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Programmed biodegradation capability of bio-based materials and products, validated in specific environments

MAGICBIOMAT

Manufacturing Guiding Tool for Circular and Programmed Biodegradable Materials Under Open Environment Conditions

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Acronyms

EU	European Union
GA	Grant Agreement
WP	Work Package
D	Deliverable
CDE	Communication, Dissemination, Exploitation
EC	European Commission
AI	Artificial Intelligence
IP	Intellectual Property
B2B	Business to Business

Executive Summary

The MAGICBIOMAT project aims at developing a portfolio of circular bio-based materials with programmed biodegradability demonstrated through two applications with highly concerning rates of littering: mulching films and paper-based packaging, tested in open environment conditions (soil, fresh water and marine) as well as different EU climates.

The project brings together a multidisciplinary team of 7 partners, coordinated by the Technological University of Shannon (TUS) in Ireland, in partnership with the University of Padova (Italy), Isotech Ltd (Cyprus), The French Plastic Research Center (CTIPC), Organik Kimya Sanayi ve Ticaret AS (Turkey), Digiotouch OÜ (Estonia) and the University of Sheffield (UK) and is aligned with key European and global sustainability initiatives, including the EU Green Deal and the United Nations Sustainable Development Goals (SDGs).

This document presents the strategy and plan for Communication, Dissemination, and Exploitation (CDE) for the MAGICBIOMAT project. It outlines the CDE objectives, communication tools, key messages, and target audiences to effectively disseminate the project's work and outcomes and also introduces a set of performance indicators to track the success of CDE activities and guide improvements throughout the project.

The CDE strategy will constantly evolve throughout the MAGICBIOMAT project, ensuring that any emerging activities are also included in the performance indicators. At the conclusion of the project an updated version of the CDE strategy will be included offering a comprehensive assessment of the project's impact, which will be used to evaluate the effectiveness of the communication and dissemination efforts.

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1. Introduction

The MAGICBIOMAT project, funded under Horizon Europe, aims to address the critical challenge of plastic pollution by developing biodegradable materials that align with the principles of the circular economy.

MAGICBIOMAT's overarching objective is to perform research and development, empowered by a trustworthy Artificial Intelligence (AI) based manufacturing guidance tool, to create novel circular materials capable of programmable biodegradation, which will be validated in both controlled and open environment conditions, and make recommendations for effective labelling systems. By integrating AI-powered manufacturing tools and biodegradation testing, the project aims to deliver high-performance materials that break down safely in the environment, contributing to the EU's Green Deal and the Circular Economy Action Plan.

This document outlines the Communication, Dissemination, and Exploitation strategy and plan for MAGICBIOMAT. It details the strategy for engaging stakeholders, disseminating research outcomes, and ensuring the exploitation of the project's innovations. Key elements of the plan include:

- Clear communication of MAGICBIOMAT's goals and outcomes to a wide range of stakeholders.
- The key messages about biodegradable materials and the circular economy that the project aims to communicate.
- Use of multiple channels and tools, including social media, publications, and events, to share results with academia, industry, policy makers, and the general public.
- A focus on engaging industry partners and policy makers to drive the adoption of MAGICBIOMAT's novel results

The CDE will evolve in response to emerging needs and will be updated periodically.

Through a comprehensive approach to communication, dissemination, and exploitation, MAGICBIOMAT aims to increase visibility, engage stakeholders, and drive widespread adoption of its groundbreaking biodegradable solutions. These activities are essential for ensuring the success of the project and its contribution to a more sustainable and circular economy.

2. Communication, Dissemination & Exploitation strategy

The main objective of the MAGICBIOMAT *Communication, Dissemination and Exploitation* strategy[1], which is designed with European Commission best practice guidelines in mind, is to outline concrete and targeted measures related to external communication, dissemination and stakeholder engagement activities. The strategy is structured to primarily identify the stakeholders, means of the stakeholder engagement, followed with types, channels, and tools of the communication and dissemination activities. Exploitation is only touched upon in this strategy since a detailed Exploitation Strategy and Plan will be developed later in the MAGICBIOMAT project (Deliverable 11.1).

2.1. Definition of Communication, Dissemination & Exploitation

Effective communication, dissemination, and exploitation are fundamental to ensuring the success and impact of the MAGICBIOMAT project. Strategic planning of the communication, dissemination and exploitation activities already starts before the project at the proposal stage (see Figure 1). **Communication** is a strategically planned process that begins at the outset of the project and continues throughout its entire lifetime. It is aimed at promoting the project and its results to a wide range of audiences, including the scientific community, industry professionals, policymakers, and the general public. As defined by the European Commission (EC Research & Innovation Participant Portal), communication requires strategic and targeted efforts to engage audiences and provide information about both the project's activities and its results, while encouraging a two-way exchange of ideas and feedback.

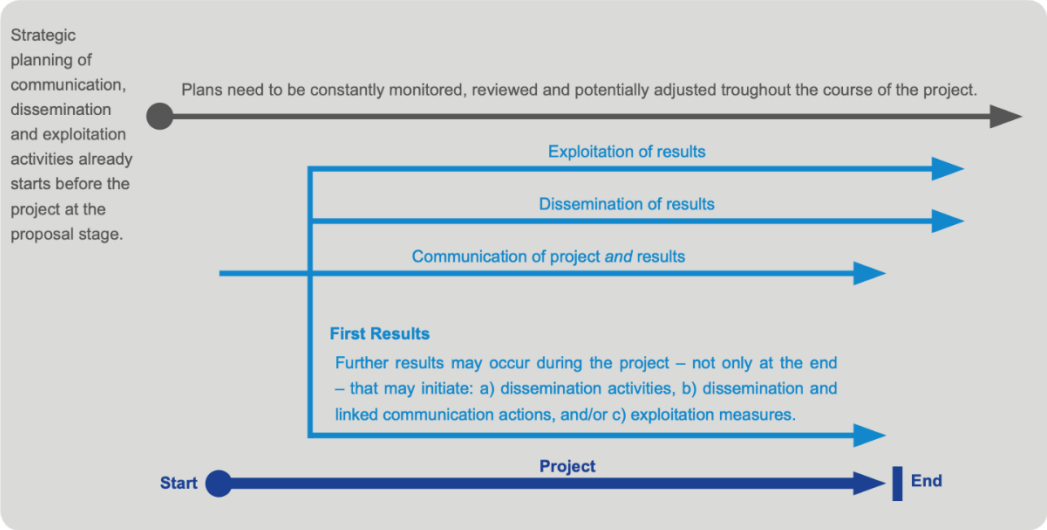


Figure 1 CDE planning process[2]

[1] This is a live document - a detailed Exploitation plan will be provided during period 2 as part of Deliverable 11.1

[2] European Union (2019). *EU Research and Innovation – A guide for participants*. Available at: https://op.europa.eu/en/publication-detail/-/publication/3bb7278e-ebf3-11e9-9c4e-01aa75ed71a1/language-en

Dissemination, on the other hand, involves the public disclosure of the project's results through appropriate means[3], such as scientific publications, media coverage, and presentations at conferences. This process ensures that the findings are accessible to a broad audience and can be applied in further research or practical applications. According to the EC, dissemination refers specifically to the public sharing of results through mediums such as peer-reviewed journals, reports, and other accessible formats.

Finally, **exploitation** refers to the utilization of the project's results[4] to drive further research or to develop new products, processes, or services. This may involve creating commercial opportunities, advancing product development, or contributing to standardization activities. The effective exploitation of the MAGICBIOMAT project's outcomes is essential to ensuring that its innovations—such as biodegradable materials and AI-powered manufacturing tools—are taken up by industry, integrated into policy, and contribute to global sustainability goals.

Together, effective communication, dissemination, and exploitation will ensure that the MAGICBIOMAT project maximizes its reach, engages key stakeholders, and fosters lasting impact beyond the project's lifetime.

2.2. MAGICBIOMAT CDE explained

The Communication, Dissemination, Exploitation activities will be coordinated through dedicated tasks in Work Packages 10, 11, 12. The objective of Work Package 10 is to develop and implement a comprehensive communication and dissemination strategy, establish a strong visual identity and media presence, and effectively utilize various channels to ensure broad and targeted sharing of the project's work and solutions with key stakeholders. Various means, messages and media will be used to ensure the project maximizes its outreach to and impact on wider society and targeted audiences. Communication and dissemination resources will be developed, paying particular emphasis on establishing a strong visual identity to enhance the project's recognition. These will include communication templates, social media accounts, and resources for the continuous update of the project website. Specific outreach and citizen engagement activities such as Massive Online Open Courses (MOOCs), social media, and public outreach campaigns, will also be implemented to reach target audience groups, ensuring that the project's impact reaches beyond the research community. Activities will be continuously monitored, and their impact will be reported in deliverables at Months (M) 18, 36 and 48. The dissemination, communication and exploitation activities will be separated in three project periods:

⇒ Period 1 (WP10, M1 – M18): The focus during this period is on laying the groundwork for communication and dissemination efforts. WP10 is dedicated to communication and

[3] ibid
[4] ibid

dissemination, and will ensure that the project's objectives and early results are clearly communicated to all stakeholders. During this initial phase of the MAGICBIOMAT project, the actions and tools needed for effective engagement and visibility will be outlined and communication activities will commence as part of WP10. There are three deliverables during this initial phase under WP10: (i) the present deliverable, D10.1- *Plan for Communication and Dissemination* - developed within the framework of Task 10.1, (ii) the second deliverable D10.2 - *Communication Resource*s, a brief document presenting the communication and dissemination resources developed for the project, including the guidelines on the project's visual identity, (iii) and the final deliverable *D10.3 - Initial report on communication, dissemination and exploitation activities* to be delivered by month 18 of the project.

⇒ Period 2 (WP11, M19 – M36): In Period 2, as the project advances its technical work, the emphasis shifts to expanding dissemination efforts and engaging specific stakeholders. WP11 focuses on exploitation, aiming to apply MAGICBIOMAT's innovations in real-world applications. In this phase, the project will begin reaching out to industry professionals, end-users, and related EU initiatives, promoting the use of MAGICBIOMAT's biodegradable materials and AI tools through workshops, roundtables, and Business to Business events (B2B). The exploitation strategy will be rolled out to ensure the project's findings are integrated into ongoing research and industrial applications. Dissemination will also include scientific publications, focusing on sharing results with the academic community and facilitating further research in biodegradation and material science.

⇒ Period 3 (WP12, M37 – M48): In Period 3, the final phase of the CDE activities of the project focuses on sustaining outreach, engaging policy makers, and ensuring that exploitation activities drive long-term impact. WP12 will work closely with policymakers and standardization bodies, ensuring that MAGICBIOMAT's findings influence regulatory frameworks and industry standards for biodegradable materials. The focus will be on disseminating final results through policy briefings, publications, and final project conferences, ensuring that the project's innovations are adopted by relevant stakeholders. Key deliverables will include reports on knowledge transfer and final dissemination activities, promoting the project's legacy and integration into EU sustainability policies.

The CDE strategy and plan will be continuously monitored and updated yearly to ensure the project maximises its outreach to and impact on wider society and targeted audiences utilising specific Key Performance Indicators (KPIs) as explained in 6.1 Table 4.

3. The target Audience groups

"Communicating scientific content without identifying your audience type can be like screaming into the wind"[5]. Consequently, understanding the audience is crucial to ensuring that messages are effectively tailored and delivered in the MAGICBIOMAT communication strategy.

3.1. Definitions

There are three groups which can be clearly defined:

- ⇒ Audience: An audience connects to a message and reacts to it in some way
- ⇒ Stakeholders: A stakeholder connects to the organization, either individually or as a group, to help sustain the organization and keep it flourishing
- ⇒ Publics: A public connects to an issue and presses that issue to effect change. [6]

This understanding is critical in crafting effective science communication strategies. A successful communication strategy recognizes these differences, ensuring that content resonates with each group and generates the desired outcomes, whether it is raising awareness, fostering engagement, or encouraging action. This approach is particularly crucial for the MAGICBIOMAT project, where personalized messaging and targeted engagement will be key to maximizing the impact of its communication and dissemination activities.

3.2. Stakeholder Identification

The MAGICBIOMAT project addresses *Dissemination, Communication and Exploitation* by firstly identifying the target stakeholder groups, secondly the main message for each and finally the means through which to transmit these messages.

Key stakeholders include:

- ⇒ Academia/Scientific Community: Research institutions focusing on biodegradation, AI, plastic and bioplastics production, marine litter, waste management, and behaviour change.
- ⇒ Industry/Professionals: Plastics producers, raw material manufacturers, additives manufacturers and businesses in the circular economy.
- ⇒ Standardization Bodies: Groups working on biodegradation standards for materials.

[5] Understanding your Audience, The first step in communicating science https://medium.com/@lynnteresa/understanding-your-audience-the-first-step-in-communicating-science-c220dfda3423

[6] Wakefield, R., & Knighton, D. (2019). Distinguishing among publics, audiences, and stakeholders in the social media era of unanticipated publics. Public Relations Review, 45(5), 101821. https://doi.org/10.1016/J.PUBREV.2019.101821

- ⇒ Policy Makers: Government authorities and the European Commission focusing on the circular economy, sustainability, waste management, agriculture, fisheries etc.
- ⇒ Related Initiatives: Projects working on similar issues (e.g., bioplastics, biodegradability, AI manufacturing tools).
- ⇒ Civil Society: Advocacy groups interested in sustainability and waste reduction.
- ⇒ The broader general public: The public interested in environmental issues.

4. Key Messaging

Arising from the MAGICBIOMAT project objective described in the Executive Summary, a set of key messages have been defined taking into account that each key stakeholder group has different needs. Key messages correspond to main points of information to get across and they act as a road map to the CDE. For example, the scientific community will be engaged with messages about novel biodegradation approaches, while industry professionals will receive information about enzyme effectiveness and AI-powered tools for biodegradation.

These targeted messages[7] align with the interests and needs of each target group, ensuring relevance and impact.

- ⇒ *Academia/Scientific Community (Research Institutions Focused on Biodegradation, AI, Waste Management, Behaviour Change):*
  - MAGICBIOMAT is advancing the development and evaluation of biodegradable materials using advanced manufacturing techniques, additives and enzymes. The project integrates trustworthy AI manufacturing guidance tools to enable scalable, sustainable, and efficient production of biodegradable materials, contributing to circular economy research and innovation. MAGICBIOMAT is also contributing to the development of labelling recommendations based on behaviour studies.
- ⇒ *Industry/Professionals (Plastics Producers, Raw Material Manufacturers, and Circular Economy Businesses):*
  - MAGICBIOMAT's innovative biodegradable materials (enzyme effectiveness) are designed for practical industrial applications, such as packaging and agriculture. Powered by AI, our technology ensures cost-effective, scalable, and environmentally sustainable solutions for industries transitioning toward circular practices.
- ⇒ *Standardization Bodies (Groups Working on Biodegradation Standards for Materials):*
  - MAGICBIOMAT's lab and open environment research provides critical data on biodegradation standards for materials. By engaging with standardization bodies, the project aims to influence and develop standards for biodegradable materials to ensure their adoption across industries.
- ⇒ *Policy Makers (Government Authorities and the European Commission):*
  - MAGICBIOMAT's work on biodegradable materials and AI-powered manufacturing tools supports the EU Green Deal and Circular Economy Action Plan, offering practical solutions to

[7] Messaging is indicative

reduce plastic pollution and promote sustainability. We are committed to influencing policy frameworks that encourage the adoption of these innovations.

⇒ *Related Initiatives (EU Projects, Missions):*

- MAGICBIOMAT shares a commitment to sustainability and circular economy with other EU-funded projects. We actively seek synergies with similar initiatives to maximize the impact of our research and ensure a broader adoption of biodegradable material solutions across Europe.

⇒ *Civil Society:*

- MAGICBIOMAT is tackling the global challenge of plastic pollution by creating biodegradable materials that break down safely in the environment and highlighting the role of biodegradable plastics in environmental protection and marine and terrestrial (plastic) pollution prevention.

⇒ *Public:*

- We are engaging the public through outreach campaigns to raise awareness about the importance of sustainable materials and waste reduction in combating pollution.

Alongside the messaging, we must ascertain that there is a means by which the audience can be reached and that the audience can and wants to engage. This must be achieved through relevant tools and channels. These include traditional methods such as peer-reviewed publications, conferences, and newsletters, as well as modern digital methods like social media, Massive Open Online Courses (MOOCs), and project websites.

The use of multiple communication channels allows for broad outreach and ensures that the message is accessible to diverse audiences, including those who may not be reached through traditional academic or industrial networks.

5. CDE Channels & Tools

To ensure the effective communication and dissemination of the MAGICBIOMAT message and project results, it is critical to utilize a range of channels and tools that can effectively reach different stakeholder groups. These channels and tools will be selected based on the target audience group, the type of message being delivered, and the specific communication goals. The tools will allow the project to engage the different stakeholders through multiple touchpoints, ensuring that the information reaches a broad audience while also allowing for more in-depth engagement where necessary.

5.1. Visual Identity

All the MAGICBIOMAT communication tools share a common visual identity that will both identify it as well as differentiate it from other projects. The visual identity and details about the correct use of the visual identity are to be found in the MAGICBIOMAT *Visibility Guidelines* and *Brand Manual* documents (D 10.2).

5.1.1. The website as a central hub

The project website (www.magicbiomat.eu) will serve as the primary platform for all project-related information. It will be a comprehensive source of data, updates, and resources for all stakeholders, including the academic community, industry professionals, policymakers, and the general public. The website will include a wide range of content, such as detailed project information, technical reports, publications, downloadable resources, and event updates. Additionally, sections tailored to specific audiences (e.g., academia, industry, and NGOs) will make it easier for visitors to access the information most relevant to them. The website will constantly grow with the project and aims to also feature a blog and a podcast series to share timely updates, insights, and achievements throughout the project. By tracking metrics like visitor traffic and engagement, the website will be continuously improved to ensure maximum reach and usability.

5.1.2. Social Media Platforms

Social media plays a crucial role in engaging with a wide range of stakeholders. For MAGICBIOMAT, social media channels such as Facebook, LinkedIn, and YouTube will be established to build and maintain an active online presence. These platforms are effective for reaching out to both professional and general audiences, providing a space for sharing updates, news, and multimedia content. Social media will help to humanize the project, making it accessible and engaging for a broader public audience while still allowing for the distribution of more technical content to industry professionals and academic communities.

Whilst content such as project updates, infographics, videos and podcasts that highlight the project's impact on sustainability and the reduction of plastic pollution, will be shared across both Facebook and LinkedIn, the target audience differs on both these platforms. Therefore, LinkedIn will be used to mainly connect with industry professionals, academic researchers, and policy makers - the platform's networking

capabilities allow for interaction with experts, potential collaborators, and stakeholders who are interested in the project's technological advancements and innovations in biodegradable materials. On the other hand, Facebook will engage the broader public and civil society. Facebook's ability to facilitate interaction through comments and shares will help spread awareness.

YouTube will be used for creating and sharing video content, such as project introductions, interviews with key stakeholders and explainer videos. Videos are particularly effective for making complex scientific topics more accessible and engaging to a wide audience.

These social media channels will be managed to ensure regular updates, foster engagement with the audience, and track metrics to assess the impact of the posts.

5.1.3. Publications and Open-Access Repositories

The dissemination of research publications through peer-reviewed journals will be a cornerstone of MAGICBIOMAT's strategy. Scientific publications ensure that the project's findings are shared with the academic and research communities, contributing to the body of knowledge on biodegradable materials, biodegradation, behaviour studies, and circular economy strategies. Articles in well-known journals such as the *Journal of Cleaner Production* or *Polymer Testing* will be prioritized for sharing detailed research findings on the technical aspects of biodegradable plastics and their impact on the environment.

Furthermore, open-access repositories like *Zenodo and ResearchGate* will be used to share datasets**,** reports, and publications, ensuring that results are accessible to researchers and the broader scientific community, helping to foster transparency and encourage further research in the field

5.1.4. Events (Conferences, Workshops, and Webinars)

Conferences, workshops, and webinars will play an important role in disseminating the project's results to targeted audiences as they are essential for in-depth knowledge exchange, networking, and direct engagement with stakeholders. The MAGICBIOMAT project team will participate in conferences in the fields of sustainability, circular economy, biodegradation, and waste management, presenting research findings, sharing project updates, and networking with industry leaders, policymakers, and academic experts.

In addition to participating in external conferences, the project will organize its own workshops and webinars, focused on specific themes such as biopolymer development, biodegradable materials testing, and policy implications. These events will be organized regularly to maintain stakeholder engagement and foster collaborations with other EU-funded projects. Webinars, in particular, will be a cost-effective way to reach a global audience, allowing participants to join remotely and engage in discussions.

5.1.5. Newsletters

An annual digital newsletter will be used to keep all stakeholders up-to-date with the project's progress, events, publications, and other key milestones. It will be distributed to all project partners, collaborators, and subscribers and will feature project updates, important scientific results, upcoming events, and relevant news about biodegradable materials and circular economy initiatives.

5.1.6. Direct Engagement and Bilateral Meetings

Direct engagement through bilateral meetings and industry consultations will be used for more personalized communication with key stakeholders, including industry leaders, policymakers, and standardization bodies, providing a valuable opportunity for discussing the specific needs, concerns, and opportunities for collaboration, helping to ensure that the project remains relevant and responsive to the stakeholders' priorities. In addition, these meetings will be particularly helpful in advocating for regulatory changes.

5.1.7. Policy Briefs

Policy briefs will be essential tools for sharing the project's results and recommendations with policymakers and standardization bodies. These documents will summarize the key findings of the project and offer evidence-based policy recommendations, helping to inform the development of regulatory frameworks related to biodegradable materials and plastic pollution. By engaging with policymakers MAGICBIOMAT can influence future legislation on plastic waste and sustainability in the EU and policy briefings will be shared through direct meetings with policymakers, public events, and online platforms.

Table 1 Audience, Messaging, Engagement

Target stakeholder and/or audience groups	Key Message	Channels and Tools of Engagement
Academia/Scientific Community (teams working on biodegradation, enzymes, AI, waste management, behaviours)	MAGICBIOMAT is advancing the development and evaluation of biodegradable materials using advanced manufacturing techniques, additives and enzymes. The project integrates trustworthy AI manufacturing guidance tools to enable scalable, sustainable, and efficient production of biodegradable materials, contributing to circular economy research and innovation. MAGICBIOMAT is also contributing to the development of labelling recommendations based on behaviour studies.	Peer-reviewed publications, Conference participation, Research platforms (e.g. ResearchGate, Zenodo)
Industry/Professionals (e.g. plastic producers, raw material manufacturers)	MAGICBIOMAT's innovative biodegradable materials are designed for practical industrial applications, such as packaging and agriculture. Powered by AI, our technology ensures cost-effective, scalable, and environmentally sustainable solutions for industries transitioning toward circular practices.	Participation in industrial fairs, Connection to other projects/initiatives, B2B events, bilateral meetings, deliverables, social media, newsletters, website, final project conference

Standardization Bodies	MAGICBIOMAT's lab and open environment research provides critical data on biodegradation standards for materials. By engaging with standardization bodies, the project aims to influence and develop standards for biodegradable materials to ensure their adoption across industries.	Presentation in high impact EU initiatives for Circularity, Actions with Knowledge Centre for Bioeconomy hosted by the JRC, public deliverables, Peer-reviewed publications, Conference participation, Policy and Standardization Colloquium, final project conference
Policy makers (EC, public authorities working on waste management, agriculture, etc.)	MAGICBIOMAT's work on biodegradable materials and AI-powered manufacturing tools supports the EU Green Deal and Circular Economy Action Plan, offering practical solutions to reduce plastic pollution and promote sustainability. We are committed to influencing policy frameworks that encourage the adoption of these innovations.	Public deliverables, Policy Briefing, Policy and Standardization Colloquium, social media.
Related Initiatives (sister projects, other EU projects/Missions)	MAGICBIOMAT shares a commitment to sustainability and circular economy with other EU-funded projects. We actively seek synergies with similar initiatives to maximize the impact of our research and ensure a broader adoption of biodegradable material solutions across Europe.	Newsletters, meetings, social media, website and CORDIS, Policy and Standardization Colloquium, Final project conference
Civil Society	MAGICBIOMAT is tackling the global challenge of plastic pollution by creating biodegradable materials that break down safely in the environment and highlighting the role of biodegradable plastics in environmental protection and marine and terrestrial (plastic) pollution prevention.	Social media, website, popularised publications, MOOC, Final project conference
Public	We are engaging the public through outreach campaigns to raise awareness about the importance of sustainable materials and waste reduction in combating pollution.	Social media, website, popularised publications, MOOC, Final project conference

5.2. The CDE Plan

The CDE Plan for the MAGICBIOMAT project is designed to ensure that the project's findings are effectively communicated to all relevant stakeholders in a way that maximizes their impact. It focuses on clear, strategic actions, with the goal of reaching specific audiences using appropriate tools. The European Commission's guidelines stress that beneficiaries of EU research and innovation programs are legally obligated to disseminate and exploit results[8]. This obligation aims to transform research outcomes into scientific, economic, and societal values, aligning with the EU's vision of fostering a knowledge-based economy. By adhering to these principles, our strategy ensures compliance with EU standards while maximizing the impact of our research.

[8] .https://research-and-innovation.ec.europa.eu/strategy/dissemination-and-exploitation-research-results_en

The CDE Plan will be continuously monitored and updated yearly to ensure the project maximises its outreach.

Through the aforementioned targeted dissemination (*see Table 1 Audience, Messaging and Engagement*) stakeholders from academia and the scientific community will be introduced to the project's objectives and potential impact through scientific publications in open-access journals, presentations at conferences as well as policy briefings targeting regulators and policymakers. This will ensure that stakeholders will become familiar with the research behind the MAGICBIOMAT project as well as with biodegradable plastics and circular economy strategies. Beyond this, dissemination will also be employed through stakeholder education where informational strategies will be employed to provide them with in-depth knowledge, ensuring that clear, structured information is shared effectively with academia, industry, and policy makers providing for the basic grounds of successful communication, for example through workshops and online training sessions. These efforts will be ongoing throughout the project. We aim to generate dialogue and therefore facilitate the more effective dissemination of the project, ensuring that engagement is not just top down and allowing stakeholders to contribute insights. As the project progresses, MAGICBIOMAT will also focus on publishing results in industry journals and sending out newsletters to keep industry professionals and academia updated. Policy-related dissemination aims to increase halfway through the project, as results and outputs become available, with the project contributing to EU initiatives. By the third year, MAGICBIOMAT will be actively involved in the Policy and Standardization Colloquium, where it will present its findings and work alongside policymakers to inform the future of biodegradable materials in Europe.

Raising public awareness is a central part of the CDE plan. MAGICBIOMAT will use public outreach campaigns (such as social media, surveys, brochures, etc.) to engage with citizens, highlighting the role of biodegradable materials in tackling plastic pollution. Public campaigns will focus on both informing and educating the general public about biodegradable plastics and how these materials can help reduce the burden of plastic waste in our ecosystems. Through public events and collaborations with NGOs, MAGICBIOMAT will facilitate broader discussions about sustainable materials and their role in the circular economy. These activities will be carried out continuously throughout the project, with a particular focus in the first period, to raise awareness, followed by deeper engagement and evaluation in the second and third periods.

Table 2 Dissemination and Communication Activities Focus by Period

Period	Focus of Activities
Period 1 (Months 1-18)	Establishing the communication base (CDE strategy, website, social media, templates). Initial outreach to academia, scientific community, industry, and policymakers through scientific publications, conferences, and workshops. Raising awareness about MAGICBIOMAT's objectives, biodegradable materials, and circular economy solutions.

	Engaging key stakeholders
Period 2 (Months 19-36)	Expansion of engagement efforts with academic institutions, industry professionals, and policymakers. More frequent publications in scientific and industry journals, and workshops to further educate stakeholders. Amplifying social media campaigns and public outreach events to engage the broader public. Engaging in other EU synergies
Period 3 (Months 37-48)	Active involvement in policy and standardization discussions, including EU colloquiums and engagement with regulatory bodies. Publications in journals, industry reports, and final project event to showcase the project's achievements. Ensuring exploitation activities to drive industry adoption and policy integration of biodegradable materials. Final phase of public outreach campaigns and ongoing engagement with NGOs and civil society.

5.3. CDE Timeline

A number of communication activities will take place during the first half of the project however the most significant dissemination activities will take place as research outputs become available.

Table 3 and Figure 2 reflect a detailed plan for the CDE activities that will be implemented in the first 18 months of the MAGICBIOMAT project. A second CDE plan for the following 18 months will be produced by Month 10 for a more precise timeline of activities.

Table 3 Key CDE Activities M1 - 18

Activity	Description	Timeline	Stakeholder group	Dissemination	Expected Outcomes
Launch of Project	Kick-off meeting, Present project objectives and concept	Month 1	Academia, Industry, Civil Society, Public, Policy Makers	Press Release, Partners social media, News websites	Increased visibility
Develop Communication Material	Creation of project logo, PowerPoint presentation template, brochure, poster template.	Month 1 - 6	Internal & External stakeholders	N/A	Increased visibility and a recognizable project identity
Launch Project Website	Present the project's objectives, concept, and pilot lines. Updates provided regularly.	Month 6	Academia, Industry, Civil Society, Public, Policy Makers	2 Social Media Posts (Facebook, LinkedIn)	Website traffic growth. Focus on engaging stakeholders (academics, industry, NGOs).
Webinars and Training	Facilitate informal and formal discussions around MAGICBIOMAT	Month 12 *Every 6 months	Academia, Industry, Civil Society	Website article, 2 Social Media Posts	Engagement with academic, industry, and NGO communities.

	topics, including biodegradable materials and AI. MOOC on circularity.	between Months 6-48			Evaluation of participation and engagement.
Social Media Presence	Active presence on MAGICBIOMAT's own Facebook, LinkedIn and YouTube as well as partners' social media.	Months 6-18	General Public, Academia, Industry, Civil Society	Facebook, LinkedIn, YouTube (up to 1 post/Month including video, podcasts, visuals etc.)	Increased engagement: Promoting project activities through social media platforms.
Project Events	Present the project at sectoral events, fairs, and workshops.	Months 9-18	Academia, Industry, Civil Society	Workshops, Conferences, Fairs	Knowledge dissemination through workshops, conferences, and clustering activities. Foster collaborations and networking opportunities.
EC Communication Channels	Share updates about MAGICBIOMAT through CORDIS News, European Commission's newsletters, and event pages.	Throughout Period 1	General public, Academia, Industry, Civil Society	CORDIS, EC Event Pages, EC Newsletters	Awareness of the EC funding: Promoting MAGICBIOMAT's contribution to EU sustainability goals.
Newsletter	Provide updates on the project's milestones and innovations related to biodegradable plastics.	Month 12	Academia, Industry, Partners	Annual Newsletter, email distribution	Growing subscriber base: 100 subscribers by Month 18. Increase engagement and awareness of the project within relevant communities.

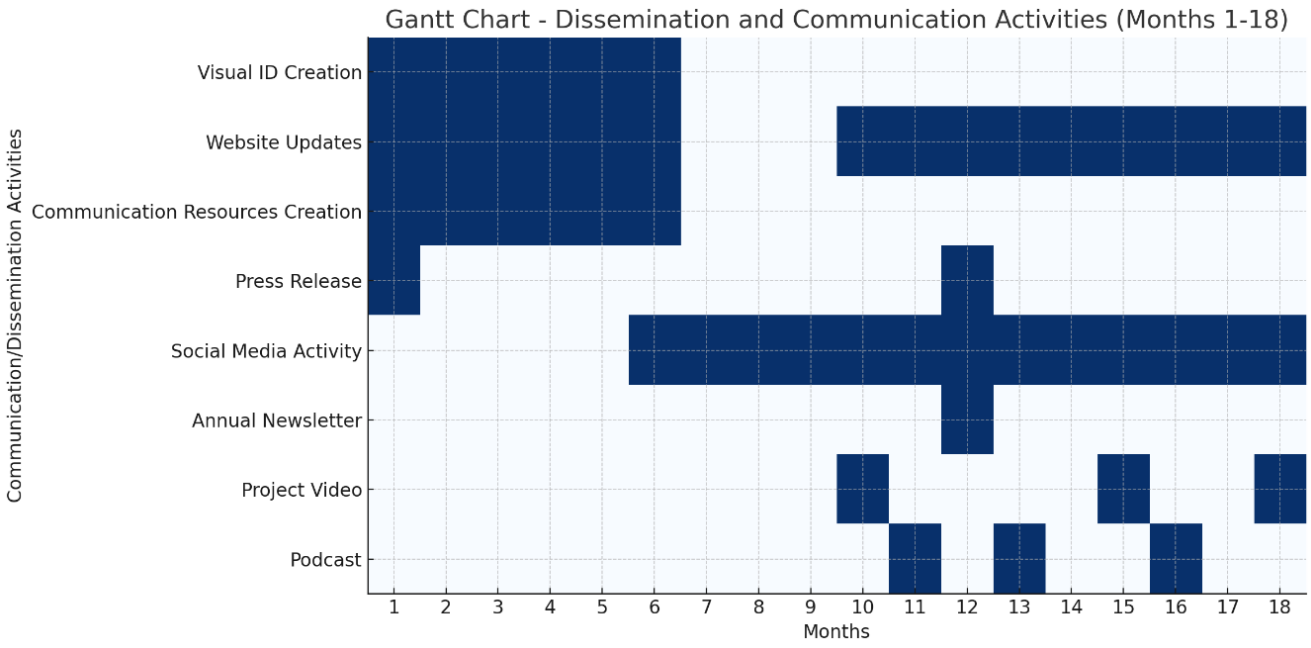


Figure 2 CDE Gantt Chart for Months 1 – 18

6. Monitoring

To analyse the impact of the CDE strategy different monitoring actions have been envisaged, depending on the activity, every 12 months. Evaluating these activities provides the opportunity to improve processes, based on feedback.

6.1. Key Performance Indicators (KPIs)

To ensure the successful execution of the MAGICBIOMAT project's CDE strategy, KPIs have been developed. These KPIs provide measurable benchmarks for assessing the impact and effectiveness of the project's communication efforts at each stage; they will be revisited as the project progresses to make sure that they adhere with the set project timeline and deliverables ensuring that activities are not only completed on time but also achieve the desired level of engagement, reach, and impact.

The KPIs will measure the completion of key deliverables and the reach of communication, dissemination and exploitation efforts. More specifically they will measure:

- Social media posts, impressions, website traffic.
- The level of stakeholder engagement (e.g., number of interactions and synergies formed).
- Help track the visibility of the project's work and the effectiveness of the resources produced (such as communication templates, social media accounts, and website content).
- The establishment of strategic partnerships and the implementation of industry and academic collaborations/synergies.
- The effectiveness of knowledge transfer activities (providing insights into how well the project is reaching out to and engaging its target stakeholders, including industry leaders, end-users, and academia).
- The influence of MAGICBIOMAT's findings on policy frameworks.
- The number of contributions to regulatory bodies (reflecting how the project contributes to shaping future regulations).

By utilizing these KPIs we can continuously monitor activities, assess their effectiveness, and adapt strategies to ensure the successful dissemination of its results. The use of KPIs in EU-funded projects is essential for tracking the success of dissemination and exploitation activities to ensure the long-term impact of the project outcomes.

Table 4 KPIs for CDE

KPI	Target	Measurement
Completion of communication and dissemination plans and resources (e.g. brand identity)	Completed deliverables (e.g., D10.1, D10.2)	Deliverables completed and approved
Creation of social media accounts	Create 2-3 social media accounts (FB, LinkedIn, YouTube)	Accounts created
Activity engagement (social media posts, website updates)	3-5 posts/quarter, website updates	Posts, website updates
Audience reach and engagement rates	Target reach: 10k social media impressions, 20% engagement rate	Website traffic, social media metrics (Google analytics: Unique visitors (2500 / 6000 at M18 /M48); Page views (3000 / 9000 at M18 / M48 LinkedIn/Fb analytics - Page followers: 200/400 at M18/42).
Newsletters	1 Newsletter/year	Number of newsletters distributed/ Number of people reached (Number of subscribers (100 / 200 at M18 / M48))
Stakeholder engagement (industry, academia, end-users)	Engage at least 5 industry leaders and 3 academic partners by M48	Tracking of meetings
Publications (Peer-Reviewed Papers, Industry Journals, etc.)	>15 peer-reviewed publications.	Number of papers, articles, or reports published
Partnerships and collaborations with other EU projects or initiatives	Form 3 synergies with EU projects/initiatives	Number of synergies/collaborations formed
Number of MOOCs	5 modules/12 online guest lectures	Attendance, feedback
Workshops for presentation of results	>3 workshops	Workshop attendance
Knowledge transfer activities and outcomes	Organize >2 knowledge transfer activities	Activities held, stakeholders engaged
Policy briefings delivered	2 policy briefings	Number of briefings delivered
Contributions to standardization bodies (e.g., ISO/CEN)	1-2 contributions	Number of contributions made to ISO/CEN

Engagement with policymakers and standardization bodies	Engage 5+ policymakers	Tracking of policymakers and standardization meetings
Dissemination of LCA studies and environmental testing results	Share results with 5+ relevant bodies	Number of studies disseminated
Videos, Podcasts, Blog Posts (other media e.g. PRs, media articles etc.)	5-10 videos, 5-10 podcasts, 5-10 blog posts	Number of videos/podcasts/blog posts produced

7. Exploitation of Results and Intellectual Property Management

The exploitation of results is equally important as dissemination, and steps will be taken to ensure that the MAGICBIOMAT research has a lasting impact on industry and policy. The project will create a clear exploitation strategy as per Deliverable 11.1, WP 11, during period 2, ensuring that results, including biodegradable materials and the AI-powered manufacturing tool, are transferred effectively to industry stakeholders. This will be supported by a strong intellectual property (IP) management system which will be developed during the same period and that will allow for the protection and licensing of innovations. Throughout the project, the MAGICBIOMAT team will identify potential IP and make sure that the necessary steps are taken to protect and exploit these results, whether through licensing agreements or technology transfer to manufacturers, in this way ensuring that its work can be adopted widely, contributing to the long-term success of the project.

8. Conclusion

This CDE strategy is a "live document" designed to maximize the visibility, impact, and adoption of the MAGICBIOMAT project. Through the adoption of a tailored approach across the identified target audience groups, the CDE strategy ensures that the project's research on biodegradable materials and sustainable manufacturing processes is effectively communicated, disseminated, and exploited to achieve long-lasting results; whilst simultaneously aims to promote the MAGICBIOMAT project through scientific publications, industry workshops, public outreach campaigns and policy briefings as well as through the creation of new synergies, aiming to raise awareness, and create dialogue around the challenges of plastic pollution and the role of biodegradable alternatives.

References

- Wakefield, R., & Knighton, D. (2019). Distinguishing among publics, audiences, and stakeholders in the social media era of unanticipated publics. Public Relations Review, 45(5), 101821. https://doi.org/10.1016/J.PUBREV.2019.101821
- Teresa, L. (2020). 'Understanding your audience: The first step in communicating science'. *Medium*. Available at: https://medium.com/@lynnteresa/understanding-your-audience-the-first-step-in-communicating-science-c220dfda3423
- McCarthy, E., & Grant, W. J. (2024). What are we talking about when we are talking about the audience? Exploring the concept of audience in science communication research and education. Public Understanding of Science. https://doi.org/10.1177/09636625241280349
- European Union (2019). *EU Research and Innovation – A guide for participants*. Available at: https://op.europa.eu/en/publication-detail/-/publication/3bb7278e-ebf3-11e9-9c4e-01aa75ed71a1/language-en
- European Commission (EC) (2023). *Dissemination and exploitation of research results*. Available at: https://research-and-innovation.ec.europa.eu/strategy/dissemination-and-exploitation-research-results_en