



Project Acronym: PLAMINPACK

Project title: PLAnt-based antiMicrobial aNd circular PACKaging for plant product



Deliverable D6.3b: Plan for the Dissemination, Exploitation, Communication and Outreach (DECO)

Responsible beneficiary: UNIP I

Date of delivery: 31 december 2025 (M18)

Period covered by the Deliverable D6.3b: from 01/01/2025 to 31/12/2025

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Periodic period: 1st

Deliverable 6.3.b Plan for the Dissemination, Exploitation, Communication and Outreach (DECO)

Project name	PLAMINPACK
Work Package	Dissemination, Exploitation, Communication & Outreach (DECO) activities
Deliverable N°	6.3b
Contractual Delivery	31/12/2025
Submission Date	31/12/2025
Dissemination Level:	Confidential

History of changes

Document version	Date	Changes introduced
V1	16/12/2025	First draft
V2	23/12//2025	Complete draft by UNIPi
V3	30/12/2025	Revised version by UNIBAS, UCA, UOI and APT

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1. INTRODUCTION

This document updates and consolidates the Communication and Dissemination Plan of the PLAMINPACK project in accordance with PRIMA requirements and guidelines. It supports the Consortium in systematically planning, implementing, and monitoring dissemination activities, ensuring effective, targeted, and impact-oriented communication throughout the project lifetime. It is conceived as a living document and will be updated on an annual basis to reflect project progress, evolving needs, and emerging communication trends. Serving as a common reference framework for all partners, the plan promotes coordinated, transparent, and co-creative dissemination actions involving PLAMINPACK partners and relevant stakeholders, fully aligned with PRIMA principles.

During the first reporting period, dissemination activities focused on the main PRIMA-recommended channels, including scientific publications, the project website, and social media platforms, with the objective of increasing project visibility and facilitating access to project information and results. In parallel, training activities were implemented regularly by the Consortium partners throughout the first reporting period, in line with PRIMA's emphasis on capacity building and knowledge transfer. Initial networking actions were also undertaken to foster interaction with external stakeholders. This integrated approach enabled the active involvement of students and early-stage researchers, effectively disseminating the PLAMINPACK concept and representing the main contribution of the first reporting period to outreach on the project's thematic priorities.

By Month 18, the PLAMINPACK project achieved several relevant technical results. New raw materials were developed through the extraction of agricultural waste derived from tangerine, date, and strawberry residues. Extracts with antioxidant properties, as well as their corresponding residual fractions, were successfully obtained. In addition, chitosan was produced from the rearing of *Hermetia illucens*. These bio-based components were subsequently combined with biobased and compostable plastics to formulate materials suitable for applications such as nets, films, and trays. The project is now entering a strategic implementation phase, as the prototyping activities are scheduled to start in the coming months.

At the current stage of the project, exploitation activities are limited to results generated within WP1, in line with PRIMA exploitation rules and the project's IPR management strategy. WP2 has achieved preliminary outcomes related to material selection; however, final prototypes are not yet available and therefore not ready for exploitation. Initial exploitation-related actions were promoted by UCA through a training initiative organised in Marrakech in December, which included the presentation of Africa Pack and a dedicated discussion session with participants.

Africa Pack is a Moroccan company specialized in the promotion and commercialization of packaging machinery and packaging solutions. During the seminar, the company's director provided an overview of the types of packaging currently used by Moroccan fruit and vegetable producers, with particular emphasis on packaging solutions for export markets. The presentation highlighted the functional requirements of such packaging,

including protection, shelf-life extension, and compliance with international standards, with a specific focus on modified atmosphere packaging (MAP) solutions for fresh, respiring products such as fruits and vegetables.

The representative expressed strong interest in the final packaging solutions targeted by the PLAMINPACK project and in their potential promotion within the Moroccan market. At the same time, attention was drawn to possible application constraints, particularly related to production and market uptake if the final packaging solutions were associated with high costs. This feedback was considered highly relevant for assessing the market feasibility and competitiveness of PLAMINPACK outcomes and will be taken into account in future exploitation and cost-optimization activities.

Furthermore, a stakeholder engagement meeting is scheduled for 14 January 2026 in Hohenheim. This meeting will focus on the results achieved to date, particularly concerning extraction processes and material selection, and will be conducted in compliance with PRIMA requirements on confidentiality and intellectual property protection. Only non-sensitive results will be disclosed, ensuring that future exploitation pathways for the key exploitable results—still under development—remain fully preserved.

2 OBJECTIVES OF THE DISSEMINATION, COMMUNICATION AND EXPLOITATION PLAN

The PLAMINPACK dissemination and communication plan defines a structured approach to ensure effective sharing of project results and to maximize their impact. **Dissemination** activities target professional, academic, and industrial stakeholders, providing tailored information to support the uptake, application, and further development of PLAMINPACK outcomes. In parallel, **communication** activities focus on increasing project visibility and awareness among broader audiences, including the general public, policymakers, and key sectoral actors such as industry representatives and farmers. By integrating dissemination and communication actions, the plan ensures wide **outreach** while fostering meaningful stakeholder engagement and support for the project's objectives. In addition, the plan addresses **exploitation** by outlining pathways to transfer PLAMINPACK innovations into relevant sectors, contributing to long-term impact and sustainability.

No updates are foreseen for the objectives of the Dissemination, Communication, and Exploitation Plan, as those described in Deliverable D6.3a remain unchanged and valid at this stage of project implementation.

3 STAKEHOLDERS AND TARGET GROUPS

As stated in Deliverable D6.3a, effective communication within the PLAMINPACK project requires reaching the appropriate target audiences through the most suitable and efficient channels. A key prerequisite for achieving this objective is the accurate identification of the preferred communication tools and platforms for each audience, ensuring that project messages are delivered in a clear, accessible, and impactful manner.

In Deliverable D6.3a, the communication and dissemination objectives and corresponding strategies were defined for the following target groups: (1) industry stakeholders and farmers, (2) policymakers, (3) students and early-stage researchers, and (4) the general public and civil society actors. For each of these groups, specific goals, key messages, and communication channels were identified in line with their interests, needs, and levels of technical expertise.

In the present deliverable, updates are provided for each target group to reflect the progress achieved during the reporting period, the evolving focus of project activities, and the refinement of communication priorities. These updates aim to further enhance the effectiveness of communication actions, ensure continued alignment with PRIMA principles, and support the overall impact of PLAMINPACK by strengthening engagement with all relevant stakeholders.

3.1 Target audience 1: industry and farmers

Engagement with industry stakeholders is a key priority of the PLAMINPACK project, with the objective of fostering the adoption and integration of its bio-based packaging technologies along the value chain. The project aims to empower farmers to valorise plant waste residues as new sources of products and income, while supporting industry actors in replacing fossil-based packaging with efficient, compostable alternatives that reduce food losses and environmental impacts. Through the demonstration of practical applications, case studies, and prototype solutions, PLAMINPACK promotes technology uptake and collaboration among industry associations, SMEs, start-ups, manufacturers, recyclers, and farmers' organisations. Key messages highlight the technological, commercial, and environmental advantages of PLAMINPACK solutions, including improved material performance, cost reduction, regulatory compliance, and alignment with EU circular economy objectives. Engagement activities are implemented through industry workshops, technical webinars and training sessions, newsletters and case studies, and participation in major sectoral events, ensuring continuous dialogue with stakeholders and supporting the positioning of PLAMINPACK technologies as a reference for sustainable bio-packaging management.

During the first reporting period, the direct involvement of industry stakeholders was intentionally limited, as the project focused on consolidating and advancing core technical activities in order to generate robust and tangible results. This initial phase was necessary to ensure that future engagement with industry would be based on validated data, credible prototypes, and clearly defined technological achievements.

Nevertheless, indirect engagement with industry actors was actively pursued through digital communication channels. In particular, social media played a key role in maintaining visibility within the industrial and professional communities. Project-related news and updates were primarily disseminated via LinkedIn, a platform widely used by experts and professionals in the fields of packaging, biotechnology, and sustainable materials. These communications were published by the project coordinator, ensuring immediate visibility among approximately 400 direct contacts, of which an estimated 40% belong to industry sectors relevant to PLAMINPACK. In addition, project partners further amplified the reach by sharing and reposting the content within their own professional networks.

Several of these posts redirected readers to the official PLAMINPACK website, where detailed and regularly updated information on project objectives, activities, and early achievements is made available. This approach enabled the project to establish early awareness and interest among industry stakeholders, laying the groundwork for more structured and direct engagement actions planned for the subsequent phases of the project, when technical results and prototypes will be sufficiently mature to support exploitation-oriented discussions.

Regarding farmers, a specific initiative carried out in PLAMINPACK can be mentioned. In fact, Christian Cravotto of APT took part in the "Village de la Bioéconomie" at the Foire de Châlons on August 30th 2025, where he presented the PLAMINPACK project to an

audience mainly composed of agricultural stakeholders. Similar initiatives should be promoted in the second reporting period.

3.2 Target audience 2. policy makers

Engagement with policymakers aims to align PLAMINPACK innovations with European and national regulatory frameworks, supporting the objectives of the EU Green Deal, the Circular Economy Action Plan, and policies related to bioplastics and sustainable packaging. By providing evidence-based data and concrete technical insights, the project seeks to inform the development of forward-looking regulations that enable the adoption of sustainable, biobased packaging materials and effective recycling solutions. Targeted stakeholders include European and national environmental authorities, EU institutions, and relevant agencies in the Mediterranean area. Key messages emphasize PLAMINPACK's contribution to policy objectives, its potential to address existing regulatory gaps in the packaging sector, and the economic and environmental benefits of its scalable solutions. Engagement activities will be carried out through dedicated workshops and dialogue sessions with regulatory bodies, facilitating knowledge exchange and supporting evidence-based policymaking.

During the current reporting period, a comprehensive review of information related to packaging systems in Europe and in the MENA countries was carried out. In parallel, the relevant legislative frameworks governing both packaging and agricultural sectors were analysed, with particular attention to regulations affecting perishable products. These analytical activities, which are still ongoing, represent a necessary preparatory step to support future actions aimed at promoting the adoption of biodegradable, renewable, and recyclable packaging solutions for food and agricultural applications.

In the second reporting period, stakeholder engagement activities will be further strengthened. Key stakeholders involved along the value chain will be contacted through dedicated dissemination and networking actions and will be invited to participate in interviews and consultations. The information collected will be used to develop a roadmap describing the PLAMINPACK value chain, including technical, economic, and organizational aspects. In this context, the results of the Life Cycle Costing (LCC) study, together with the assessment of the investments required for the implementation of the novel packaging solutions, will provide a solid evidence base for defining realistic exploitation pathways.

These inputs will contribute to the preparation of a comprehensive dissemination and exploitation plan for the post-project phase, to be delivered at Month 36. In addition, policy and regulatory recommendations tailored to the Mediterranean area will be formulated on the basis of project results and stakeholder feedback. These recommendations may be consolidated into a position paper, to be released as a public document, supporting informed decision-making and contributing to the policy dialogue on sustainable packaging in the Mediterranean region.

3.3 Target audience 3. students

Engagement with the academic community aims to disseminate PLAMINPACK's advanced research results, foster interdisciplinary collaboration on biobased packaging technologies, and inspire students and early-stage researchers to contribute to sustainable innovation. The project targets university researchers, faculty members, graduate and postgraduate students, educational institutions, and international research networks active in sustainability, circular economy, and biobased materials. Key

messages highlight PLAMINPACK's scientific innovation, its environmental relevance, and the opportunities it offers for collaboration, co-publication, and educational use. Engagement activities include social media outreach, open-access scientific publications, and dedicated academic webinars and workshops, supporting knowledge exchange and strengthening the project's scientific impact.

During the first reporting period, students represented the primary target audience of PLAMINPACK activities. This strategic focus was considered particularly effective for building a motivated and informed community interested in new products, technologies, and practices capable of improving environmental sustainability. By engaging students at an early stage of their academic and professional development, the project aimed to foster awareness, knowledge transfer, and long-term capacity building in the fields of bio-based materials, sustainable packaging, and circular economy practices.

In accordance with the training plan submitted at Month 6, several training and educational activities were successfully implemented by the consortium partners throughout the reporting period. These activities were integrated into academic curricula and extracurricular initiatives, reaching students at different educational levels and disciplinary backgrounds.

In addition to in-person training and academic integration, the project also plans to develop a series of educational videos targeting a broader audience, including students, early-stage researchers, and industry professionals. These videos will present PLAMINPACK's objectives, technologies, and key results in an accessible and engaging format. Production will begin in the second year of the project, and the videos will be disseminated through the project website. A potential risk identified is lower-than-expected visibility or engagement. To mitigate this, the consortium will review the distribution strategy by Month 24, reinforce promotion through social media channels, and actively involve all partners in sharing the content through their institutional and professional networks, thereby maximizing outreach and educational impact.

Several hands-on training and outreach activities were carried out during the reporting period. On 14 March 2025, APT (Morad Chadni and Christian Cravotto) delivered a half-day training seminar for students of the Université de Reims Champagne-Ardenne (URCA), focusing on innovative extraction and purification techniques relevant to WP1. A similar outreach initiative took place on 2 June 2025, involving senior students from the Collège Raymond Sirot, where the principles of biobased materials and sustainable packaging were introduced. Christian Cravotto took part in the "Village de la Bioéconomie" at the Foire de Châlons on August 30, where he presented the PLAMINPACK project to an audience mainly composed of agricultural stakeholders. In October, APT also organized a one-hour educational visit for 4th- and 5th-year students from the Collège de Bazancourt, further strengthening engagement with younger audiences.

On 19 May 2025, Christian Krupitzer (UHOH) delivered a lecture entitled "Digital Food Twins – Concept, Use Cases, Potential" at the Research Seminar on Food Chemistry and Food Quality hosted by TU Munich. The lecture provided insights into digital tools for food quality monitoring and demonstrated their relevance and alignment with WP4 objectives.

At the University of Basilicata (UNIBAS), within the Bachelor's degree course "Insect Biotechnologies", a dedicated seminar entitled "Insects as Key Players in the Circular Economy" was delivered. The session introduced students to the use of insects as a

sustainable source of chitin and chitosan for eco-friendly packaging applications and presented the specific activities carried out by UNIBAS within the PLAMINPACK project.

The University of Ioannina (UOI) organized a specialized training activity on 1 July 2025 at its Department of Chemistry, dedicated to the theme of sustainable food packaging for environmental protection within the framework of the circular economy. The training was implemented in the context of the PLAMINPACK project and aimed to strengthen scientific and technical capacity in the assessment of environmentally responsible packaging solutions. The programme placed particular emphasis on ecotoxicity testing methodologies, highlighting their critical role in evaluating the environmental safety and long-term impacts of packaging materials. In addition, the training addressed the emerging and highly relevant issue of microplastics, examining their sources, behavior, and potential ecological risks in relation to food packaging systems. Through this focused and scientifically grounded approach, the activity contributed to advancing knowledge and best practices in sustainable materials assessment, fully aligned with circular economy principles and environmental protection objectives.

Additional training activities were conducted in December 2025. UCA organized a training initiative in Marrakech entitled “Developing biodegradable food packaging based on biosourced polymers and bioactive compounds for improving the preservation of perishable foods”. This event involved project partners (UNIFI and APT) as well as the AFRICA PACK company, promoting interaction between academia and industry stakeholders. On 17 December 2025, a training session was held at the University of Pisa, Department of Civil and Industrial Engineering, organized by UNIFI and NTT. The training, entitled “PRIMA Programme for supporting the Mediterranean area: research on sustainable practices”, was addressed to students, PhD candidates, and early-stage researchers. It focused on the design and submission of PRIMA projects related to water, soil, and food systems, illustrated through examples of ongoing and completed PRIMA projects, including PLAMINPACK, FEDKITO, HALOFARMS, PROSMALLAGRIMED, SHARING-MED, AGROFIG, and FoWRSaP.

These training and educational activities highlight the strong educational dimension of PLAMINPACK and its commitment to nurturing the next generation of scientists and professionals working on sustainable food and packaging systems, in line with PRIMA capacity-building objectives.

Finally, the project also contributed to student-oriented European initiatives. The Biobased Industry Consortium promotes the BISC-E European Challenge for graduating students, coordinated in Italy by the PLAMINPACK project coordinator, Maria-Beatrice Coltelli. Italian students participating in the 2025 edition of the challenge were informed about PLAMINPACK activities and initiatives related to the bioeconomy. Within this framework, both the PRIMA Programme and the PLAMINPACK project were presented, further extending the project’s visibility among future professionals (Annex I).

3.4 Target audience 4: general public & civil society actors

Engagement with the general public and civil society aims to raise awareness of the importance of sustainable bioplastics recycling and to highlight PLAMINPACK’s contribution to addressing environmental challenges and advancing circular economy objectives. By presenting project results in an accessible and transparent manner, the project seeks to empower citizens, community groups, NGOs, and media actors to support and adopt sustainable practices and to advocate for environmentally responsible

policies. Key messages focus on education, public engagement, and collective responsibility, emphasizing the societal value of publicly funded research. Outreach activities are implemented through social media campaigns, public events, collaborations with environmental organizations, and the dissemination of user-friendly educational content, ensuring broad visibility and meaningful interaction with diverse audiences.

Initiatives such as the presentation delivered by the project coordinator, Maria-Beatrice Coltelli, during the BRIGHT Night of Researchers in Pisa were specifically designed to engage citizens, the general public, and civil society actors. The event was held in an open public space, ensuring open and inclusive access, and aimed to raise awareness of sustainable innovation and bioeconomy-related topics among non-specialist audiences. The presentation, entitled “Rinnovare idee e materiali per la bioeconomia” (“Renewing ideas and materials for the bioeconomy”), introduced the PLAMINPACK project as a concrete example of applied research focused on the valorisation of biobased, biodegradable, and compostable materials for packaging applications. Through clear and accessible language, the initiative highlighted the project’s contribution to addressing environmental challenges and promoting sustainable packaging solutions, thereby strengthening public understanding and engagement with circular economy principles.

3.5 Plan about target groups for next reporting period

During the first reporting period, communication and dissemination activities primarily focused on students and the academic community, in line with the project’s strong educational and capacity-building objectives. In the next reporting period, the strategy will be broadened to ensure a more balanced engagement of all key target groups, with increased attention devoted to industry stakeholders and farmers, policymakers, and the general public.

A strong and structured focus will be placed on industry actors and farmers, as they represent key enablers for the practical adoption and scaling of PLAMINPACK solutions along the value chain. In this context, the stakeholder meeting scheduled for 14 January 2026 will represent a starting point for more intensive engagement activities. This initiative will facilitate direct dialogue on project results, particularly those related to raw material extraction and material selection and will support the identification of potential collaboration and exploitation opportunities.

Engagement with policymakers will also be strengthened in the upcoming period. A dedicated discussion on strategies and actions to involve relevant policy actors will be held during the Month 18 consortium meeting, with the objective of aligning PLAMINPACK outcomes with regulatory priorities and policy frameworks at European and Mediterranean levels. This will support the preparation of evidence-based recommendations and future policy-oriented dissemination activities.

With regard to the general public and civil society, upcoming communication actions will emphasize the biocompatibility and environmental benefits of materials derived from natural and renewable sources. By highlighting the safety, sustainability, and consumer relevance of PLAMINPACK solutions, the project aims to increase public awareness and acceptance, encouraging consumers to recognize and prefer packaging approaches based on biodegradable and compostable materials.

Overall, the next reporting period will mark a transition from awareness-building to impact-oriented engagement, ensuring that communication and dissemination activities are closely aligned with project progress and the maturity of technical results.

4 DISSEMINATION AND COMMUNICATION TOOLS AND CHANNELS

4.1 Communication Channels

In the first reporting period the aim of the communication was addressed to spread the knowledge of PLAMINPACK projects and its goals, as well as some tools, that were made available to the general public, such as the website. To effectively engage the general public and civil society actors, PLAMINPACK utilizes a range of communication tools and channels designed to maximize visibility, accessibility, and public engagement.

Table 1: Updates about communication channels

Communications Group task forces	Updates up to M18
Participation in public events and science festivals	The partners granted the participation of PLAMINPACK to 11 events with 14 contributions. Seven of the nine partners were the direct participants to the different events mainly addressed to polymers, biotechnology and materials.
Social media platforms	Active presence on LinkedIn to reach diverse audiences. The average publication of posts was of 2-3 post per months in dependence of the vents. The posts were linked to the news on the PLAMINPCK website, so that the subscription to the web site was promoted in the general public.
Media outreach	Short papers were published on the Department website of Civil and Industrial Engineering of the University of Pisa and they were also posted on LinkedIn and Facebook.
Public events and campaigns	The Coordinator participated on 26 september 2025 to “BRIGHT, the Night of researchers”, held in Pisa. During a public presentation entitled “Rinnovare idee e materiali per la bioeconomia” (“Renewing ideas and materials for the bioeconomy”), the PLAMINPACK project was illustrated to the general public as an example of application related to sustainable materials.
Educational multimedia content	Several training activities were carried out (see section 3.3) and they were promoted and reported on social media to attract attention towards the project website

4.2 Dissemination channels

The dissemination activities of the PLAMINPACK project were effectively initiated through the publication of a comprehensive state-of-the-art collective review entitled “Transforming Agricultural Waste from Mediterranean Fruits into Renewable Materials and Products with a Circular and Digital Approach”, authored with the active contribution of all consortium partners. Published in March 2025, this review provides a rigorous and up-to-date overview of the scientific, technological, and industrial advances relevant to the project’s core objectives.

The publication has already achieved significant visibility and impact within the scientific and professional communities, having been cited more than 20 times to date. This strong citation record in such a short timeframe clearly demonstrates the relevance, timeliness, and high level of interest in the topics addressed by PLAMINPACK. It confirms that the project’s focus on the valorization of Mediterranean fruit waste through circular economy principles and digital approaches responds to pressing research needs and industrial challenges, positioning PLAMINPACK as a reference initiative in this emerging field.

Other papers were published by UNIPi and UNIBAS containing scientific achievements not strictly connected to project exploitation, so not sensitive. Moreover UHOH and UOI published papers partially connected to the project topics, acknowledging the project.

Other papers were published by UNIPi and UNIBAS containing scientific achievements not strictly connected to project exploitation, so not sensitive. Moreover UHOH and UOI published papers partially connected to the project topics, acknowledging the project.

Table 2: Updates about dissemination channels

Channels	Updates up to M18
Peer-reviewed publications	5 peer-reviewed publications were published on international journals mentioning and acknowledging PLAMINPACK. Their publication was posted on social media (LinkedIn) and for each paper a “new” was created on the website, with the link to the open access publication.
Technical reports and white papers:	Public deliverables are publicly available on the PLAMINPACK website, so policymakers or professionals can take the occasion of consulting them, maybe contacting the coordinator or the partners in the case they are interested in further details.
Workshops and industry conferences	During the initiative in Marrakech held on 6 December 2025 Africa Pack has given its comments regarding packaging to UCA partners. Moreover, a specific meeting for companies is scheduled in Hohenheim on January 14th 2026.

Webinars and training sessions	Several training sessions were organized for students and researchers for the moment (section 3.3).
Exhibits at trade fairs	Downloadable resources such as deliverables and links to publications were made available for the professionals. During the initiative in Marrakech held on 6 december 2025 Africa Pack has given its comments to UCA partners. A meeting for involving companies in PLAMINPACK potential exploitation will be held in Hohenheim on January 14 th 2026.

5 KPI-DRIVEN IMPACT MONITORING

A comprehensive KPI framework has been established to monitor, evaluate, and refine the effectiveness of PLAMINPACK's outreach across all target audiences. This framework separates the goals and measurement methods for communication and dissemination activities, ensuring clarity and focus for each type of outreach. Communication KPIs target visibility and engagement with the general public and civil society, while dissemination KPIs focus on the effective sharing of project results with academic, industrial, and policymaking audiences.

The tables below provide an in-depth outline of KPI targets and measurement methods for both communication and dissemination channels.

Table 3. KPIs for communication activities

Channel	KPI target	Updates up to M18
Website	5,000 unique visits/year	<i>Measurement:</i> currently it is not possible to track the number of visitors to the website. However, it can be estimated that they were about 800/year. <i>Action plan:</i> Increase monthly visits through content updates, cross-promotion on social media and involvement of all the PLAMINPACK partners
Social media	1,000 followers by the end of the project	<i>Measurement:</i> on LinkedIn the followers are about 400. Implemented a regular posting schedule with engaging visuals, project updates, and interactive content. <i>Action plan:</i> opening a specific group for PLAMINPACK not only in LinkedIn, but also in Instagram and Facebook to be addressed to different social groups.
Newsletter	Bi-annual distribution	<i>Measurement:</i> the low number of subscribers to the website did not allow to make convenient the form of newsletter up

		to now. However, this strategy will be improved in the second reporting period. <i>Goal:</i> Foster consistent stakeholder engagement and inform audiences on project progress. <i>Action Plan:</i> Use concise, visually appealing newsletters and encourage subscribers to share content within their networks.
Educational videos	500 cumulative views per video	The training activity was performed up to M18 in presence. It is not possible to determine this KPI at the moment

Table 4. KPIs for dissemination activities

Channel	KPI target	Updates
Peer-reviewed publications	≥ 7 (OA) publications by the end of the project	<i>5 publications already available open access in the first reporting period</i>
Workshops	2 workshops by the end of the project	<i>A first workshop was scheduled in Hohenheim in January 2026 and one will be done in correspondence to the final meeting of the project.</i>
Industry conferences	Present at 2 major conferences	<i>Currently the participation to professionals fairs was limited, even if the participation to public events allowed PLAMINPACK goals to be illustrated to a general and extended public.</i>
Scientific conferences	Present at 4 major conferences	<i>The presence to 11 international conferences allowed to overcome this important objective in the first reporting period.</i>

6 KPI ANALYSIS AND ADJUSTMENT

Considering the analysis performed in the section 3,4 and 5, the plan for the next reporting period regarding communication and dissemination is based on:

- **Scientific publications**

The consortium is firmly committed to the continuous publication of high-quality scientific papers in reputable open-access journals. As the PLAMINPACK project progresses, an increasing emphasis will be placed on publications that are directly based on results generated within the project. While the availability of project-specific data was necessarily limited during the initial implementation phase, the second reporting period will benefit from a substantially expanded results portfolio. This will enable the preparation of more focused, impactful, and project-driven publications, strengthening the scientific visibility and credibility of PLAMINPACK.

- **Conferences, fairs, and stakeholder engagement**

Active participation in leading scientific conferences will be systematically maintained to ensure sustained interaction with the international research community and to disseminate project outcomes at the highest scientific level. In parallel, the consortium will significantly intensify its presence at industrial fairs, technology showcases, and sector-specific exhibitions. These activities are strategically designed to strengthen engagement with industry stakeholders, policymakers, and end users, while actively fostering opportunities for knowledge transfer, uptake, and future exploitation of project results.

- **Training and educational activities**

The consortium will actively support the development of high-quality educational and training video materials to be made available through the project website. These materials will serve as a key tool to support training activities, enhance the accessibility and reusability of project knowledge, and extend the project's impact beyond the academic community to industrial actors, students, and other relevant stakeholders.

- **Website and newsletter dissemination**

A dedicated strategic discussion will be held during the M18 consortium meeting to define concrete, measurable actions aimed at significantly increasing the number of website subscribers. These measures will ensure the regular, targeted, and effective dissemination of project newsletters, news items, and key results, thereby strengthening communication efficiency and stakeholder engagement throughout the project duration.

- **Social media and public outreach**

Social media activities, currently centered on LinkedIn to effectively reach professional and industrial audiences, will be systematically expanded to include Instagram and Facebook. This broadened approach will enable the project to engage younger generations and the general public, enhance visibility beyond specialist communities, and maximize the overall communication and outreach impact of PLAMINPACK.

7 EXPLOITATION PLAN

A key strategic aspect of the exploitation of PLAMINPACK lies in the active involvement of consumers. The project promotes a paradigm shift in which consumers are not merely end-users but conscious drivers of innovation, supporting and demanding ***packaging solutions derived from the valorisation of plant waste used to protect the same fruits from which it originates***. Empowering consumers to recognize and endorse this circular concept is essential to accelerating acceptance and uptake of PLAMINPACK solutions.

To this end, targeted communication towards the general public is required to prepare and engage consumers who are receptive to innovative, sustainable packaging models. Building awareness and trust around this new packaging paradigm is a critical enabler for market penetration and will significantly enhance the overall impact of the PLAMINPACK initiative.

In parallel, the involvement of industrial stakeholders is essential for successful exploitation. Companies must be actively engaged to validate, scale up, and promote the technologies and materials developed within the project, ensuring their effective translation into market-ready packaging solutions. This coordinated engagement of consumers and industry will be decisive in enabling the commercial availability and long-term adoption of the new packaging formats introduced by PLAMINPACK. Throughout the life of the project, all project partners will be responsible for updating the Project exploitation plan, led by UNIPI.

Moreover, each project partner will be required to develop their own 'Exploitation Plan' that will demonstrate how the project results will be integrated into their own forward business plan and research actions. Exploitation activities are integral part of WP6.

7.1 Market-readiness and industry engagement

Agro-food companies will benefit economically from the commercialization of PLAMINPACK's innovative materials and technologies, enabling the market introduction of cost-competitive, sustainable, and high-added-value products. Additional revenues may be generated through licensing of project results, encouraging partners and advisory board members to support the initial investments required for exploitation in the Mediterranean region.

The exploitation plan will assess national, EU, and international funding opportunities and will focus on four main outcomes: (i) protection of intellectual property through patenting, supported by appropriate patent searches and IPR-sharing mechanisms; (ii) development of a robust business model, including market analysis, cost assessment, and investment needs, supported by Life Cycle Costing activities; (iii) commercial exploitation of project knowledge and systems, engaging industrial stakeholders, policymakers, and certifying bodies, while leveraging private investments to overcome the innovation gap; and (iv) planning further research activities to enhance the replication, scalability, and transferability of project results.

7.2 IP Management and protection

Effective intellectual property (IP) management is critical to safeguarding the innovations developed within PLAMINPACK and ensuring their successful exploitation. The following strategy outlines key activities to protect IP, manage shared ownership, and foster fair commercialization opportunities for all consortium partners:

1. Annual IP audits:

- Regular audits will identify new intellectual property generated during the project, such as patented technologies, methodologies, or innovative recycling processes.
- An audit session in the WP6 part of the meeting is scheduled for the M18 month in Hohenheim.

2. Patent applications:

- For high-value innovations, patents will be filed to secure exclusive rights and ensure PLAMINPACK technologies are protected in the global market. This point will be analysed in the M18 meeting.
- The project will prioritize patents with commercial potential, focusing on scalability and relevance to industry stakeholders.

3. IP ownership and agreements:

- Shared IP ownership will be governed by clear, pre-defined agreements developed at the start of the project. The agreements will outline:
 - Ownership rights of consortium partners.
 - Procedures for resolving disputes over IP.
 - Revenue-sharing models in case of commercialization.
- Agreements will align with Horizon Europe IP rules, ensuring transparency and equitable benefits for all partners. A preliminary list of KERs was presented and discussed at M12, but a discussion at M18 meeting has been scheduled

4. Knowledge transfer and licensing:

- Licensing agreements will be established for PLAMINPACK technologies to enable adoption by industry stakeholders, with specific terms to support SMEs and other early adopters.
- Open-access licensing models may be explored for non-commercial or academic purposes, promoting wider dissemination of project outcomes.

5. Protection of trade secrets:

- In addition to patents, critical methodologies, algorithms, or know-how that cannot be patented will be protected as trade secrets.

- Confidentiality agreements will be enforced among consortium members and external collaborators to prevent unauthorized use or disclosure.

6. Freedom to Operate (FTO) analysis:

- Regular FTO analyses have been conducted to ensure PLAMINPACK innovations do not infringe on existing patents or IP rights, reducing the risk of legal challenges.

7. Long-term IP strategy:

- The IP strategy will extend beyond the project lifecycle, with mechanisms in place to monitor and manage IP use for five years post-project.
- The post-project advisory group will oversee commercialization efforts and adapt IP management strategies to align with evolving market conditions.

8. Awareness and training:

- Workshops and training sessions on IP management will be conducted for consortium partners, ensuring that all members can identify and protect valuable IP effectively. A session is scheduled for M18 meeting that will be held in Hohenheim on January 15th 2026,
- These sessions will also cover EU regulations, patent application processes, and the benefits of different IP protection mechanisms.

7.3 Long-term impact and sustainability: the website

To ensure the sustainability and long-term impact of PLAMINPACK, the following measures will be implemented the PLAMINPACK website will remain active for five years after the project's conclusion, serving as a repository for project results, publications, and resources.

PLAMINPACK website (URL: www.plaminpack.com) was successfully built in June 2025 and periodically updated. The website contains the following pages:

1. PLAMINPACK Overview, explaining the project concept

PLAMINPACK (Plant-based antimicrobial and circular packaging for plant products) is a European research project focused on creating innovative, bio-based, antimicrobial packaging materials (such as nets, films, and trays) for perishable foods using biopolymers and extracts from agricultural plant waste. These materials are designed to improve food shelf life and support sustainability by integrating circular economy principles.

2. About us, presenting coordinator and listing the partners group

The project is carried out by a consortium of universities and research institutions from Europe and the Mediterranean region, coordinated by the University of Pisa and funded under the PRIMA programme.

3. Work packages, dedicated to the structure of implementation

This part explains the Key Project Activities. The project tests packaging materials on Mediterranean fruits like tangerines, dates, and strawberries. Active antimicrobial and antioxidant compounds are extracted from plant waste; chitosan is produced via bioconversion using insects (*Hermetia illucens*). Digital tools such as a database linking plant waste to extract quality and a digital twin model for fruit ripening and packaging interactions are being developed. A Life Cycle Assessment evaluates environmental behaviour, recyclability, and end-of-life performance of the packaging.

4. Media library, a full sources of materials

In this important session, the site features news updates on publications, project meetings, and scientific achievements. This session is subdivided in photos, publications, training, public deliverables and videos. Each page at M18 contains a consistent number of files.

- *Publications*

This subsection lists the open-access scientific papers published by the project, sharing research results with the scientific community and broader audiences.

plaminpack.com

- *Training*

Contains educational and training materials developed by the PLAMINPACK partners, aimed at spreading knowledge about sustainable materials and biocircular packaging.

plaminpack.com

- *Photos*

A gallery of images related to project activities, including fieldwork, events, lab work, and inspirational Mediterranean context visuals.

plaminpack.com

- *Public Deliverables*

Lists public deliverable documents produced by the project, such as reports on market and regulation, dissemination and outreach plans, training plans, DECO plan, and management guidelines.

- *Videos*

The two included videos are linked from external sources

5. Partners

The project is implemented by a consortium of universities and research institutions from Europe and the Mediterranean region, coordinated by the University of Pisa and funded under the PRIMA programme. For each partner, a comprehensive description of the corresponding research unit is provided to inform readers about its expertise and role within the project. In addition, direct links to the partner institutions are included on the project website to enhance their visibility and to foster new collaborations that may support the future exploitation and impact of PLAMINPACK results.

6. News

The website features regular news updates covering scientific publications, project meetings, and key research achievements. In parallel, social media posts are systematically linked to this section, presenting project updates in an engaging and visually appealing manner and encouraging readers to subscribe to the website in order to receive ongoing information and updates.

At M18 the published news, regularly published since the launch of the website, are:

- A training initiative in Pisa
- A training initiative in Marrakech on biodegradable food packaging (Dec 2025).
- A Master's thesis defense by a student on biodegradable packaging materials.
- New scientific publications in journals (e.g., on sustainable packaging films).
- Presentations at international conferences (e.g., IOCPS2025). plaminpack.com
- Participation in workshops and project days (e.g., PRIMA Project Day, EXTRAFRESCO workshop).
- Lab activities and extrusion trials related to packaging materials.
- Reports of papers acknowledging PLAMINPACK
- Research dissemination at events like GreenChemCo 2025.

7. Registration

This section invites visitors to register in order to receive regular updates on project innovations, scientific findings, and key developments. The subscription process is designed to be simple and user-friendly, requiring only a minimal amount of information from readers. In addition, subscribers are encouraged to indicate their areas of interest and to share suggestions or feedback, allowing the project team to better tailor future communications and to foster a more interactive and responsive exchange with stakeholders.

8. Contacts

This section provides the full contact details of the Project Coordinator, including the postal address, telephone number, and email address, in order to facilitate direct and effective communication. By making this information readily available, the project aims to encourage contact from stakeholders, researchers, industry representatives, and other interested parties, thereby supporting dialogue, collaboration opportunities, and the dissemination and exploitation of project results.

7.4 Future deliverables for PLAMINPACK

The PLAMINPACK exploitation, dissemination, and communication strategy will be further expanded, refined, and consolidated through a set of dedicated future deliverables. These outputs will provide structured analyses, updated strategic guidance, and continuous monitoring tools to support effective project exploitation and impact.

In particular, the following key deliverables will play a central role:

- **D6.2 – Market and Regulation Context Report (M30, UNIPi)**
This deliverable will provide a comprehensive analysis of the market and regulatory frameworks relevant to the exploitation of PLAMINPACK results. It will assess current and emerging regulations affecting bio-based materials, packaging, and agri-food value chains, and will include a detailed SWOT analysis of the multifactor PLAMINPACK value chain. The report will support strategic decision-making for commercialization and policy alignment.
- **D6.3c – Final Dissemination, Communication and Exploitation (D&C&E) Plan and Report (Part III, M36)**
This deliverable will represent the final and consolidated version of the D&C&E Plan. It will integrate updated strategies, actions, and indicators for dissemination, communication, and exploitation, reflecting the project's mature results and lessons learned. The document will provide a clear roadmap for maximizing the visibility, uptake, and long-term impact of PLAMINPACK outcomes beyond the project lifetime.
- **D6.5 – Annual Reports on Dissemination and Outreach Activities (M24 and M36, ASU)**
These annual reports will systematically document dissemination, communication, and outreach activities carried out throughout the project. They will serve as a monitoring and evaluation tool, enabling the consortium to assess progress, identify gaps, and adjust strategies as needed. The reports will also ensure continuous engagement and alignment of all consortium partners with the project's dissemination and impact objectives.

7.5 Updated plan for exploitation

The dissemination and communication of the PLAMINPACK concept toward consumers will be systematically continued and significantly intensified during the second reporting period. Building awareness and acceptance of the project's sustainable solutions among end users remains a strategic priority to support downstream market uptake and long-term exploitation.

A core driver of the exploitation strategy in the upcoming phase will be the identification, mapping, and active engagement of key stakeholders along the entire PLAMINPACK value chain. This includes actors in agriculture, biopolymer production, packaging manufacturing, food processing, distribution, and retail. Establishing a structured and targeted stakeholder network will enable the consortium to align project outputs with real market needs, accelerate validation activities, and enhance exploitation readiness. Collaboration with stakeholders will be further strengthened to ensure that PLAMINPACK innovations are continuously adapted to evolving market demands, industrial requirements, and regulatory constraints.

Within the project consortium, the systematic identification and continuous monitoring of Key Exploitable Results (KERs) will be actively promoted in order to address intellectual property issues at an early stage and to ensure timely, transparent, and effective management of IPR from the outset of the project.

In parallel, the consortium will actively pursue the integration of PLAMINPACK results into relevant policy frameworks, including circular economy strategies, bioeconomy policies, and sustainability-oriented regulatory initiatives at both European and Mediterranean levels. Efforts will be made to promote the relevance of PLAMINPACK innovations beyond the agri-food sector, fostering partnerships and exploitation pathways in related domains such as sustainable packaging, textiles, and agriculture, with a strong focus on replication and scalability.

Engagement with policymakers will be substantially reinforced in the forthcoming period. A dedicated strategic discussion will be organized during the Month 18 consortium meeting to define concrete actions and engagement mechanisms aimed at involving relevant policy actors and institutions. The objective is to align PLAMINPACK outcomes with current and emerging regulatory priorities, thereby supporting the development of evidence-based recommendations and strengthening the project's contribution to policy-oriented dissemination and impact.