citizens can become a targeted market for technological solutions aimed at environmental protection and monitoring [22]. EU citizens exhibit a relatively high level of environmental awareness and concern compared to other regions, driven by the implementation of stringent environmental regulations and targets within the EU. This heightened awareness makes EU citizens more receptive to technological initiatives that promote sustainability and environmental protection. Furthermore, the EU has established a comprehensive policy framework to address environmental challenges, including legislation and regulations that promote the adoption of eco-friendly technologies and practices [1]. This supportive policy environment creates opportunities for businesses to develop and market innovative solutions to meet the demands of EU citizens.

The market demand for environmental technologies and solutions in the EU is significant [23]. EU citizens actively seek products and services that align with their values and contribute to a greener future. This demand encompasses various areas such as renewable energy, energy efficiency, waste management, sustainable transportation, and smart cities. Additionally, the EU fosters collaboration among businesses, researchers, and institutions through networks and partnerships. These collaborative networks facilitate knowledge exchange, research collaboration, and the sharing of best practices. Businesses targeting the EU market can tap into these networks to access resources, expertise, and potential partnerships, effectively developing and marketing their environmental technology solutions.

In conclusion, EU citizens in general, represent a profitable market segment for technology solutions related to environmental protection and monitoring. Their strong environmental awareness, supportive policy framework, market demand, funding opportunities, technological expertise and collaborative networks make them an attractive target for companies and organization operating in this sector.

4.2.3. GreenSCENT Technology Solutions: Potential Competitors and Market Players

In this section, the state of the industry and the main current players within the three main technology sectors (featured in the project proposal) of the solutions proposed in the GreenSCENT project have been described.

The final objective is to analyse the attractiveness of the market and to compare the solutions, functionalities and technological domains covered in order to identify the added value that the GreenSCENT project could offer the market. This activity will be updated in D6.4 - GreenSCENT exploitation report (M36), where a final comparison of GreenSCENT functionalities versus those of the main market players will also be implemented.

The technological domains considered are the following:

- **Mobile app and platform for monitoring and observing the environment**
- **Open Innovation Platform**
- **Augmented Reality for Air pollution awareness**

4.2.3.1. Mobile app and platform for monitoring and observing the environment

Mobile apps and platforms for monitoring the environment play a crucial role in empowering individuals to become active participants in environmental conservation and awareness. These technology solutions leverage the power of smartphones and connectivity to enable users to collect data, access information, and contribute to environmental research and initiatives Below are some examples of mobile apps and platforms that are used for monitoring and observing the environment. The research was also extended to examples of communities dealing with the environment in general, with a view to sharing scientific and naturalistic data.

iNaturalist

iNaturalist [24] is a mobile application and online platform designed for documenting and identifying biodiversity. It was created by the California Academy of Sciences and the National Geographic Society to

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engage people in citizen science and promote environmental awareness. The main goal of iNaturalist is to enable users to record and share their observations of plants, animals, and other organisms they encounter in their natural surroundings. Users can capture photos, make notes about the species' characteristics and behaviour, and tag the location where the observation took place.

The iNaturalist community consists of amateur naturalists, scientists, and enthusiasts from around the world. By contributing their observations, users can receive help with species identification from the community members and experts. This collaborative aspect of the platform allows for collective knowledge sharing and helps to create a comprehensive database of biodiversity records. In addition to individual observations, iNaturalist also facilitates participation in various projects and initiatives. These projects can focus on specific regions, species, or research themes, allowing users to contribute their observations to larger scientific efforts and conservation initiatives.

The data collected through iNaturalist has proven to be valuable for ecological research, conservation planning, and monitoring of species distributions over time. It has also been used in academic studies and is utilized by organizations and institutions working in the field of biodiversity conservation.

Plume Labs

Plume Labs [25] is a company focused on providing information and solutions related to air pollution. They aim to raise awareness about air quality and empower individuals to make informed decisions to protect their health and the environment. Plume Labs offers a range of products and services centered around air pollution monitoring, data analysis, and education.

One of Plume Labs' notable offerings is the "Air Report" mobile app. The app provides real-time air quality information for cities worldwide, allowing users to access current pollution levels and make decisions based on the data. The app utilizes a color-coded system, with green indicating good air quality and red signalling poor air quality. Users can explore pollution maps, receive alerts about changing conditions, and access personalized recommendations for healthier living in polluted areas. In addition to the Air Report app, Plume Labs offers "Flow," a portable air quality monitor. Flow is a compact device that measures and tracks air pollution levels in real-time. Users can connect Flow to their smartphones via Bluetooth and view detailed air quality data on the app. The device provides information about various pollutants, such as nitrogen dioxide (NO2) and volatile organic compounds (VOCs), helping users understand the specific air quality challenges they face.

Plume Labs also leverages their air pollution data and expertise to collaborate with cities, researchers, and policymakers. They work on projects that aim to improve urban air quality and support initiatives for sustainable urban development. By partnering with governments and organizations, Plume Labs contributes to data-driven decision-making and the development of effective policies to mitigate air pollution.

BreezoMeter

BreezoMeter [26] is a leading provider of real-time air quality data and environmental analytics. It offers a mobile app and an API platform that deliver hyperlocal air quality information to individuals, businesses, and organizations. The primary goal of BreezoMeter is to empower people to make informed decisions about their daily activities based on the air quality conditions in their surroundings. The app and API utilize advanced algorithms that combine data from multiple sources, including governmental monitoring stations, satellite data, weather patterns, and traffic information.

BreezoMeter provides users with an intuitive interface to access real-time air quality information at their specific location or any other designated area. The air quality index (AQI) provided by BreezoMeter offers a clear and understandable measurement of air quality, ranging from good to hazardous, and includes health recommendations based on the pollution levels. One of the notable features of BreezoMeter is its ability to provide hyperlocal data. It takes into account factors such as street-level pollution, weather conditions, and geographical characteristics to offer highly accurate and localized air quality information. This allows users to

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understand the air quality conditions in their immediate vicinity, rather than relying on generalized city-wide or regional data. In addition to air quality information, BreezoMeter also offers insights into other environmental factors such as pollen levels, UV radiation, and weather conditions. This comprehensive approach enables users to have a holistic understanding of their environment and make informed decisions accordingly.

BreezoMeter's API platform is designed for businesses and organizations seeking to integrate real-time air quality data into their applications, services, or products. It provides developers with easy access to a wealth of air quality information and environmental analytics, allowing them to create customized solutions for their specific needs. The data provided by BreezoMeter is widely used in various domains, including health and wellness apps, smart home systems, urban planning, transportation management, and environmental research. It contributes to raising awareness about air quality, promoting sustainable practices, and improving overall environmental health.

AirVisual

AirVisual [27] is a mobile app and online platform that provides real-time air quality information and pollution forecasts for locations worldwide. It was developed by IQAir, a Swiss-based air quality technology company, with the aim of raising awareness about air pollution and helping individuals make informed decisions regarding their health and outdoor activities. The app utilizes a network of air quality monitoring stations located in various cities and regions across the globe. These stations measure key pollutants such as particulate matter (PM2.5 and PM10), nitrogen dioxide (NO2), ozone (O3), carbon monoxide (CO), and sulphur dioxide (SO2). The data from these monitoring stations is then processed and made available to users through the AirVisual app.

With AirVisual, users can easily check the air quality index (AQI) for their current location or any other specified location. The AQI provides a numerical value that indicates the overall air quality level, ranging from good to hazardous, along with corresponding health recommendations. Users can also access historical air quality data to understand trends and changes over time.

One of the key features of AirVisual is its pollution forecast capability. It uses advanced modelling techniques to predict air quality for the upcoming hours and days. This allows users to plan their outdoor activities accordingly and take necessary precautions when air pollution levels are expected to be high.

AirVisual also offers personalized features such as air quality alerts and health advice based on individual sensitivity to air pollution. Users can set up notifications to receive alerts when air quality in their area reaches unhealthy levels, helping them stay informed and take appropriate actions to protect their health.

Waterkeeper Swim Guide

Waterkeeper Swim Guide [28] is a mobile app and online platform that provides real-time information about the water quality at beaches and swimming spots. It is designed to help beachgoers and swimmers make informed decisions about where to swim and ensure a safe and enjoyable experience in the water. The app aggregates water quality data from various official monitoring sources, environmental organizations, and local waterkeepers. It covers a wide range of beaches and swimming areas across North America and other parts of the world. Users can search for their desired location or browse through the available options to find beaches near them. The app displays the water quality status for each beach, indicating whether it is safe for swimming or if there are any advisory or closure notices in effect. The water quality information is based on parameters such as bacterial contamination levels, toxins, and other pollutants. Users can also access additional details about the beach, including amenities, weather conditions, and user-submitted photos and reviews.

Waterkeeper Swim Guide aims to promote transparency and accountability regarding water quality monitoring. It encourages waterkeepers and local organizations to actively engage in monitoring their waters, ensuring that the data provided to users is up-to-date and reliable. Additionally, the Swim Guide platform fosters community engagement by allowing users to contribute their own observations and feedback about the water quality at specific locations. This user-generated data can provide valuable insights and help improve the overall accuracy and coverage of the app's information.

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The Swim Guide app and platform also serve as an advocacy tool for clean water initiatives. By raising awareness about water quality issues and promoting responsible water use, it contributes to the protection and restoration of water bodies and ecosystems.

NoiseCapture

NoiseCapture [29] is a mobile app designed for monitoring and mapping noise pollution. It allows users to measure and record noise levels using the microphone on their smartphones, creating a database of noise data that can be visualized and analyzed.

The primary goal of NoiseCapture is to raise awareness about noise pollution and its impact on human health and well-being. By involving individuals in noise monitoring efforts, the app aims to collect valuable data on noise levels in different locations and contribute to understanding the extent of the noise pollution problem. By collecting and analysing noise data from various sources, NoiseCapture can help identify noise pollution sources, assess the impact on residents' quality of life, and inform urban planning decisions. The app can also be used by individuals to advocate for noise reduction measures in their communities or to highlight specific noise issues to local authorities.

4.2.3.2. Open Innovation Platform

Open innovation platforms are digital tools or platforms that facilitate collaboration and the exchange of ideas between different stakeholders, such as individuals, organizations, and communities. These platforms are designed to harness the collective intelligence and expertise of a diverse group of participants to solve complex problems, drive innovation, and create value. Below are some examples of open innovation platforms that have facilitated collaboration and the resolution of complex problems by opening up participation to a broad community of people. Some of the platforms chosen in the survey also have the environment as a theme.

Decidim

Decidim [30] is an open innovation platform that enables participatory democracy and collective decision-making processes. It is designed to engage citizens and stakeholders in shaping public policies, projects, and initiatives. The goal of Decidim is to empower citizens by providing them with a digital space where they can collaborate, debate, and co-create solutions to societal challenges. It enables the participation of individuals, communities, and organizations through features such as discussion forums, voting mechanisms, collaborative drafting of proposals, and feedback loops.

Decidim supports a range of participatory processes, including participatory budgeting, policy development, and the co-creation of public services. It emphasizes transparency, inclusivity, and openness by providing accessible information, promoting diverse perspectives, and ensuring accountability in decision-making.

The platform incorporates principles of open-source software and open data, allowing for its continuous improvement and adaptation by a global community of developers and contributors. This collaborative approach enables innovation and the sharing of best practices among different implementations of Decidim worldwide. By leveraging the power of technology and citizen engagement, Decidim aims to strengthen democracy and create more inclusive and responsive governance structures. It has been adopted by numerous cities, organizations, and institutions around the world as a tool to enable collective decision-making and foster civic participation.

InnoCentive/ Wazoku

InnoCentive [31] is an open innovation and crowdsourcing platform that connects organizations facing complex problems or challenges with a global network of problem solvers. It allows companies, non-profits, and

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government agencies to tap into the collective intelligence and expertise of a diverse community to find innovative solutions. InnoCentive operates on the principle that great ideas can come from anywhere and anyone, regardless of their background or location. The platform hosts various types of challenges, ranging from scientific and technical problems to business and social innovation challenges. These challenges are presented to a community of solvers, who compete to provide the best solution. Solvers can be individuals, teams, or even organizations.

The platform offers a structured process for submitting, evaluating, and selecting solutions. It provides tools for collaboration, communication, and intellectual property protection. Challenges posted on InnoCentive often come with monetary rewards or other incentives for successful solvers.

InnoCentive has gained recognition for its ability to facilitate breakthrough innovations and problem-solving across industries. It has been used by companies and organizations worldwide to tackle a wide range of challenges, from product development and scientific research to sustainability and social impact initiatives.

OpenIDEO

OpenIDEO [32] OpenIDEO is an online platform that facilitates open and global collaboration to solve social problems through design thinking and innovation. Founded in 2010, OpenIDEO was created with the goal of engaging a broad community of people from different disciplines and backgrounds to creatively address social challenges. The OpenIDEO platform functions as an online hub where people can participate in open challenges and collaborate in the generation of ideas, projects, and solutions. Challenges are proposed by organizations, companies, or non-profit entities seeking innovative solutions to specific problems. OpenIDEO users are invited to contribute their skills and perspectives to tackle these challenges.

The OpenIDEO process is guided by design thinking, a methodology that emphasizes empathy, problem definition, idea generation, prototyping, and testing. Users are encouraged to collaborate, comment, and vote on the ideas of others, creating a dynamic and interactive community. The platform also hosts discussions, online workshops, events, and competitions to engage the community more deeply. These collective efforts aim to create concrete and feasible solutions that can be implemented to address identified social problems.

UnTap Compete

Untap Compete [33] is a platform designed for organizations to harness the potential of open innovation through competition management. Untap offers a comprehensive solution for planning, launching, managing, and evaluating various open innovation programs such as online hackathons, student competitions, innovation challenges, startup programs, and more. It simplifies the entire process of handling submissions, engaging with participants and judges, assessing entries, conducting multiple rounds of submission, and generating detailed analyses. Untap Compete is utilized by a wide range of entities including government departments, corporations, grant providers, innovation managers, events managers, scholarship program managers, non-governmental organizations (NGOs), large foundations, and incubators/accelerators.

Climate CoLab

Climate CoLab [34] is a collaborative online platform that focuses on engaging people from around the world in creating innovative solutions to address climate change. It is an initiative of the Institute for Data, Systems, and Society at the Massachusetts Institute of Technology (MIT).

Climate CoLab harnesses the power of open collaboration to involve experts, academics, professionals, students, and the general public in generating ideas and projects to tackle climate challenges. The platform hosts a series of contests and themed challenges where participants can contribute their ideas and expertise. Participants can submit innovative proposals on a wide range of topics such as renewable energy, energy efficiency, greenhouse gas emissions mitigation, adaptation to climate change, waste management, and more. Proposals can encompass policies, technologies, awareness initiatives, economic models, and other aspects

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that can contribute to reducing the impact of climate change. Proposals are evaluated by the Climate CoLab community and a panel of experts who provide feedback and assessments. Challenge winners can receive recognition, visibility, and the opportunity to present their ideas to a broader audience of climate change leaders.

Climate CoLab aims to promote global innovation and collaboration to address climate change. Through its online platform, it encourages the involvement of a wide range of stakeholders in creating sustainable solutions and promoting effective actions to tackle this global challenge.

Pollution Tracker

PollutionTracker [35] is a platform that focuses on monitoring and tracking environmental pollution. It is designed to enable individuals and communities to report pollution incidents and share information about the state of pollution in their local areas.

The main objective of PollutionTracker is to increase public awareness about pollution and encourage active citizen involvement in reporting and combating environmental pollution. The platform allows users to report pollution incidents such as chemical spills, industrial emissions, or other environmental issues. Pollution reports can be submitted using various tools, such as submitting photos, descriptions of the problems, and location information. These reports are then collected and displayed on the platform, creating an interactive map of pollution. PollutionTracker can be used by individuals, local communities, environmental organizations, and other stakeholders to monitor pollution and request intervention from relevant authorities. The platform also facilitates the sharing of information among stakeholders and helps highlight areas or pollution issues that require greater attention and action.

Through PollutionTracker, the aim is to create a broader pollution monitoring network and raise awareness about environmental issues, encouraging collective action to reduce and prevent pollution and preserve the health and well-being of the environment.

OpenAQ

OpenAQ [36] is an open-source platform that collects air quality data from around the world and makes it accessible to the public in a transparent manner. Founded in 2015, the primary goal of OpenAQ is to democratize access to air quality information and promote transparency and accountability regarding air pollution.

OpenAQ aggregates data from a variety of sources, including government agencies, non-governmental organizations, and citizen monitoring sensors. These data are standardized and made available through an open Application Programming Interface (API), allowing developers, researchers, journalists, and the general public to easily access and utilize air quality information. The OpenAQ platform offers a range of tools and features that enable users to explore the data, visualize it on interactive maps, and analyse it to better understand local and global air pollution. Users can also contribute air monitoring data and participate in the OpenAQ community.

OpenAQ promotes collaboration and knowledge sharing among stakeholders to address issues related to air pollution. It facilitates the creation of open data networks, promotes transparency, and encourages actions aimed at improving air quality and public health.

4.2.3.3. Augmented Reality for air pollution awareness

Augmented Reality (AR) can be a powerful tool for raising awareness about air pollution and its impact on the environment and public health. By overlaying digital information into the real world, AR can provide interactive and engaging experiences that educate and inspire individuals to take action.

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There might not be specific providers focused on Augmented Reality (AR) for air pollution, but there are companies and organizations that work on AR technologies and environmental monitoring. Microsoft offers the HoloLens AR headset and Mixed Reality platform, enabling the creation of AR experiences for air pollution monitoring and visualization. Google has developed ARCore (https://developers.google.com/ar?hl=it), an AR platform for Android devices, allowing developers to create AR applications with potential features for air pollution monitoring and awareness.

The Environmental Defense Fund (EDF) [37] collaborated with Google to develop the Google Environmental Insights Explorer. Although not solely focused on AR, this tool combines satellite data and AI to offer environmental insights, including air pollution data, on a city-wide scale. AirVisual provides a real-time air quality data and pollution forecast app, although it is not a direct AR provider. Integrating this data with AR technologies could enhance immersive and visual experiences related to air pollution.

4.2.4. PESTEL Analysis

This section will further investigate the state of the GreenSCENT project's market, following the PESTEL approach, which includes consideration of political, economic, social, technological, legal and environmental aspects. The PESTEL Analysis has been made at European level and carried out considering the elements characterizing the GreenSCENT project fields, in order to understand how technology solutions will be able to enable innovative scenarios in the Environment Protection sector.

Here below the political, economic, social, technological, legal and environment issues that could impact on the project results are briefly presented:

Political

- **Regulations**: Governments can regulate the use and implementation of technology solutions and platform related to environmental protection, environmental monitoring, and data collection. The most important and current regulation that moves in this direction at European level is the Green Deal. As well known, the European Green Deal is a set of policy initiatives and strategies aimed at tackling climate change, promoting sustainability, and driving economic growth. It covers various sectors and areas, including energy, transport, industry, agriculture, buildings, and biodiversity. The European Green Deal reflects the EU's commitment to global climate action and the implementation of the Paris Agreement. It seeks to position Europe as a leader in the fight against climate change while fostering innovation, job creation, and sustainable development. In this regard, SCENT's objective is to create a comprehensive competence framework that encompasses all the key areas of focus within the Green Deal.

- **Government support**: Governments can provide financial and other forms of support for technology solutions that protect the environment. The European Union provides various types of financial support to promote and facilitate the implementation of the Green Deal. The European Green Deal Investment Plan, which aims to mobilize a minimum of €1 trillion in investments over the next decade. It includes the establishment of the Sustainable Europe Investment Plan and the Just Transition Mechanism to aid the transition towards a sustainable, climate-neutral economy. The Just Transition Fund specifically supports regions and communities heavily reliant on fossil fuels, helping them overcome economic and social challenges during their transition to a climate-neutral economy. It provides financial aid for worker retraining, job creation in green sectors, and local development initiatives. Horizon Europe, the EU's research and innovation funding program, provides significant funding for projects that contribute to the Green Deal's objectives. This includes the development of sustainable technologies, promotion of circular economy solutions, and addressing challenges posed by climate change. LIFE Program, the EU's funding instrument for environmental and climate action projects, offers financial support for innovative pilot projects, demonstrations, and initiatives sharing best practices. These efforts contribute to environmental sustainability, as well as mitigation and adaptation to climate change. These are just a few, non-exhaustive examples illustrating the different financial support mechanisms available in Europe to promote the implementation of the Green Deal. The EU

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continues to explore and develop further initiatives and financing mechanisms to accelerate the transition to a sustainable and climate neutral economy.

- **International agreements**: International agreements such as the Paris Climate Agreement, G20 Climate and Energy Action Plan, the Montreal Protocol, Kyoto Protocol, can drive the adoption of technology solutions for environmental protection. Political stability and agreements between countries are essential elements in the commitment to environmental sustainability.

Economic

- **Market Demand:** There may be a growing demand for environmentally friendly products and services, which can drive the adoption of technology solutions for environmental protection. Economic trends and a positive investment climate impact the growth and sustainability of the sector.
- **Costs:** Technology solutions for environmental protection may be expensive to implement, which can be a barrier to adoption. Nevertheless, the availability of funds for research, development and implementation of these technologies must be taken into consideration. Furthermore, the evaluation of the cost-effectiveness of innovative applications compared to traditional monitoring methods can encourage stakeholders in the adoption of such technologies.
- **Return on Investment (ROI):** Technology solutions for environmental protection can provide a return on investment over time through improved efficiency and reduced costs.

Sociocultural

- **Public awareness:** Increased awareness and concern about environmental issues has become widespread among individuals and communities. This process of change may foster, firstly, a desire to become informed about certain topics and, consequently, may also facilitate the adoption of technologies related to the protection and monitoring of the environment and climate change.
- **Public perception:** An important factor to consider is the public's reaction to environmental monitoring and protection: the proposed technological solutions may be perceived as intrusive and invasive and produce hostile attitudes. The work to be done is mainly in the direction of communication and education, to produce a positive perception and full acceptance of the new technologies.
- **Social responsibility:** Companies are beginning to feel the social responsibility of adopting technological solutions that protect the environment and have a less devastating impact compared to the past. To encourage these stakeholders to adopt technologies designed for prevention and monitoring, it is also necessary to work extensively on issues related to data privacy and security to generate acceptance of new practices.

Technological

- **Innovation:** Technological advancements in the development of mobile apps, sensors, and data analysis can drive innovation in the field of environmental protection and inspire new ideas and approaches. Progress in this field can serve as a catalyst for the adoption of these technologies by an increasing number of users.
- **Cybersecurity**: Technology solutions for environmental protection may be vulnerable to cybersecurity attacks, which can compromise the integrity of the data and the system itself.
- **Integration**: Integration with other technologies such as the Internet of Things (IoT) for data collection is crucial to truly enhance the value of environmental protection solutions. The employed technologies should enable the implementation of requirements such as real-time data monitoring, analysis, and reporting through mobile platforms.

Environmental

- **Integration:** The solutions developed in GreenSCENT should be able to integrate with existing environmental monitoring networks and infrastructures.
- **Sustainability:** Mobile applications and the platform itself should have a strong sustainability and environmental footprint.

Legal

- **Regulations:** Governments can regulate the use and implementation of technology solutions for environmental protection through laws and regulations. Additionally, there may be regulatory frameworks that govern the sharing and dissemination of environmental data.
- **Intellectual property:** Technology solutions for environmental protection may be subject to intellectual property laws, which can impact the development and commercialization of the technology.
- **Liability:** Companies and business involved in developing technologies in this field may be liable for environmental damages caused by technological solutions that do not work or do not function properly. Therefore, it is necessary to respect regulatory requirements for accuracy, reliability, and calibration of environmental monitoring devices and software.

By analysing these factors, stakeholders can assess the opportunities and challenges associated with the development and implementation of mobile apps and platforms for monitoring and observing the environment. This analysis helps in understanding the external environment and making informed decisions for the successful deployment and adoption of technologies and framework developed in GreenSCENT project. Furthermore, this analysis suggests that while technology solutions can be cost-effective, innovative, and beneficial for the environment, they also face challenges such as regulations, public perception, and unforeseen risks.

The following table summarises the main issues and impacts taking into considerations the results of the PESTEL analysis.

						
ISSUES	Regulations	Market Demand	Public Awareness	Innovation	Integration	Regulation
	Government Support	Costs	Public Perception	Cyber Security	Sustainability	Intellectual Property
	International Agreements	Return on Investment (ROI)	Social Responsibility	Integration		Liability

IMPACT	GreenSCENT framework is able to incorporate the new European and international policies on environmental protection	Growing demand for environmental monitoring products and technology solutions are the main drivers for the development and commercial exploitation of the results of the GreenSCENTproject	GreenSCENT aims at foster and facilitate the adoption of technologies related to the protection and monitoring of the environment and climate change	Technological advancements in the development of mobile apps, sensors, and data analysis developed within GreenSCENT framework, can drive innovation in the field of environmental protection and inspire new ideas and approaches	The effort of GreenSCENT stakeholders will be to develop solutions that have themselves a strong sustainability and environmental footprint	GreenSCENT services and tool attempt to respect regulatory requirements for accuracy, reliability, and calibration of environment monitoring devices and software.

Table 11: PESTEL Analysis Results

4.2.5. Swot Analysis

A SWOT analysis has been carried out to identify the internal and external characteristics of the GreenSCENT framework and solutions. The internal analysis includes the strengths and weaknesses, while the external analysis contains the opportunities and threats that GreenSCENT will have to deal with.

Strengths:

- **Accuracy:** The technological solutions for environmental monitoring proposed in GreenSCENT can provide accurate data on various environmental parameters and better identify potential problems.
- **Efficiency:** GreenSCENT platform can be more efficient, allowing for quick action, if necessary.
- **Multilingual:** The platform will be ready to be available in all official EU languages.
- **Digital Accessibility:** GreenSCENT aims to engage various user groups in the design and validation of the proposed solutions, while also incorporating accessibility standards and cross-cultural approaches in the development of analogic and digital demonstrators that support the GreenComp initiative.
- **Robust:** The GreenSCENT web platform is a robust and reliable web application that can be accessed using any up-to-date web browser, including popular choices like Google Chrome, Internet Explorer, and others, as long as they support the HTML 5 standard and WebGL.
- **Open Source:** The platform has been developed using an advanced open-source middleware stack known as MERN (MongoDB, Express, React, Node), which has facilitated the development of an outstanding user experience.
- **User-Friendly Interface**: The mobile app and platform offer a user-friendly interface, making it easy for users to navigate, access data, and interpret the information.
- **Multidisciplinary:** Design and piloting of the GreenSCENT platform involves the participation of multidisciplinary participants from all stages of education (from primary schools to academia), therefore the audience of end-users is large and consolidated.

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- **Cost effective:** Over time, the technology solutions developed within GreenSCENT project may be more cost-effective than traditional methods of environmental protection.
- **Innovation:** GreenSCENT framework and platform can drive innovation in the field of environmental protection and spread new ideas and approaches.
- **Public awareness:** GreenSCENT is committed to transform and overcome existing stereotypes and sceptical attitudes by actively involving society to discover and implement the most effective citizen science practices. The project aims to empower students and citizens, fostering a strong interest in climate, sustainability, and environmental protection. By challenging their knowledge and understanding of Green Deal topics, GreenSCENT provides opportunities for individuals to learn through hands-on experimentation and practical engagement.

Weaknesses:

- **Maintenance and upgrades:** The technological solutions may require regular maintenance and upgrades to ensure they continue to function properly.
- **Technical issues:** The app and platform require stable internet connectivity for data transmission and updates, which may pose challenges in areas with limited or unstable network coverage.

Opportunities:

- **Collaboration and Citizen Science:** GreenSCENT platform can encourage collaboration among users and facilitate citizen science initiatives, where individuals contribute to environmental observations and data collection.
- **Partnerships:** GreenSCENT solutions and framework can foster partnerships between organizations, governments, and other stakeholders to address environmental issues collaboratively. It also can provide opportunities for data sharing, expertise exchange, and broader adoption of the app and platform.
- **Data-driven decision- making:** The data collected through the platform can be used for data-driven decision-making to improve environmental policies and practices.
- **Compliance with European Green Deal topics:** The European Green Deal aims to transform the European Union into a climate-neutral and sustainable economy. It sets out a comprehensive package of policies and measures to address climate change, protect the environment, and promote a circular economy. SCENT operates on the premise that the Competence Framework can align with the core domains outlined in the EU Green Deal Communication, encompassing 8 key areas of expertise: climate change, renewable energy, circular economy, sustainable buildings, intelligent transportation, resilient food systems, biodiversity, and pollution reduction.
- **Compliance with WCAG2.1:** The SCENT mobile app and the user interface of the SCENT platform will be designed to be accessible, adhering to WCAG2.1 and the European EN 301 549 accessibility standards. Additionally, they will be prepared to support multiple European languages, ensuring inclusivity for users across different language preferences.
- **Compliance with AVMSD:** Ensuring accessibility of communication for everyone is a priority, which includes complying with EU directives on media accessibility AVMSD. The aim is to guarantee that information and training provided by GreenSCENT reach all individuals.
- **Compliance with EU Data Strategy:** The objective of the European data strategy is to position the EU as a frontrunner in a data- driven society. By establishing a unified market for data, it will facilitate the unrestricted movement of data within the EU and across various sectors, benefiting businesses, researchers, and public administrations alike.

- **Increased public awareness:** GreenSCENT framework and solutions can increase awareness of environmental issues and encourage more sustainable practices among the public and policymakers.

Threats:

- **Competition:** Other mobile apps and platforms offering similar environmental monitoring capabilities may emerge, increasing competition for user adoption and engagement.
- **Regulatory compliance:** Compliance with evolving data protection and privacy regulations can pose challenges, requiring continuous monitoring and updates to ensure adherence.
- **Technological advancements:** Rapid advancements in technology may lead to the development of more advanced and innovative solutions, posing a threat to the competitiveness of the app and platform if not continuously updated and enhanced.
- **Public perception:** The GreenSCENT framework may encounter resistance in the public opinion due to anti-scientific beliefs and the circulation of false information on the web and social networks. Moreover, the public may perceive the use of technology in environmental protection as invasive or intrusive.

The table below illustrates the key **strengths**, **weaknesses**, **opportunities,** and **threats** of GreenSCENT framework.

INTERNAL FACTORS	
STRENGTHS (+)	**WEAKNESSES (-)**
• **Accuracy** • **Efficiency** • **Multilingual** • **Digital Accessibility** • **Robust** • **Open Source** • **User-Friendly Interface** • **Multidisciplinary** • **Cost- effective** • **Innovation** • **Public awareness**	• **Maintenance and upgrades** • **Technical issues**

EXTERNAL FACTORS	
OPPORTUNITIES (+)	**THREATS (-)**
• **Collaboration and Citizen Science** • **Partnerships** • **Data-driven decision- making** • **Compliance with European Green Deal topics** • **Compliance with WCAG2.1** • **Compliance with AVMSD** • **Compliance with EU Data Strategy** • **Increased public awareness**	• **Competition** • **Regulatory compliance** • **Technological advancements** • **Public perception**

Table 12: Swot Analysis Results

4.2.6. GreenSCENT *Marketing Funnel*

The *Marketing Funnel*, also known as *Sales Funnel*, is a model used to represent the stages a potential customer/user goes through, before making a purchase or taking any desired action. The funnel is often divided into four or five stages, depending on the specific model used:

- **Awareness**: The potential customer becomes aware of a brand, product, or service.
- **Interest**: The potential customer shows interest in the brand, product, or service by seeking out more information.
- **Consideration**: The potential customer considers purchasing the product or service.
- **Decision**: In this stage, prospects are finalizing their decision and may seek additional reassurance or clarification. Marketers should provide exceptional customer support and offer guarantees or warranties to instil confidence in the purchase decision.
- **Purchase**: This is the stage where the prospect becomes a customer by completing the transaction. It involves smooth and user-friendly purchasing processes, secure payment options, and clear communication.

The marketing funnel is a useful tool for businesses to understand and improve their marketing strategies, by identifying areas where potential customers may drop off and improving their efforts to move them towards the goal of conversion.

In order to organise the user/customer lifecycle of the solutions offered by GreenSCENT, from product awareness to purchase, it is necessary to map the different contact points of the customer journey. Each stage can be visualised in the marketing funnel, to understand the process of transforming leads into customers, viewed from a marketing and sales perspective. The idea is that, as in a funnel, marketers cast a wide net to capture as many leads as possible, and then slowly nurture prospects to a purchase decision, narrowing down the candidates at each stage of the funnel. Ideally, the funnel should be a cylinder, with all leads turning into customers. The goal is to convert as many leads into customers as possible, thus making the funnel more cylindrical.

It is important to note that there is no single agreed-upon version of the funnel; some have many stages while others have only a few, with different names and actions taken by the company/organisation and the consumer for each.

Below are the hypothetical stages of the GreenSCENT marketing funnel.

Awareness: This phase is dedicated to creating awareness of the technology solutions and the environmental issue they address. Marketing activities could include creating informative and educational content on social media and blogs, participating in environmental events and conferences, distributing informational materials in schools and universities, and publishing advertisements. The activities could also include creating content that highlights the impact of environmental pollution raising awareness of the environmental issues and the role that citizen journalism and citizen science can play in a change.

Interest: In this phase, the goal is to generate interest in the technology solutions proposed within GreenSCENT. It's the stage where potential users of the technology solution can be also interested in learning more about how they can participate in citizen journalism efforts. Marketing activities could include creating blog posts, social media content, and videos that explain the technology solutions and their benefits, also producing videos that showcase the solution's capabilities, and participating in online forums and groups related to environmental monitoring. Marketing activities could also include creating demonstration or tutorial videos that show the solution in action, participating in webinars or online events, sending informative emails, and interacting on social media with potential customers.

Consideration: At this stage, potential users are interested in the technology solutions and are considering whether they are suitable for their needs. Marketing activities could include:

- providing detailed product information on the project's website, offering free trials or demonstrations, and hosting webinars or online events that allow potential customers to interact with the products;
- creating case studies that demonstrate the effectiveness of the technology solutions in environmental protection and monitoring;
- engaging with potential users to answer questions and provide support;
- sending personalized proposals and quotes;
- offering special deals or discounts to encourage purchase.

Decision: In this phase, the potential customer is ready to make a purchase decision. Marketing activities could include providing detailed pricing and subscription information, offering personalized onboarding support, providing technical support and assistance in the implementation phase and creating a simple and easy-to-use interface that helps users to get started quickly.

Purchase: In this phase, the customer purchases the technology solution. The user begins to use the technology solutions developed within GreenSCENT project (for example) to engage in citizen journalism efforts for environmental protection. Marketing activities could include sending personalized thank-you messages, providing onboarding assistance and training, providing regular updates on the impact of user effort and encouraging users to share their experiences and successes on social media.

Afterwards, there is a continuous and iterative stage which is the **retention**: once the customer has signed up for the technology solution, the focus shifts to retaining them. Marketing activities could include providing ongoing technical support and updates, offering loyalty programs and rewards, and encouraging customers to refer their colleagues to the solution.

The infographic below synthesizes the Marketing Funnel of GreenSCENT solutions.

Figure 12: - GreenSCENT Marketing Funnel

4.3. Project Exploitation Early Intention

The approach in deriving a project-wide exploitation plan involves executing a series of sequential steps, some of which already started and considered in this report, others one that will be covered in the next exploitation deliverable (D6.4- GreenSCENT exploitation report- M36). Those steps are presented in this section. We note that feedback loops might occur; this is expected especially during the last year of the project, when the evaluation of the pilots as well as of the resulting framework will provide a much better overview of the results, their relevance as well of their readiness regarding the initial projected exploitation period and efforts. The steps that build a vision of the exploitation plan for the project results are presented below:

- **Periodical analysis of the market**, its requirements, and the emerging trends. As already initially highlighted, the market analysis is a crucial step in defining exploitation approach. More specifically, it provides a clear overview of the main requirements, blockers as well as drivers of adoption of innovative solutions for environmental protection, such as regulations, as well as evaluating the susceptibility of a market for disruptive innovation actions.
- **Identification of the competitive landscape**. It enables the further planning and development of competitive products, as well as identifying strengths and weaknesses, and of developing a compelling exploitation, as well as sustainable business plan.
- **Identification of the exploitable outcomes**. The exploitable outcomes are represented by those which can be used in other activities, other than those related to the current project's role. More

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specifically, they represent results which can be used in creating and marketing products and services, research activities or i.e., standardization activities. At a fundamental level, these represent the value which allows the conversion of the project's effort into viable economic and scientific articles, through their innovative and distinguishable features.

- **An internal analysis, containing the strength and weaknesses factors,** reflects the advantages and disadvantages of GreenSCENT in muting its target markets, reflecting either the core competencies that should provide an advantage in competition with other similar-oriented products or research, or those which are expected to place the project at a disadvantage relative to others. Such factors include the technical contribution and maturity, the expertise of the partners involved within the project, the financial and cost-related factors and requirements in providing or finalizing services and products, as well as the visibility of the overall project in its relevant markets (e.g., academic medium for innovation, business-related medium for commercialization, and similar).
- **An external analysis refers factors from the market and environment**, comprising ecosystem of private and public entities. More specifically, such as competitors or governmental entities. At this level, opportunities reflect those changes which are perceived as positive within the market; the threats, negative factors which are beyond the control of the project.

4.3.1. Individual Exploitation Plans

This section provides a description of the expectations for the exploitation of the project results by each partner; the exploitation approach is illustrated on an individual level.

Each paragraph will contain a brief description of each partner's background, relevant to understand the exploitation approach, and, for each outcome, an unambiguous tabular representation of the collected partner's inputs.

4.3.1.1. International Telematic University UNINETTUNO (UNINET)

Organization Background

International Telematic University UNINETTUNO (UNINETTUNO) is an international, non-state University located in Rome (Italy), providing distance education, and accredited by the Italian Minister of Higher Education in 2005. The University is currently organized into five Faculties (Engineering; Economics and Law; Cultural Heritage; Psychology; Communication Science). Its educational offer includes undergraduate, graduate and post-graduate programs (including PhD).

UNINETTUNO delivers lectures and extra-curricular activities in Italian, English, French, Arabic, and Greek, through its own eLearning platform (www.uninettunouniversity.net). The platform is based on the research activities and the pedagogical model developed by UNINETTUNO Rector (Professor M. A. Garito), and then implemented by UNINETTUNO researchers and technicians.

The University derives from NETTUNO newtork (NETwork Telematico per l'UNiversità Ovunque, in English, «Telematic Network for University everywhere»), consisting in a consortium of 43 Italian and foreign universities set up in 1992, able to provide distance education through television and internet to thousand Italian and foreign students.

Today, 28.000 students are enrolled in UNINETTUNO. The University employs also more than 800 academics, and administrative and technical staff are employed at the University. Academic staff is enriched, moreover, by the presence of more than 500 adjunct professors, including professors from top Italian/international universities, and professors of practice selected from SMEs and large enterprise.

Thanks to the international experience and its familiarity with the interdisciplinary, UNINETTUNO developed an extensive range of international research and cooperation activities, many of which are aimed at the development of innovative application of new technologies to teaching and learning processes.

In 2017, UNESCO acknowledged UNINETTUNO as one of the universities working and orienting its action towards the achievement of the United Nations 17 "Sustainable Development Goals (SDG)", namely the globally- shared objectives fixed to end poverty, to protect the planet, promote gender equality, protect and support cultures and grant wellbeing for all. Due to the powerful social impact of its projects, and to its missions aiming at a truly democratizing the access to knowledge through the new technologies, UNINETTUNO was included in the HESD (Higher Education and Research for Sustainable Development) initiative, supplying a global mapping of the universities and higher education and research institutions that are the best performing in the achievement of the sustainable development goals, described by the United Nations sustainable development goals, illustrated in the UN 2030 Agenda. UNINETTUNO is the only Italian University among EADTU (European Association of Distance Teaching Universities) members; it is also a member of the ICDE (International Council for Open and Distance Education); in 2015, UNINETTUNO became the Euro-Mediterranean node for the ICDE Operational Network.

UNINETTUNO has a strong track record in participating in initiatives related to social innovation and inclusion funded by the European Commission and international funds, having as main outputs capacity building to third countries, wide-range studies and analysis, innovative programs, curricula, training, and initiative enabled by ICT technologies applied to teaching and learning processes, collaboration, and process innovation.

UNINETTUNO Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
GreenSCENT Competence Framework	**UNINET**	**Report**	**End of the project**	**Open License**
	Future Exploitation			
	The Competence Framework will be the main result of the project as requested by the original call for proposal. Its use will be promoted in EU educational institution at all educational level in a lifelong learning perspective. Internally, UNINETTUNO will adopt the Competence Framework, designing new modules and labelling existing courses in its formal program (Degrees in Economics, Engineering), giving evidence of the competences addressed by each module. The competence framework will be then promoted as a tool for course designers and educators for creating new programs and educational activities targeting sustainable education objectives in line with the EU Green Deal. It will be an instrument for providing consultancy to other educational institutions, to position UNINETTUNO as a "sustainable university", and to develop further research and international cooperation projects, also beyond EU borders, targeting third countries involved in Erasmus+ and Horizon Europe program.			

Table 13: UNINET- GreenSCENT Competence Framework

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
GreenSCENT Knowledge Graph	**UNINET**	**Online service**	**End of the project**	**Proprietary license**
	Future Exploitation			

	It's an interactive representation of the Competence Framework, already "connected" to other frameworks, and expandable towards other reports. It allows: • Further collaborative and multidisciplinary researches • Interactions with institutions and educators in instructional codesign workshops and activities, supporting the development of new sustainability education programs • The methodology behind the Knowledge Graph can be adapted and reused on other knowledge domains, representing an asset for UNINETTUNO for the participation in other international research and innovation projects.

Table 14: UNINET- GreenSCENT Knowledge Graph

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
GreenSCENT Competence Questionnaire	**UNINET**	**Report**	**End of the project**	**Proprietary license**
	Future Exploitation			
	It is a modular questionnaire, able to measure, with a pre-activity and post-activity administration, the changes the proposed activity generated in the participants in terms of awareness, competence and behaviours. It is adaptable to the 8 different focus areas of the Green Deal (from Climate Change to Smart mobility to Zero Emission), and to different education level/target groups/activities. It includes IAT (Implicit Association Testing) scales. UNINETTUNO has already been invited by Climate KIC to participate in a proposal addressing HORIZON-CL5-2023-D1-01-10 call. UNINETTUNO's role will be contributing in the impact assessment of educational policies and activities across Europe, focusing on individual/psychological aspects, and therefore on competences and behavioural change. This investigation tool is exploitable for psychological-focused researches, and for policy-oriented researches.			

Table 15: UNINET- GreenSCENT Competence Questionnaire

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Educational format/activities	**UNINET**	**Product**	**End of the project**	**Proprietary license**
	Future Exploitation			
	UNINETTUNO will act (also) as a pilot site in GreenSCENT, developing specific modules/courses to validate on the field the Competence Framework, the selected Demonstrators, and to apply the GreenSCENT			

	Competence Questionnaire. The modules produced will be integrated in formal curriculum (Bachelor/Master degrees) and proposed as Short Programs – Microcredentials, defining them according to the new recommended standards (see: https://data.consilium.europa.eu/doc/document/ST-9237-2022-INIT/en/pdf) Educational formats and their delivery (enrolment, tutoring, assessment, certification, credits) will be part of a commercial process in which UNINETTUNO will define a set of courses for both Higher Education students (short programs stackable in full degree programs) and for professionals (micro-credentials for continuous professional development) focusing on STEM and Ecological transition skills.

Table 16: UNINET- Educational format/activities

4.3.1.2. ENGINEERING INGEGNERIA INFORMATICA SPA (ENG)

Organization Background

Engineering Ingegneria Informatica S.p.A (ENG) is the head company of the ENGINEERING Group. ENG was founded in 1980 and the Group is the Digital Transformation Company, leader in Italy and expanding its global footprint, with around 12,000 associates and over 60 offices in 12 countries, spread across Europe, the United States of America and South America. In 2020, consolidated revenues were around 1.24 billion Euros.

The Engineering Group supports the Digital Transformation of public and private organizations in several sectors, with a complete offer combining system and business integration, outsourcing, cloud services, consulting and proprietary solutions. ENG designs, develops and manages innovative solutions for all market segments, including Digital Finance, Smart Government & E-Health, Augmented City, Digital Industry, Smart Energy & Utilities, Digital Media & Communication.

Since 1987 ENG's capability for innovation is supported by its Central Unit of Research & Development, organized across 5 development laboratories specialized for research areas. With around 40 million Euros in annual investments in R&I and a team of around 450 researchers, ENG plays a leading role in research, by participating currently in over 80 national and international research projects.

Also, ENG takes part in several international research initiatives, working with various organizations on the definition of strategies for the growth and competitiveness in the main emerging ICT sectors. Specifically, ENG is among the main ICT players that support the FIWARE initiative. ENG is co-founder of the FIWARE Foundation, aiming at supporting FIWARE activities and the principles of openness, transparency and meritocracy which work as the pillars of the FIWARE community.

ENG Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Environment Monitoring App	**ENG**	**Know- how** **Software**	**TBD**	**Proprietary license**

	Future Exploitation
	ENG aims to exploit this outcome in various ways to gain a competitive advantage. For potential commercialization of the application, ENG could distribute it on the respective App Stores (Apple's App Store and Google Play Store) and make it available to the public. It would be possible to monetize the application through in-app purchases for premium features or offer a free version with paid upgrade options. Subscription models are also a possible option to provide access to the advanced features of the application. For example, monthly or annual subscription plans could be offered that allow users to access exclusive features such as detailed reports, real-time alerts, or additional monitoring tools. An important exploitation hypothesis is also represented by partnerships with other organizations or institutions, particularly project stakeholders. The application could be used to collect data and information on environmental conditions in specific areas, and collaboration with institutions could generate visibility. Technological partnerships are also a valid option. Collaborations could be initiated with other companies that wish to integrate the environmental monitoring functionality of the application into their own products or services. For instance, companies offering smart city solutions, natural resource management, or sustainability solutions might be interested in integrating the application's environmental data into their systems.

Table 17: ENG- Environment Monitoring App

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Citizen Journalism	**ENG**	**Know- how** **Software**	**TBD**	**Proprietary license**
	Future Exploitation			
	ENG considers it important to carefully evaluate market opportunities, competition, and local regulations to determine the most appropriate exploitation strategy for this research project's outcome. For the commercialization of the application, a service could be offered where registered users can view active reports in a specific territory and actively participate in citizen journalism activities. Personalized consulting services could be provided for the customization and usage of the web app to communities and organizations interested in promoting citizen journalism in the environmental protection sector. The services to be provided could be tailored to meet the specific needs of the client/user. Another exploitation hypothesis for this outcome could involve partnering with local entities that wish to implement a citizen journalism platform to engage citizens in reporting issues related to the territory. These partnerships could include funding, collaboration agreements, and customization of the web application.			

Table 18: ENG- Citizen Journalism

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Interactive Documentary	**ENG**	**Know- how** **Software**	**TBD**	**Proprietary license**
	Future Exploitation			
	ENG considers it crucial to carefully evaluate market opportunities, competition, and industry needs to determine the most appropriate exploitation strategy for this research project's outcome. For the commercialization of the web tool, a potential service could involve registered users uploading their multimedia content and using it to create immersive experiences accessible through browsers and mobile devices. The licensing models for tool usage are still under evaluation. Another possibility could be providing consulting and training services to users who aim to produce content using the web tool. This could include personalized training sessions, assistance in creating immersive experiences, and guidance on best practices to fully leverage the tool's functionalities. As for the sale of licenses and subscriptions, these options are still being assessed, but potential target users could be institutions and/or organizations interested in creating and distributing interactive content to raise awareness among users interested in environmental issues.			

Table 19: ENG- Interactive Documentary

4.3.1.3. UNIVERSIDAD AUTONOMA DE BARCELONA (UAB)

Organization Background

The Universitat Autònoma de Barcelona (UAB) is a prominent public university in Spain, situated near Barcelona in Bellaterra. Presently, the university provides a wide array of undergraduate programs, encompassing humanities, arts, social sciences, health sciences, technology, and physical sciences. Additionally, UAB offers 133 Master's degrees, including 8 Erasmus Mundus Master's degrees, and has facilitated over 1,114 doctoral dissertations through its doctoral programs. With over 37,700 students, nearly 3,700 researchers and faculty, and a diverse community of more than 6,000 international students, UAB has gained recognition for its commitment to quality education, attracting global talent, and making a significant impact in research. These efforts have contributed to its progressive rise in influential international rankings, establishing the UAB as one of the leading universities in Spain.

The UAB holds a prestigious position among Spanish universities in global rankings. It topped the list of Spanish universities in the World University Ranking (THE WUR 2016-2017) and secured the 9th position worldwide and 2nd in Europe in the QS top 50 under 50 Ranking 2016, which evaluates universities established within the last 50 years. It also stands as the foremost Spanish university in this ranking. Moreover, the UAB ranked first in the World University Rankings (THE WUR 2015-2016) and second in Spain in terms of scientific activity volume according to the Scimago Institution Rankings World Report (SIR WR 2016).

Being one of the best universities in Spain, the UAB was designated as a Campus of International Excellence in 2009, a recognition received by only five Spanish universities. Since the inception of the EU Horizon 2020 programme on January 1, 2014, the UAB has secured more than €32 million in funding for over 60 Horizon 2020 European Projects, with 8 of them being led by the UAB and including 8 ERC projects.

On an international scale, the UAB has acquired over €127 million in funding for more than 120 competitive projects, with 11 of them being led by the UAB and 42 individual projects. In relation to ERC, the UAB has served as a host institution for 17 outstanding projects funded by the European Research Council, out of which

9 were obtained during FP7 (4 StG, 1 CoG, 3 AdG, 1 PoC), and 8 under Horizon 2020 (3 StG, 4 CoG, 1 AdG). Regarding the Marie Curie Actions, within the framework of FP7, the UAB participated in a total of 45 projects, with at least one project for each action, and hosted 51 fellows. For H2020, the UAB is currently involved in 19 Marie S. Curie Actions, coordinating 3 of them, including one in the UAB team working in the the GreenSCENT project. The UAB is dedicated to enhancing its Human Resources policies in alignment with the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, and it has been honored with the HR Excellence in Research designation. The GreenSCENT project involves the participation of the University Autonoma of Barcelona (UAB) through its TransMedia Catalonia research group. This group has been dedicated to the study of media accessibility for more than 15 years. You can find more information about their research at http://grupsderecerca.uab.cat/transmedia/.

UAB Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
6 Academic articles	**UAB**	**Research papers**	**M36**	**Open source**
	Future Exploitation			
	Exploitation phases **Pre-Publication Phase:** a) Identify target audience: Determine the specific audience segments within the academic community and related fields who would benefit from the article's insights **Publication Phase:** a) Select an appropriate journal/platform: Choose a reputable academic journal or platform that aligns with the article's topic and target audience. b) Optimize metadata: Craft an attention-grabbing title, concise abstract, and relevant keywords to enhance discoverability through search engines and acade c) Leverage author networks: Encourage co-authors and contributors to share the article on their personal websites, blogs, and social media profiles. **Post-Publication Phase:** a) Social media engagement: Share the article on various social media platforms, including Twitter and LinkedIn using relevant hashtags and mentions to amplify its visibility. b) Cross-linking and referencing: Establish connections with other authors, researchers, and scholars in the field to promote cross-referencing and citations, increasing the article's impact factor.			

Table 20: UAB- Academic articles

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
50 Blog articles	**UAB**	**Blog article**	**M36**	**Open source**
	Future Exploitation			
	Exploitation phases **Pre-Publication Phase:** a) Define target audience: Identify the specific audience segments within the niche or industry that would benefit from the blog articles.			

	Publication Phase: a) Optimise blog metadata: Craft compelling titles, meta descriptions, and relevant keywords to improve search engine visibility. **Post-Publication Phase:** a) Social media promotion: Share the articles across various social media platforms, including Facebook, Twitter, Instagram, and LinkedIn, using eye-catching visuals, engaging captions, and relevant hashtags.

Table 21: UAB- 50 Blog articles

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
3 Green Digital Accessibility Conferences	**UAB**	**Conferences**	**M36**	**NA**
	Future Exploitation			
	Exploitation phases **Pre-Conference Phase:** a) Identify target audience: Define the specific audience segments within the digital accessibility and sustainability communities who would benefit from the conferences. b) Engage with influencers: Connect with influential individuals, organisations, and advocates in the field of digital accessibility and sustainability to create anticipation and foster collaboration opportunities. **Conference Promotion Phase:** a) Establish conference website: Develop an informative and user-friendly conference website that highlights the key themes, speakers, and registration details. b) Leverage social media: Use platforms like Twitter, LinkedIn, and Facebook to share updates, engage with the target audience using relevant hashtags and mentions. c) Email marketing: Build an email subscriber list and send targeted newsletters and updates to potential attendees, highlighting conference highlights, speaker announcements, and registration deadlines. d) Collaborate with partners: Seek partnerships with relevant organisations, academic institutions, or industry leaders to co-promote the conferences and expand their reach within the digital accessibility and sustainability communities. **Post-Conference Phase:** a) Share conference materials: Upload presentation slides, and relevant resources on the conference website b) Engage with attendees: Encourage conference participants to share their experiences and insights on social media using dedicated hashtags, fostering discussions and community building beyond the event. c) Follow-up communications: Send post-conference emails expressing gratitude to attendees, sharing post-conference materials, and soliciting feedback for future improvements.			

Table 22: UAB- Green Digital Accessibility Conferences

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses

GreenSCENT storytelling tookit	**UAB**	**Toolkit**	**M18**	**Open source**
	Future Exploitation			
	Exploitation phases **Pre-Launch Phase:** a) Define target audience: Identify the specific audience segments, including children, schools, and parents, who would benefit from the GreenSCENT Storytelling Toolkit. b) Collaborate with educators and schools: Establish partnerships with schools and educators to gain insights, incorporate their feedback, and tailor the toolkit to meet their needs. **Toolkit Promotion Phase:** a) Social media engagement: Use social media platforms like Facebook, Instagram, and YouTube to share teasers, snippets, and highlights from the toolkit, reaching parents, schools, and relevant communities. b) Email marketing: Develop an email subscriber list and send newsletters and updates to parents and educators, showcasing the benefits of the toolkit and providing guidance on how to use it effectively. **Post-Launch Phase:** a) Encourage user-generated content: Prompt children, parents, and educators to share their experiences with the toolkit on social media using dedicated hashtags, fostering a sense of community and showcasing the toolkit's impact. b) Engage with schools and communities: Organize workshops, webinars, or virtual events in collaboration with schools and community organizations to introduce the toolkit, provide guidance on its use, and share success stories.			

Table 23: UAB- GreenSCENT storytelling tookit

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Organisation of 4 GreenSCENT webinar(s)	**UAB**	**Webinars**	**M36**	**Open source**
	Future Exploitation			
	Exploitation phases **Pre-Webinar Phase:** a) Identify target audience: Define the specific audience segments across different regions and cultural backgrounds who would benefit from the GreenSCENT webinars. **Webinar Promotion Phase:** a) Develop engaging webinar content: Curate compelling and informative presentations, panel discussions, and interactive sessions that address globally relevant environmental topics and sustainable practices. b) Leverage digital platforms: Use social media platforms, email marketing, and dedicated event websites to promote the webinars, targeting diverse global audiences with tailored messaging and localised content. **Post-Webinar Phase:** a) Make recorded webinar sessions available for viewing on a dedicated online platform or through video sharing platforms to accommodate participants across different time zones and provide access to those who could not attend live. b) Engage with participants: Encourage participants to share their insights, questions, or feedback on social media using dedicated hashtags, fostering cross-cultural conversations and community building beyond the webinars.			

Table 24: UAB- GreenSCENT webinar(s)

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Participation in 5 High level events	**UAB**	**High level events**	**M36**	**NA**
	Future Exploitation			
	Exploitation phases **Pre-Event Phase:** a) Identify target audience: Define the specific audience segments within the industry or sector that the events cater to. b) Engage with event organisers: Establish connections with event organisers to explore speaking opportunities, panel discussions, or workshop participation to showcase expertise and amplify GreenSCENT key messages. **Event Promotion Phase:** a) Leverage social media: Use platforms like Twitter, LinkedIn, and event-specific hashtags to share updates and engage with attendees. b) Collaborate with event partners: Seek partnerships with sponsors, exhibitors, or other participating organisations to cross-promote each other's presence and amplify reach. **Event Participation Phase:** a) Deliver impactful presentations: Prepare engaging and informative presentations aligned with the event's theme and target audience, showcasing GreenSCENT's objectives and demonstrators b) Actively participate in panel discussions: Engage in thoughtful discussions, contribute unique perspectives, and establish connections with fellow panelists and audience members. c) Network strategically: Identify key stakeholders, industry leaders, or potential collaborators, and proactively engage in networking opportunities to build relationships and explore collaboration prospects. **Post-Event Phase:** a) Amplify event highlights: Share key takeaways, quotes, or memorable moments from the events on social media and through targeted email communications to extend the event's impact beyond its duration. b) Publish thought leadership content: Develop post-event blog posts on the topics discussed during the events, sharing valuable insights with a broader audience. c) Follow-up with connections: Maintain contact with the individuals and organisations met during the events, nurturing relationships, and exploring potential partnerships or joint initiatives.			

Table 25: UAB- Participation in 5 High level events

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
GreenSCENT book	**UAB**	**Book**	**M36**	**Open source**

	Future Exploitation
	Exploitation phases **Book Promotion Phase:** a) Develop compelling book content b) Leverage digital platforms: uSE social media, online bookstores, and author websites to promote the book, reaching a broad audience and generating interest. **Online Marketing:** a) Social media campaigns: Launch targeted campaigns on platforms like Facebook, Instagram, and Twitter to reach different audiences, using relevant hashtags and engaging visual content. b) Email marketing: Build an email subscriber list and send newsletters to potential readers, providing insights into the book's content, author interviews, and special promotions. c) Collaborate with environmental organizations: Seek partnerships with relevant organizations to co-promote the book through their networks, expanding its reach within the environmental community. **Offline Promotion:** a) Events: Organise author talks, or workshops to engage with readers and generate local interest. b) Media coverage: Pitch the book to local newspapers, magazines, or radio stations for interviews, features, or reviews, increasing its exposure in traditional media.

Table 26: UAB- GreenSCENT book

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Participation in 15 conferences	**UAB**	**Conferences**	**M36**	**NA**
	Future Exploitation			
	For the exploitation plan, refer to the section titled 'Participation in 5 High-Level Events' as it adheres to a similar structure.			

Table 27: UAB- Participation in 15 conferences

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Special Issue with Universal Access in the Information Society		**Special Issue**	**M36**	**NA**
	Future Exploitation			
	Exploitation plan: **Call for Papers:** a) Define the scope: Clearly outline the focus areas and topics related to universal access in the information society for the special issue. b) Promote the call: Use academic platforms, relevant mailing lists, and social media to spread the call for papers, targeting researchers, scholars, and practitioners in the field. c) Collaborate with organisations: Seek partnerships with relevant organisations or networks working on accessibility and inclusivity to share the call with their members and promote broader engagement.			

	Peer Review and Selection: a) Establish an expert review panel: Engage experts in the field to review submitted papers, ensuring high-quality research and adherence to the special issue's scope. b) Encourage diverse submissions: Actively promote inclusivity and encourage submissions from researchers representing different perspectives, disciplines, and geographical regions. c) Select impactful contributions: Choose papers that demonstrate innovative insights, address significant challenges, or propose practical solutions to advance universal access in the information society. **Publication and Dissemination:** a) Collaborate with journal or publication platform: Liaise with the chosen journal or platform to ensure timely publication of the special issue, leveraging their distribution channels and audience. b) Publicise the special issue: Use social media, academic networks, and newsletters to promote the special issue, highlighting key findings and attracting readers interested in universal access and inclusive information societies. c) Engage with the academic community: Present the special issue at relevant conferences, webinars, or panel discussions to increase visibility, spark discussions, and facilitate knowledge exchange among researchers and practitioners.

Table 28: UAB- Special Issue with Universal Access in the Information Society

4.3.1.4. AGORIZE SAS (AGO)

Organization Background

Agorize is an online Open Innovation and Collaboration Platform for multinational organizations needing to solve key business challenges and connect with graduate talent and new startup technologies.

Owned by Agorize SASA, Agorize enables open innovation by combining internal and external know-how to deliver solutions for organizations in ground-breaking ways. AGO identify the right target groups and networks to solve challenges, allowing companies and organizations to recruit the right talent and raise brand awareness. Agorize is the only platform capable of connecting organizations to a network up to 5 million innovators, 400.000 startups and 17.000 Faculties all over the world. AGO's project management and marketing solutions integrate seamlessly into client systems to deliver open innovation and top graduate talent at speed. Since AGO has founded in 2011, AGO has organized more than 2000 Open Innovation Projects with more than 500 global clients.

AGORIZE Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Development of the Agorize platform for idea management and collaboration	**AGO**	**Software** **Service** **Report**	**Immediate: The platform is live, as well as the challenge page**	**IPR of submitted ideas remain with participants** **Platform is owned by GreenSCENT program**
	Future Exploitation			

	All communication related outcomes such as social media presence, press releases and collaborative partnerships have already shown their outcome, resulting in over 1000 young citizens reached, almost 700 participants and 400 citizens participating in the public vote. This attractiveness of the first challenge will be used in order to promote the 2nd challenge to young citizens who have already participated in the first challenge and we will continue leveraging on the social media presence to communicate around the GreenSCENT program. At the end of the first challenge, a detailed report will be provided to measure performances and outcomes of the innovations received. The finalist ideas will also be showcased on the platform and shared on social media. The exploitation of the ideas received and especially those from the winning team still needs to be defined by the consortium.

Table 29: AGO- Development of the Agorize platform for idea management and collaboration

4.3.1.5. TEKNOLOGIAN TUTKIMUSKESKUS VTT OY (VTT)

Organization Background

VTT Technical Research Centre of Finland Ltd (VTT), is a state owned and controlled non-profit limited liability company established by law. Act on the Limited Liability Company Called VTT Technical Research Centre of Finland Ltd (8761/2014) lays down provisions on the operations and status of VTT (this Act enters into force 1st of January 2015 and supersedes the Act on the Technical Research Centre of Finland 953/2010 and all amendments subsequently made to it). The Ministry of Employment and the Economy is responsible for state ownership steering.

As an impartial non-profit Research and Technology Organisation (RTO) and with the national mandate and mission to support economic competitiveness, societal development and innovation, VTT carries out research and innovation activities for the needs of industry and knowledge-based society. In 2021, VTT's net turnover was 154 million € and other operational incomes were 99 million €, with highly educated personnel of 2130. VTT receives approximately one third of its total income directly from the Finnish government. This allows VTT to carry out the high-risk strategic research and to invest in research and technology infrastructures, which are necessary to generate the knowledge and know-how required for fulfilling VTT's public mandate.

To contribute to EU goals for 2030 and beyond VTT works in synergy with the Finnish Ministry of Employment and the Economy, with regional innovation networks throughout Finland and with numerous European platforms and partnerships. Within Horizon Europe, VTT aimed at renewal of European industrial value chains increasing EU competitiveness while strengthening innovation ecosystems and addressing global challenges.

VTT is organised around three main areas: Carbon neutral solutions, Sustainable products and materials, and Digital technologies. However, all VTT activities are characterised by genuine trans-disciplinary and cross-sectoral approaches and the daily project work is planned and implemented within multi-year, coordinated programmes.

VTT has a long and vast experience in EU projects under different funding programmes and other frameworks (also PPPs, EITs, EIPs, etc.). On average, the share of industry partners was 35 % in those consortia where VTT was engaged in H2020. In programme period 2014-2020 VTT was involved in 610 EU-funded research projects (433 within H2020). Ranked among the leading European RTOs, VTT is committed to responsible collaboration for achieving the Europe 2020 goals by networking with Finnish and European actors in the global context.

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
	VTT	**Know-how**	**TBD**	**NA**

Citizen Engagement Methodology		**Research Paper** **Report**		
	Future Exploitation			
	VTT will exploit the comprehensive citizen engagement methodology by utilizing it as a tool for educating, training, and engaging citizens in future projects. It will leverage the vast inventory of engagement methods and the catalogue of citizen science initiatives to drive participation in environmental and sustainability activities. By using the RRI evaluation framework, VTT will ensure that future research aligns with the needs and expectations of its stakeholders, fostering responsible innovation. The outcomes will serve as a robust blueprint for VTT's future citizen engagement initiatives, enhancing its ability to lead impactful research and action in the context of climate change and sustainability.			

Table 30: VTT- Citizen Engagement Methodology

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Circular Design Course	**VTT**	**Know-how** **Service**	**TBD**	**NA**
	Future Exploitation			
	VTT will exploit the circular design course as a key educational and professional development tool. The comprehensive course, focusing on the circular design principles in the context of manufacturing industries, will be incorporated into various services for industry professionals, and stakeholders. This will enable participants to better understand, create, and implement circular design solutions, thereby promoting sustainability and competitiveness. The course will also serve as a platform to encourage multidisciplinary collaboration, enhancing the capacity to create innovative circular solutions. The outcomes from this course can be used as part of consultative services offered by VTT, helping industries transition to more sustainable practices. Moreover, the course content, case studies, and practical projects can be used to create a knowledge bank that will be beneficial for VTT's future research initiatives, partnerships, and consultancy services, driving further innovation in circular economy concepts within the manufacturing sector.			

Table 31: VTT- Circular Design Course

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Impact assessment framework	**VTT**	**Know-how** **Report** **Research Paper**	**TBD**	**NA**
	Future Exploitation			

	The methodological framework for assessing the impact of citizen science activities serves as a valuable tool for future exploitation by facilitating a systematic approach to evaluate the effectiveness and outcomes of these activities. This framework will be utilized in upcoming citizen science initiatives, offering an evidence-based way to measure the social, educational, and environmental impact. It will provide insights into the engagement level of citizens, the knowledge transfer effectiveness, and the extent of impact these activities have on climate change awareness and actions. Additionally, this framework can be integrated into the broader evaluation and monitoring processes of VTT, helping to continually improve the design and execution of citizen science projects. Its application will also extend to collaborative ventures with other research entities or industries, serving as a reliable measure of citizen engagement and its impacts. Ultimately, the framework will enhance VTT's capability to design, implement, and evaluate impactful citizen science activities, leading to more successful and effective public engagement in the future.

Table 32: VTT- Impact assessment framework

4.3.1.6. FONDEN TEKNOLOGIRADET (DBT)

Organization Background

The Danish Board of Technology DBT is an independent, non-profit, common good, corporative foundation, committed to technology assessment, foresight, knowledge-based decision-making, parliamentary advisory activities on science, technology and innovation, collaborative democracy and methodological research. The DBT works with a local, regional, national, as well as international perspective. It is specialised into interactive methodologies, involving trans-disciplinary research, stakeholder involvement, citizen participation, political deliberation and advice, and public communication. Especially in the domain of stakeholder and citizen consultation, connected to policy analysis, the DBT aims at being at the forefront of praxis.

The DBT employs 28 researchers and 8 research assistants. The DBT has historically emphasized the importance of citizen participation and co-creation in technological development, administrative planning, and political decision-making. In its 30 years of method development, it has built a world-class skillset for the facilitation of trans-disciplinary dialogue and solution-oriented research, ranging from the local to the global. Examples range from local citizen summits on climate adaptation, the design and facilitation of the first Danish citizen assembly on climate change, over to the conceptualisation of WWViews.

The DBT has many years of experience as coordinator of international research projects, e.g. the DBT has coordinated European research projects under FP5 (EUROPTA), FP6 (CIVISTI), FP7 (PACITA, Engage2020) and H2020 (CIMULACT, RiConfigure, GoNano, ECO2). Moreover, the DBT has participated as partner and work package leader in several other European research projects, such as BASE, CASI, Res-AGora, SUBSOL and EUth.

For more than 10 years, the DBT has developed ICT tools for supporting participatory projects, including EngageSuite (offering a host of tools for facilitating online engagement processes in real time, with the possibility of immediate assessments), WWViews Platform (coordinating large-scale meetings worldwide and providing statistics of citizens' answers) and GlobalSay (coordination participants and multi-language multi-site small-scale meetings, providing online training, facilitation and gathering answers/assessments)

DBT Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Youth Assemblies	**DBT**	**Report** **Know-how** **Book chapter**	**Not applicable**	**NA**
	Future Exploitation			
	It is important to clarify how young people have contributed to the development of the curriculum and ensure that others can learn from this process. Similarly, it is important to articulate and communicate how young people are involved in complex, meaningful projects and remain engaged, motivated and interested in contributing to difficult questions. This will ensure that others can learn from the expertise and skills we have utilized. We will ensure this by contributing with a book chapter, in the deliverable, as well as generously sharing our insights and know-how at upcoming events, external activities and joint meetings. We document all insights from our workshops on an ongoing basis and conclude with a joint report from the work of the Youth Assemblies.			

Table 33: DBT- Youth Assemblies

4.3.1.7. 4SFERA INNOVA SOCIEDAD LIMITADA (4SFERA)

Organization Background

4SFERA INNOVA is an experienced SME specialised in environmental management and assessment. Our team provides innovative solutions to our customers in the field of air quality, air pollution and climate change. Our client-based solutions include innovative methods in monitoring and management, optimisation of resources and networks, data interpretation and analysis, assessment of air quality at the local-regional-European level, management of citizen science initiatives, communication of environmental information via IT solutions.

Founded in 2010, 4sfera provides consultancy services to wide variety of stakeholders including the European Environmental Agency (EEA), European Centre for Medium-Range Weather Forecasts (ECMWF), European Space Agency (ESA), all EU Governments with specific emphasis with Spain, Luxembourg, Iceland and, UK Government, Government of Andorra and regional Governments including Catalonia, Aragón, Valencia, Vasc Country, Scotland, Northern Ireland. At local level, consultancy studies have been performed for many local authorities and municipalities.

4sfera is a SME actively involved in the air quality field for local, regional and national governments across Europe, supplying air quality expertise on data management and interpretation. On top of this, it provides necessary IT solutions via web portals, mobile app applications, SMS/e-mail alerts system etc. 4sfera has specialised in the provision of joined air quality and IT solutions for the public sector.

4sfera is an active partner of EEA's European Topic Centre on Air Pollution and Climate. including air quality data exchange, analysis and assessment at European level. In the past 10 years, 4sfera has acted as a key partner to assist EEA and several European Member States to make the transition to new data exchange obligation EC Implementing Decision 2011/850/EU. 4sfera has managed several tasks for the European Environment Agency towards the implementation of the Decision bringing IT and Air Quality experience together.

4SFERA INNOVA Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Cleanair@school toolkit	**4SFERA**	**Know-how** **Methodology** **Software**	**Immediately**	**Proprietary license** **Apps free to download from stores**
	Future Exploitation			
	Although the outcome is presented in three different parts, the product may be commercialised as a pack, a toolkit for schools to empower children to monitor air quality around their school and to raise awareness of the links between air pollution and health. The toolkit can be offered to schools, educational communities, or Local Authorities. Personalised consulting services could be provided for the customisation and usage of the tool. The services to be provided could be tailored to meet the specific needs of the client/user. Another exploitation for the outcome could involve partnering with local entities that wish to implement Cleanair@schools activity to engage the community in monitoring air pollution and discuss issues related environment and zero pollution. The pack could include personalised training sessions, assistance in creating immersive experiences, and guidance on best practices to fully leverage the tool's functionalities and to report results, behavioural change. As for the sale of licenses and subscriptions, these options are not considered at this stage on its own, but only as part of the pack, but potential target users could be institutions and/or organisations interested in monitoring air pollution.			

Table 34: 4SFERA- Cleanair@school toolkit

4.3.1.8. University of Novi Sad Faculty of Sciences (UNSPMF)

Organization Background

The University of Novi Sad Faculty of Sciences (UNSPMF) has a rich history of excellence in science and education since its establishment in 1969. With five departments covering various fields such as chemistry, biochemistry, environmental protection, biology, ecology, physics, computer science, mathematics, geography, tourism, and hotel management, the Faculty provides attractive study programs and interdisciplinary collaboration opportunities.

The Faculty is known for its dedicated and competent staff who prioritise excellence in research, social engagement, and science promotion. UNSPMF has a proven track record of successfully managing international and national projects, participating in numerous funded initiatives. The institution strategically focuses on EU and other external funding programs, maximising the utilisation of previous project results and achieving overall institutional excellence.

The University of Novi Sad is committed to internationalisation, human resource development, and capacity building, aligning its research strategy with the principles of The European Charter for Researchers and Code of Conduct for the Recruitment of Researchers. The Faculty consistently produces a significant number of scientific papers published in prestigious international journals, contributing to the advancement of knowledge.

Within the Department of Geography, Tourism, and Hotel Management, eleven research groups actively work on various areas such as loess research, cultural tourism, climatology, nature protection, and regional geography. These research groups continuously enhance their capacities to establish themselves as centers of excellence, attracting academic staff and young researchers. The department offers undergraduate, master's, and Ph.D. programs in geosciences, providing students with opportunities to tailor their research and innovation capacities. Postdoctoral researchers and Ph.D. graduates benefit from a range of courses and research opportunities provided by ongoing projects.

Throughout its more than 50 years of existence, the Department of Geography, Tourism, and Hotel Management has gained recognition as a leading scientific institution in Europe, known for its contributions to research and education in the field.

Overall, UNSPMF and its Department of Geography, Tourism, and Hotel Management are dedicated to advancing scientific knowledge, fostering academic excellence, and nurturing the growth of students and researchers in various geoscience disciplines.

UNSPMF Project Exploitable Outcomes

<table>
<tr><th>Project Exploitable Outcome</th><th>Developer/Owner</th><th>Output</th><th>Time to Market</th><th>Licenses</th></tr>
<tr><td rowspan="3">Interactive documentaries use and exploitation</td><td>ENG design/ development; UNSPMF use and exploitation</td><td>Report/educational material</td><td>TBD</td><td>/</td></tr>
<tr><td colspan="4">Future Exploitation</td></tr>
<tr><td colspan="4">The UNSPMF recognizes the value of the web tool and its potential to enhance education in the field of environment and climate change. To maximize its benefits, the UNSPMF will develop comprehensive training materials for professors and students on how to effectively utilize the interactive documentaries created through the web tool. These training materials will guide educators and learners on how to harness the tool's features to develop a deeper understanding of the environment and climate change.

The training materials will provide step-by-step instructions, best practices, and creative strategies for incorporating multimedia materials and annotations into the interactive documentaries. Professors will be equipped with the knowledge and skills to design immersive learning experiences that captivate students and foster a stronger connection with the subject matter.

Students, on the other hand, will receive guidance on navigating and interacting with the interactive documentaries. They will learn how to explore the multimedia content, engage with the annotations, and extract valuable insights about the environment and climate change. By utilising the web tool and following the provided training materials, students will develop a more nuanced understanding of the complexities surrounding these topics.</td></tr>
</table>

	The aim is to integrate this web tool and the associated training materials into study programs at all levels, including Bachelor's, Master's, and Doctoral programs. This integration ensures that students across different stages of their education can benefit from the interactive documentaries and the enhanced learning experiences they offer. Ultimately, by empowering professors and students with the necessary knowledge and resources, the UNSPMF aims to cultivate a better understanding of the environment and climate change. The interactive documentaries created through the web tool will serve as powerful educational tools, facilitating immersive and engaging learning experiences that contribute to a broader awareness of these critical topics.

Table 35: UNSPMF - Interactive documentaries use and exploitation

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Cleanair@schools use and exploitation	**4Sferadesign/ development; UNSPMF use and exploitation**	**Report/educational material**	**TBD**	/
	Future Exploitation			
	The UNSPMF will play a crucial role in developing educational materials specifically targeted at secondary schools and elementary schools, aimed at promoting a change in behaviour related to air pollution. The educational materials developed by the UNSPMF will serve as a valuable resource for schools participating in the initiative. They will provide comprehensive information on air pollution, its detrimental health effects, and the impact of road transport on air quality. By engaging with these materials, students will gain a deeper understanding of the importance of clean air and its relevance to their well-being. The materials will not only educate students but also aim to influence their behaviour and that of their parents. By raising awareness about the negative effects of air pollution and promoting sustainable transportation alternatives, such as walking, cycling, or using public transport. Moreover, the materials will emphasise the role of local communities and environmental protection agencies in improving air quality. They will explain the efforts being made to tackle air pollution and encourage students and their families to actively participate in these initiatives.			

Table 36: UNSPMF - Cleanair@schools use and exploitation

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Microplastics use and exploitation	**?? design/ development; UNSPMF use and exploitation**	**Report/educational material**	**TBD**	/
	Future Exploitation			

	The UNSPMF will utilise the microplastics guidelines established by UAB and Arquitecte Manuel Raspall school in Cardedeu to raise awareness and develop educational materials centred around microplastics. These guidelines, developed by UAB, serve as a valuable framework for understanding and addressing the issue of microplastic pollution. Drawing from these guidelines, the UNSPMF will create educational materials that are tailored to different educational levels and target audiences. These materials will include teaching units specifically designed to educate students about microplastics, their sources, impacts on the environment and human health, and potential mitigation strategies. The educational materials will incorporate engaging and interactive approaches to ensure effective learning outcomes. They may include visual aids, case studies, experiments, and practical activities to enhance students' understanding of the topic. The materials will be designed to foster critical thinking, promote responsible behaviour, and empower students to take action to reduce microplastic pollution in their everyday lives. By utilising the microplastics guidelines and developing educational materials based on them, the UNSPMF aims to raise awareness about the issue of microplastics and its implications among students. This initiative will contribute to building a generation of environmentally conscious individuals who are equipped with the knowledge and skills to address the challenges posed by microplastic pollution..

Table 37:UNSPMF - Microplastics use and exploitation

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Climathon use and exploitation	**CRA design/ development; UNSPMF use and exploitation**	**Report/educational material**	**TBD**	/
	Future Exploitation			
	The UNSPMF will actively contribute to the development of materials for the Climathon initiative. Climathon aims to enhance competences and raise awareness regarding climate change adaptation and the analytical tools required to analyse the challenges using available data resources. One of the key components of Climathon will be the organisation of various training activities, including practical training and online courses on climate time series analysis. Climathon will serve as a valuable reference point for individual development, offering knowledge in several areas. Participants will learn about locating useful data, different data sources, and their limitations. They will gain essential skills in managing, analysing, interpreting, and presenting data, using relevant tools and learning analytics. The focus will be on facilitating data-driven decision-making and real-life problem-solving methods related to climate change.The outcomes of these activities, particularly those connected to real-life problem-solving methods, will be made available to the wider public. All results will align with the Green Deal Competence Framework. The UNSPMF will actively assist in developing a comprehensive syllabus for elementary schools to address the teaching of climate change. Recognizing the challenge of where to begin, the syllabus will utilise four essential questions as guiding principles:			

	How is air pollution changing Earth and all living things? How do scientists know what they know about climate change? Why is it important for people to know about climate change? What can kids and adults do to help slow down climate change? By developing this comprehensive syllabus, the UNSPMF aims to provide elementary school teachers with a structured framework for teaching climate change. It will equip students with essential knowledge, critical thinking skills, and a sense of agency to contribute positively to the mitigation of climate change and the preservation of the planet's future.

Table 38:UNSPMF- Climathon use and exploitation

4.3.1.9. MANFRED MUDELSEE (CRA)

Organization Background

Climate Risk Analysis (CRA) (www.climate-risk-analysis.com) is a research company working on risk quantification of extreme climate/weather events. CRA believes that a better knowledge (risk estimates) is the basis for better decisions in this world of climate change, that this is the optimal way to decrease losses of life and reduce economic damages. CRA works on enhancing and adapting statistical algorithms for analysing climate data, which will yield more accurate and robust estimation results. CRA organises courses on climate time series and climate extremes analysis, the courses comprise theoretical lectures and extensive hands-on computer tutorials. CRA's team has broad experience with explaining statistical methods to biologists, climatologists, environmental researchers, geologists, geographers, hydrologists, physicists, and so forth. CRA was founded (2005) and is run by Manfred Mudelsee. CRA's clients come from worldwide; they comprise the re-insurance industry, private and public climate service providers, universities and research centers on climate change.

CRA Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Climathon	**CRA**	**Statistical results Statistical tools Increased knowledge**	**Very short (in the order of weeks)**	**Proprietary license**
	Future Exploitation			
	The approach to the exploitation of this project result is a commercial course that will be offered to students, high-level pupils and professional researchers.			

Table 39:CRA- Climathon

4.3.1.10. ELLINOGERMANIKI AGOGI SCHOLI PANAGEA SAVVA AE (EA)

Organization Background

This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101036480

Ellinogermaniki Agogi (EA) is one of the most innovative schools in Europe, has rich research and development activity in the fields of Inquiry Based Science Education (IBSE), Project Based Learning (PBL), and STEM education in combination with digital, online based learning environments and tools that use virtual reality, augmented reality and story-based education. EA is an institutional member of EDEN (European Distance Education Network), of STEDE (Science Teacher Education Development in Europe), of ECSITE (European Network of Science Centres and Museums) network and a partner school of the German Excellence Network of STEM Schools "MINT-EC" (https://www.mint-ec.de/). It has 2500 students (ages 5 to 18 years old) and 250 teachers in different disciplines. EA has a very strong vision generated interest and rich research and development activity in the fields of Inquiry Based Science Education (IBSE), Project Based Learning (PBL), and STEM education in combination with digital, online based learning environments and tools that use virtual reality, augmented reality and story-based education. Established in 1995, the Research and Development Department of EA is guiding the introduction of innovation in the school setting. The R&D Department acts as an interface between the pedagogical research, the technological innovation and the school community. It focuses on the design, implementation and support of pedagogical and technological innovation in educational practice, both through internal research as well as through collaborations with numerous educational, research and commercial institutions in Europe and the world.

R&D Department currently employs 18 full time researchers (10 PhD level, 8 MSc). Its work in EU projects over the last 20 years has established EA as a leading pioneer in innovative approaches to science education. Since its establishment, the R&D Department has coordinated and supported the participation of EA, either as coordinator or as partner, in more than 200 national and international collaborative research projects and networks (H2020, eContentPlus, ICT-PSP, SiS in FP7 and FP6, IST in FP5 and ICT in FP6, LLP-ICT, Socrates, Leonardo da Vinci, Erasmus+), the majority of which have been concerned with the fields of science and new technologies in education. EA is also a founding member of the European School Innovation Academy (ESIA - https://esia.ea.gr/), which is promoting a European standard-based IBSE competence framework that will facilitate the professional development of teachers in applying and implementing IBSE, as well as supporting the creation of a European community of practice among science teachers to modernize science education. Overall, EA has a very strong and proven experience in actively extending the dialogue between scientific and the educational community, enforcing the collaboration between schools and research organizations, centers and museums, and helping young people to acquire better understanding of the role of science in the society. In this framework coordinates large scale policy experimentation actions like the Reflecting for Change Initiative (https://reflecting4change.eu/) and Coordination Actions like the Open Schools for Open Societies (https://www.openschools.eu/) that are introducing the concept of open schooling to numerous schools in Europe and in the USA.

EA Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Cleanair@school toolkit	**4SFERA** **EA**	**Know-how** **Report**	**M18, M36**	/
	Future Exploitation			
	Exploitation phases This outcome refers to the piloting phase reporting for implementing Cleanair@schools activity in monitoring air pollution and discuss issues related to environment and zero pollution. The activity will be piloted at Ellinogermaniki Agogi school where students, teachers, researchers and parents will be engaged during the implementation phase.			

	The main goal of the reports is to document how the Cleanair@schools activity was co-designed, tested and which are the main pedagogical outcomes affecting students' behavioural change. Before the initiation of the piloting period, personalised training sessions will be conducted with the teachers and the researchers participating in the piloting phase. In addition, assistance will be provided on creating immersive experiences, and guidance on best practices to fully leverage the tool's functionalities during the training sessions. After the piloting phase, the final piloting report will be delivered including the piloting phase outcomes, the assessment results along with the opportunities and barriers occurred during the implementation phase. Future exploitation incorporates the integration of the Cleanair@schools toolkit demonstrator as part of the sustainability topics/projects that students work during the school year either in the skill labs (environmental education programme) or the sustainability clubs (extracurricular activities). In addition, further exploitation activities may incorporate: i) the promotion and adoption of the Cleanair@schools from the schools of the OSOS (Open Schools for Open Societies) community and ii) the National Institute of Educational Policy that has the potential to embrace and endorse Cleanair@schools as a good practice that can be seamlessly incorporated into the national curriculum.

Table 40: EA- Cleanair@school toolkit

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
SCENT citizen science to quantify microplastics	**UAB** **EA**	**Know-how** **Report**	**M18, M36**	/
	Future Exploitation			
	Exploitation phases This outcome refers to the piloting phase reporting for implementing the Microplastics activity where students learn how samples are collected and analysed from beaches across Europe. The activity will be piloted at Ellinogermaniki Agogi school where students, teachers and researchers will be engaged during the implementation phase. The main goal of the reports is to document how the Microplastics activity was implemented and which are the main pedagogical outcomes affecting students' behavioural change. Before the initiation of the piloting period, personalised training sessions will be conducted with the teachers and the researchers participating in the piloting phase. After the piloting phase, the final piloting report will be delivered including the implementation phase outcomes, the assessment results along with the opportunities and barriers occurred during the implementation phase. Future exploitation incorporates the integration of the Microplastics demonstrator as part of the experimental activities that students participate during the school year either in the skill labs (environmental education programme) or the sustainability clubs (extracurricular activities). In addition, further exploitation activities may incorporate: i) the promotion and adoption of the Cleanair@schools from the schools of the OSOS (Open Schools for Open Societies) community and ii) the National Institute of Educational Policy that has the potential to embrace and endorse Cleanair@schools as a good practice that can be seamlessly incorporated into the national curriculum.			

Table 41: EA- SCENT citizen science to quantify microplastics

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses

Interactive documentary	**UNINETTUNO** **EA**	**Know-how** **Report**	**M5, M18, M36**	/
	Future Exploitation			
	Exploitation phases This outcome refers to the piloting phase reporting for testing the Interactive documentary platform as part of the co-design workshops and the implementation activities. The objective of the Interactive documentary platform is supporting students to repurpose environmental related data and content and contribute to building environment awareness in a larger community. The aforementioned activities were and will be piloted at Ellinogermaniki Agogi school where students, teachers and researchers are engaged during the co-design and the implementation phase of the activity. After the initial co-design workshops, the first reports were compiled to document how the Interactive documentary platform was co-designed, tested and improved based on the students' feedback. At a second level of engagement, instructional co-design workshops will be conducted with the schoolteachers and educators to discuss on the activity planning and the main learning outcomes affecting students' behavioural change. After the piloting period, the final piloting report will be delivered including the piloting phase outcomes, the assessment results along with the opportunities and barriers occurred during the implementation phase. Future exploitation incorporates the integration of the Interactive documentary demonstrator as part of the projects that students work during the school year either in the skill labs (environmental education programme) or the sustainability clubs (extracurricular activities). In addition, further exploitation activities may incorporate: i) the promotion and adoption of the Cleanair@schools from the schools of the OSOS (Open Schools for Open Societies) community and ii) the National Institute of Educational Policy that has the potential to embrace and endorse Cleanair@schools as a good practice that can be seamlessly incorporated into the national curriculum.			

Table 42: EA- Interactive documentary

4.3.1.11. FUNDATIA SCHOOL FOR EUROPE (RST)

Organization Background

The School for Europe Foundation (S4E) was founded on the 3 July 2014, with the vision to propose an innovative school model in education along with the mission to propel the institution along a pro-European trajectory. On 1st September 2015, S4E launched a not-for-profit project called Royal School in Transylvania, a school that follows the Cambridge Curriculum and is an accredited Member School of the Council of British International Schools (COBIS). Royal School is a transparent and groundbreaking school, correspondent and porous to the community.

Royal School believes in strong public engagement, so we offer equal respect to the community, the world of work, the environment and ecology. Pupils enjoy a 21 st century curriculum designed for real-world learning and building learning power. We are a child-centred school adhering to and developing child protection and safety rights We educate and prepare learners for responsible democratic citizenship.

RST Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Testing and Experimentation	**RST**	**Know How**	/	/
	Future Exploitation			
	RST is aiming at testing all the project tools that will be asked to. The demonstrators' work will be more important in the last year of the projct, when all the tools will have been developed. RST is aiming at being one of the first schools in Europe to implement the future European Competence Framework.			

Table 43: RST- Testing and Experimentation

4.3.1.12. RACUNARSKA GIMNAZIJA SMART NOVI SAD (RGSMART)

Organization Background

Gymnasium Smart Novi Sad was founded in 2009 and is the only computer science private High School in Vojvodina province. The RG Smart consists of two departments (General type of high school and program for talented students in informatics) which conduct teaching in a wide range of specific study subjects: mathematics, chemistry, computer science, programming, physics, biology, geography, psychology, philosophy, history, languages (English and German) etc. In addition, students have extracurricular activities in the areas such as: environmental protection, entrepreneurship, astronomy, programming, acting and drama, choir, chess, sports etc., and have opportunities for visiting European countries. The school make use of modern teaching methodology and contemporary equipment, and students can take exams for international certificates MTA (Microsoft Technology Associate) and ECDL (European Computing Driving Licence). RG Smart is green oriented and environmentally responsible high school, that has put efforts in removing plastic and paper use from its activities. For the past 7 years our students have been part of regional winning teams in entrepreneurship Business Challenges. Furthermore, through extracurricular activities, our students have accomplished co-operation with local recycling centres and made web site about local environmental activities.

Our students have also participated in Environmental entrepreneurship initiative this year under patronage and sponsorships of Young Researchers of Serbia, Belgrade open school and support of EU. Student competition for eco ideas was organized within that project and our student has won the first prize for most creative and original eco idea.

The school has participated in local green project, with the aim of planting trees in city park of Novi Sad. The school established cooperation through Erasmus - e Twining student program with school in Sicily aimed for exchanging cultural and environmental experience, during which the visit to school in Sicily, Gangi, was organized in late 2019. Due to Covid-19, the return visit is postponed.

RG Smart is environmentally aware organization and has removed paper from teaching classes. In addition, plastic cups for water have been removed from use in the school. Every year the school organizes projects for raising awareness of global environmental problems and have special contests for resolving ideas of recycling processes.

RGSmart Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Environment monitoring app **(Training Materials)**	**ENG**	**Software** **Know how**	**TBD**	**Proprietary licence**
	Future Exploitation			
	RGSMART aims to develop guidelines for the use of the app in secondary education. RGSMART will prepare thorough training materials for instructors and students on how to use the app in order to optimize its advantages. These educational resources will instruct teachers and students on how to use the capabilities of the tool to gain a deeper comprehension of the environment and climate change. The training materials will include step-by-step directions, best practices, and innovative approaches. The goal is to include this tool and the related learning resources into secondary education.			

Table 44: RGSMART- Environment monitoring app (Training Materials)

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Citizen journalism/greenverse **(Training Materials)**	**ENG**	**Software** **Know how**	**TBD**	**Proprietary licence**
	Future Exploitation			
	RGSmart aims to develop guidelines for the use of the app in secondary education. RGSmart will prepare thorough training materials for instructors and students on how to use the app in order to optimize its advantages. These educational resources will instruct teachers and students on how to use the capabilities of the tool to gain a deeper comprehension of the environment and climate change. The training materials will include step-by-step directions, best practices, and innovative approaches. The goal is to include this tool and the related learning resources into secondary education.			

Table 45: RGSMART- Citizen journalism/greenverse (Training Materials)

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Interactive Documentary **(Training Materials)**	**ENG design/ development; UNSPMF use and exploitation**	**Report/educational material**	**TBD**	/
	Future Exploitation			

	The RGSMART acknowledges the importance of the website tool and its potential to improve environmental and climate change education. The RGSMART will prepare thorough training materials for teachers and students on how to use the interactive documentaries produced using the web application in order to optimize its advantages. These educational resources will instruct teachers and students on how to use the capabilities of the tool to gain a deeper knowledge of the environment and climate change. For integrating multimedia content and annotations into the interactive documentaries, the training materials will include step-by-step directions, best practices, and innovative approaches. Professors will be knowledgeable about how to create engaging learning experiences that engage students and help them develop a deeper connection to the material. On the other hand, students will be given instructions on how to use and interact with the interactive documentaries. They will learn how to interact with the annotations, explore the multimedia content, and glean insightful information about the environment and climate change. Students will gain a more nuanced grasp of the complexity surrounding these topics by using the web tool and adhering to the offered training materials. The objective is to include this website tool and the related learning resources into secondary education. In the end, the RGSMART wants to foster a greater awareness of the environment and climate change by arming teachers and students with the essential information and tools.

Table 46: RGSMART- Interactive Documentary (Training Materials)

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Climathon **(Training Materials)**	**CRA design/ development; UNSPMF use and exploitation**	**Report/educational material**	**TBD**	/
	Future Exploitation			
	The RGSMART will make a contribution to the creation of the Climathon initiative's materials. The purpose of Climathon is to improve knowledge about adaptation to climate change, as well as the analytical skills needed to evaluate the problems using the facts at hand. The planning of various training events, such as hands-on training and online courses on climate time series analysis, will be one of the main focuses of Climathon. Climathon will be a useful resource for personal growth, providing information across a range of topics. Participants will gain knowledge about where to find good data, various data sources, and their shortcomings. Utilizing pertinent technologies and learning analytics, they will acquire crucial skills in managing, analyzing, interpreting, and presenting data. Facilitating data-driven decision-making and practical problem-solving strategies for climate change will be the main objective. The results of these efforts will be made public, especially those that relate to practical problem-solving techniques. The Green Deal Competence Framework will be adhered to in all outcomes.			

Table 47: RGSMART- Climathon (Training Materials)

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
GreenSCENT augmented reality app **(Training Materials)**	**BSC**	**Software** **Know how**	**TBD**	**Proprietary licence**
	Future Exploitation			
	RGSMART aims to develop guidelines for the use of the app in secondary education. RGSMART will prepare thorough training materials for instructors and students on how to use the app in order to optimize its advantages. These educational resources will instruct teachers and students on how to use the capabilities of the tool to gain a deeper comprehension of the environment and climate change. The training materials will include step-by-step directions, best practices, and innovative approaches. The goal is to include this tool and the related learning resources into secondary education.			

Table 48: RGSMART- GreenSCENT augmented reality app (Training Materials)

4.3.1.13. BARCELONA SUPERCOMPUTING CENTER-CENTRO NACIONAL DE SUPERCOMPUTACION (BSC)

Organization Background

Barcelona Supercomputing Center-Centro Nacional de Supercomputación (BSC-CNS) is the national supercomputing centre in Spain. The center is a specialist in high performance computing (HPC) and manage MareNostrum, one of the most powerful supercomputers in Europe, located in the Torre Girona chapel.

BSC is at the service of the international scientific community and of industry that requires HPC resources. Our multidisciplinary research team and our computational facilities –including MareNostrum– make BSC an international centre of excellence in e-Science.

Since its establishment in 2005, BSC has developed an active role in promoting HPC in Spain and Europe as an essential tool for international competitiveness in science and engineering. The centre manages the Red Española de Supercomputación (RES), and was a founding and hosting member of the former European HPC infrastructure PRACE (Partnership for Advanced Computing in Europe), and is now hosting entity for EuroHPC JU, the Joint Undertaking that leads large-scale investments and HPC provision in Europe. We actively participate in the main European HPC initiatives, in close cooperation with other European supercomputing centres.

BSC has been successful in attracting talent, and our research focuses on four fields: Computer Sciences, Life Sciences, Earth Sciences and Computer Applications in Science and Engineering. Our research lines are developed within the framework of European Union research funding programmes, Spanish and Catalan public research calls and collaborations with leading companies.

BSC Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Air Quality AR App	**BSC**	• **Product** • **Software** • **Case study**	**M28**	**Proprietary license**
	Future Exploitation			
	Collaboration and dissemination activities: The app can be used to promote the air quality services group work, where there are different products and services for all kinds of audiences, this one would be the product that can be used to relate to a younger audience. **Social Media Engagement:** Social media can be used to promote the use of the application, especially with dissemination purposes in pollution episodes (dust intrusions in the winter or ozone episodes in summer). This way we can share the basic science behind the episode and the recommendations from the CALIOPE website. **Engagement Activities:** Engage with the air quality services partners to disseminate and promote the exploration of products and services for different audiences. Present the work done in relevant conferences, webinars to increase visibility of the services group. **Augmented reality maps for dissemination:** With the technology used for creating the AR maps, we'll be able to use the data from different episodes and days to show the different exposure levels of citizens with an immersive experience, and promote the protection of the health of all citizens. **Resources of CALIOPE:** We plan to have the app in the resources section of the CALIOPE website (that will launch this winter). CALIOPE is the air quality forecasting system developed by the Earth Sciences department of the Barcelona Supercomputing Center (BSC-CNS) BSC. Thanks to the potential in terms of data processing and analysis provided by supercomputing, CALIOPE offers operational air quality forecasts for the city of Barcelona, Catalonia, the Iberian Peninsula, and Europe. This would be promoted as the rest of the resources used to explain and promote the Earth Sciences Department work.		

Table 49: BSC- Air Quality App

4.3.1.14. European Certification and Qualification Association ECQA GMBH (ECQA)

Organization Background

ECQA's mission is to provide Europe-wide certification schemes for people's competences and skills in numerous professions. Backed by a large, continuously expanding European and international network of both industrial and academic expert professionals and organisations in numerous domains, the ECQA fosters the elaboration and deployment of competence frameworks and skill cards, as well as their frequent adaptation to the rapidly evolving needs and requirements on the job market. Based on these competence frameworks and skill cards, the ECQA provides certification processes and facilities for currently more than 30 job roles in various domains.

The ECQA has built Focus Groups around strategic domains such as Accessibility, Cultural Heritage, Cybersecurity, Functional Safety, Innovation and Entrepreneurship, Mobility, Sustainability, etc. These European expert groups drive forward the filling of the skills gaps in existing and emerging job roles in their

domains, as well as across those. ECQA board members have themselves expertise in at least one of these domains, allowing them to get actively engaged in defining the strategic direction of these groups.

Apart from certification, the ECQA also defines and verifies quality criteria for training organisations and trainers to leverage comparable quality levels of training across Europe and beyond. Furthermore, the ECQA also centrally promotes all certified job roles via newsletters, website, social media, and participation in dissemination events. So far, the ECQA GmbH has certified more than 10000 professionals in Europe and beyond, they have had more than 15000 candidates attending online skills browsing and exam facilities. They unite about 60 accredited VETs as training bodies in 18 EU countries. The facilities are owned by the ECQA, and the premise is entirely independent from other beneficiaries and/or partner organisations in the consortium.

ECQA Project Exploitable Outcomes

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
GreenSCENT Competence Framework	**Consortium**	**Report**	**End of the project**	**Open License**
	Future Exploitation			
	The Competence Framework will be the main result of the project as requested by the original call for proposal. Its use will be promoted in EU educational institution at all educational level in a lifelong learning perspective. The competence framework is the basic foundation for all future certification/exam activities planned after the project lifetime.. The competence framework will be then promoted as a tool for course designers and educators for creating new programs and educational activities targeting sustainable education objectives in line with the EU Green Deal. The finalized document shall work as a "living" Document for a community to constantly work on it for future adaptation.			

Table 50: ECQA- GreenSCENT Competence Framework

Project Exploitable Outcome	Developer/Owner	Output	Time to Market	Licenses
Skillcard & Exams	**ECQA & CSR company**	**Exam portal**	**End of the project**	**Commercial**
	Future Exploitation			
	The Skill cards of the different Levels and the certification (ECCEL) will be supported in the future on a business basis. As ECQA is not giving any trainings, we concentrate mainly on the exam and the certification part. This means that ECQA takes care of a free access to an exam or certification without the need of a training (knowing that training supports the probability of passing the exams). The exam/certification is making sure that the agreed skills and competences of the skill cards are met. This will be in cooperation with the community that takes care of the competence framework and the skill card in the future. This certification will be disseminated and marketed in the channels of the ECQA GmbH itself (newsletter and social media channels) as well as on visited conferences and events.			

Table 51: ECQA- Skillcard & Exams

This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101036480

5. Conclusion

This document is the result of the work carried out within Task 6.1 – Dissemination Activities (M1-M36), Task 6.2 - SCENT clustering and peer learning activities (M3-M36) and Task 6.3 Sustainability and Exploitation (M3-M36). It represents a key output of WP6 Impact and Outreach, to demonstrate accurate dissemination and communication of project activities, together with the future exploitation of key outcomes.

The output of this deliverable is critical for the preparation of *GreenSCENT exploitation report* (M36) and this document, requested for M18, aimed to set the analytical basis for the definition of the sustainable business model that will be presented at the end of the project.

This deliverable was mainly prepared by ENG, UAB and BSC but all partners involved in WP6, have contributed to achieving the following objectives:

- a detailed report of the dissemination and communication activities and initiatives conducted up to M17;
- an updating of project market underground, particularly important also for the future definition of the value proposition and sustainable business model;
- the target market groups analysis;
- an exploitation- oriented description of the most significant project outcomes.

Regarding Communication and Dissemination, the strategy will be modified and adapted, as necessary, to enhance and augment the project's influence on the intended stakeholders and target audience, thereby effectively communicating the GreenSCENT vision to the European community. This adjustment aims to optimize the project's impact and ensure a comprehensive understanding of its goals and objectives among the European community.

Since exploitation is a key commitment for the GreenSCENT Consortium, in order to achieve the final expected results for Task 6.3, some fundamental steps are needed. In particular, the sustainability business model for the exploitation will have to be done from several points of view, considering the type of partner, the business/knowledge orientation and the sustainable revenue model.

First of all, it will be necessary conducting periodic continuous analysis to understand market needs and emerging trends. Then, there should be continuous updating of existing competitors in the reference markets. It is also crucial to constantly analyse the external environment, particularly in relation to the market and environment, which encompasses both private and public entities such as competitors or governmental entities. The strengths and weaknesses of the proposed solutions need to be regularly analysed to understand the advantages and disadvantages of GreenSCENT. It will also be important building a strong interest among all partners in the concrete exploitation of the outcomes and assets of GreenSCENT framework. The goal is to go beyond individual partners results described in this document and integrate the exploitation plan of GreenSCENT solutions and services, planning a joint exploitation strategy. Since the project is in the mid phase, arguably some of the considerations outlined, will have an evolution during the next few months.

This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101036480

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