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[CE-BIOTEC-09-2020 Upcycling BioPlastics of food and drinks packaging \(RIA\)](#)

Title: High performance sustainable bio-based packaging with tailored end of life and upcycled secondary use

Acronym: PRESERVE

Grant Agreement No: 952983



PRESERVE

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History of changes

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29-09-2021	V 0.2	EUBP, KNEIA	Draft structure was amended according to comments by KNEIA
27-10-2021	V 0.3	EUBP, KNEIA, CHX, ASU, NTT, ITENE, IRIS	Final draft with partners' input on individual planned and potential training activities
18-11-2021	V 0.4	KNEIA	Revision of final draft
23-11-2021	V 1.0	EUBP	Final version V 1.0 for submission
05-05-2022	V 1.1	EUBP	Draft update for M18 reporting, incl. input from respective partners on completed training events and planned/upcoming events
20-05-2022	V 1.2	EUBP, KNEIA, NTT	Revision of final draft
24-06-2022	V 2.0	EUBP	Final version V 2.0 for submission (M18)

List of abbreviations

Del.	Deliverable
DSS	(Sustainability enhancement) Decision support system
EoL	End-of-life
GA	Grant agreement
IP	Intellectual property
M	Month
PLA	Polylactic acid
RTD	Research & technology development
RTO	Research and training organisation
TBD	To be defined
TRL	Technology readiness level
WP	Work package

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Executive Summary

PRESERVE is a European research project that develops solutions to improve the recyclability of plastics. The 4-year project started in January 2021 and received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 952983. This "Training Plan for Knowledge Transfer and Educational Sessions" provides an overview of the planned actions to ensure that the research outputs of the PRESERVE project are shared effectively between the members of the project consortium as well as other relevant external stakeholders.

The goal of the PRESERVE training activities is to support further research by expanding the European knowledge base for R&D projects and to support the development of new standards and regulation in the field of sustainable upcycling of bio-based packaging and polymers. During the 48 months lifespan of the project, the project partners will organise at least 3 knowledge sharing workshops, 6 dedicated PRESERVE webinars, and involvements in 18 third-party events for the 'PRESERVE Roadshow'. All training materials will be made available publicly on the PRESERVE website and other relevant online platforms.

This plan outlines the strategy for the planned training and educational activities within the PRESERVE project, including the overall objectives of the training as well as indicators for measuring the success of the planned training activities, the themes and topics that shall be trained, the various training types to be applied, the training materials, and the targeted stakeholder groups. It also includes the actual initial training plan as well as the overall timeline for the planned activities, and a report on already accomplished training events.

1. Introduction

This updated version (V 2.0, M18) of the Deliverable 8.3 “Training Plan for Knowledge Transfer and Educational Sessions” provides an overview of the planned and executed actions to ensure that the research outputs of the PRESERVE project are shared effectively between the members of the project consortium as well as other relevant external stakeholders, including research partners and industry end-users, to validate their interest in the results.

The tools and actions set out in this plan are **geared towards expanding the European knowledge base for R&D projects and supporting further research in the field of sustainable upcycling of bio-based packaging and polymers**. Following an open data management methodology, the successful training of relevant partners and stakeholders will be achieved through the adoption of a specified range of targeted training activities, tools, and channels, including educational sessions, dedicated training materials, workshops, networks, and external collaborations.

1.1. Scope of this plan

While knowledge transfer as such comprises a broad range of actions and tools, this deliverable will specifically **focus on measures targeted at training and education**. It does not include dissemination or even exploitation activities, which are described in separate deliverables, including the PRESERVE Communication Plan (D8.2, submitted on 30-06-2021 (M6), confidential/not public) and the PRESERVE Plan for Dissemination and Exploitation of the Project Results (D8.5, due M24, confidential/not public).

This second edition of the Training Plan is submitted in month 18 (M18) of the project and will continue to be updated regularly and for every following reporting period. The initial plan focuses on **describing the methodologies** that will be used to identify and define relevant themes, partners, and stakeholders, tools, and channels, since, at this stage, no significant project research results are yet available in relation to the planned development of upcycled bio-based packaging, bio-based coatings and adhesives for tailoring packaging properties, end-of-life options, and the upcycling of the developed materials.

Once those developments have progressed far enough to make the knowledge and data about these processes and technologies available, the plan will be defined and specified accordingly in the forthcoming editions.

The Training Plan has been defined jointly by EUBP, the lead partner for this deliverable, together with KNEIA, the leader of the related work package WP8 and responsible for Communication and Dissemination within the PRESERVE project. This plan is a public deliverable and will be published on the PRESERVE website.

1.2. Outline of this training plan

Section 2 of this deliverable outlines the strategy for the planned training and educational activities within the PRESERVE project, including the overall objectives of the training as well as indicators for measuring the success of the planned training activities, the themes and topics that shall be trained, the various training types to be applied, the training materials,

and the targeted stakeholder groups. Section 3 outlines the actual initial training plan as well as the overall timeline for the planned activities, and reports on the already accomplished training events. Section 4 defines the involvement and responsibilities of all project partners in setting up and realising the training activities as well as measuring their success and mitigating potential risks.

1.3. About PRESERVE

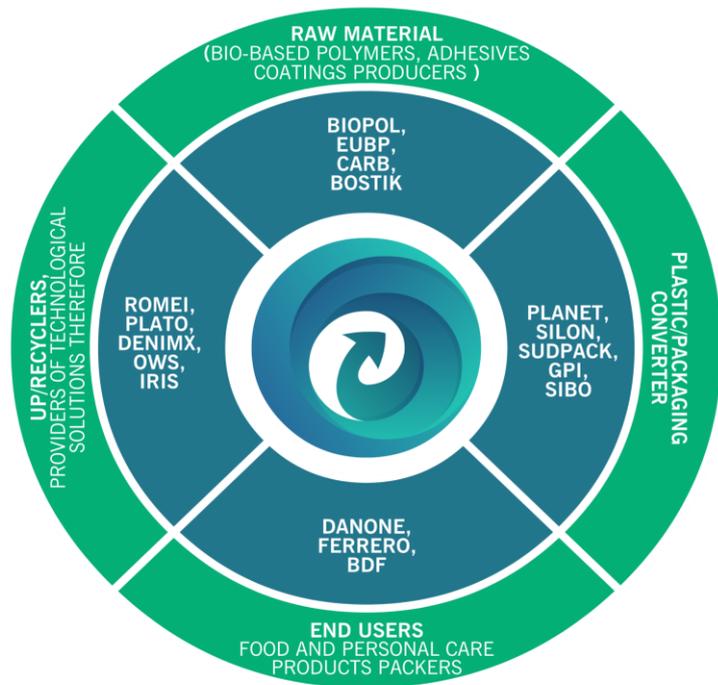
PRESERVE is a European research project that develops solutions to improve the recyclability of plastics. The 4-year project started in January 2021 and received funding from the European Union’s Horizon 2020 research and innovation programme under Grant Agreement No 952983.

PRESERVE aims to improve the circularity of bio-based packaging from origin and design to subsequent life cycles. The project will develop 10 common packaging applications using 100% bio-based materials and innovative processing technologies to enhance their properties and coatings to ultimately improve their recyclability. The project will also apply new end-of-life options, including innovative upcycling solutions, to make sure these new packaging applications are fit for a truly bio-based, circular economy.

The main activities performed in PRESERVE span from technology screening and validation in the lab (TRL4) to demonstration in an operational environment (TRL6). The technologies involved in the project will be developed building on prior research and IP from involved partners. The participation of industry partners will ensure that the main project results, i.e., all packaging demonstrators, will reach TRL6 by the end of the project.

The PRESERVE consortium combines all the relevant skills and organisations needed to address the full extent of the challenge of developing and validating innovative sustainable bio-based packaging and EoL valorisation solutions. The participation of leading industry players maximises the consortium’s ability to transfer the results of the project to enable post project further demonstration/qualification into broadly available market ready solutions.

This training plan will make sure that the knowhow will be shared between the members of the consortium through its value chain.



Circular PRESERVE Value chain (only business partners, no RTOs or support service providers)

Figure 1: PRESERVE circular value chain

2. Strategy for training and educational sessions

Knowledge sharing is the process of exchanging knowledge, including research data, processes, and findings, skills, experience, and understanding, among different target groups.

The purpose of this training plan is to clearly define the themes, actions, and outcomes, audiences, and tools which will be implemented to support effective knowledge sharing through targeted training activities and educational sessions as agreed in the project's Grant Agreement.

2.1. Objectives and related activities

The goal of the PRESERVE training activities is to **support further research** (by expanding the European knowledge base for R&D projects) and **support the development of new standards and regulation** in the field of sustainable upcycling of bio-based packaging and polymers.

To achieve this goal, several activities have been identified that will be covered in this Training Plan deliverable:

- To **identify and collect knowledge and research results** generated within the PRESERVE project that can be shared with relevant stakeholders that might benefit from these findings,
- To identify and **specify stakeholder groups** that are relevant to, and that have an interest in the progress and outcomes of the project and that will be targeted by the knowledge sharing activities,
- To define **suitable knowledge transfer activities tailored towards specific themes and stakeholder groups** that result in the further use and development of the findings, and eventually in an uptake of the new materials and applications,
- To **carry out knowledge exchange of PRESERVE results** via events, conferences, workshops, training materials, stakeholder platforms, and other training activities,
- To **promote the project** and its objectives, research activities, and results.

To make sure these activities are synchronised, the following action points will have to be considered, too:

- Identify consortium partners that will lead the training activities,
- Prepare (and regularly update) a training plan that provides a timeline for all planned training partners,
- Provide internal templates for reporting purposes,
- Define project specific training materials and tools,
- Define platform (online) that will host the training material,
- Establish collaborations with other relevant projects and networks for the purpose of sharing training activities and reach a larger target audience.

2.2. Target indicators

The effectiveness of the defined training activities will be measured against several target indicators.

The number of training activities that shall be organised during the project lifetime (48 months) has been defined in the Grant Agreement, including at least the following:

- **3 knowledge transfer workshops:** aimed at sharing knowledge between the consortium partners,
- **6 dedicated PRESERVE webinars:** showcasing the preliminary (and final) results of the project to targeted internal and external audiences; these webinars will be organised by individual consortium partners,
- **18 third-party events for the “PRESERVE Roadshow”:** project partners will be participating or getting involved in existing events organised by third parties, including trade fairs, exhibitions, workshops, seminars, conferences, round tables, etc.,
- **Training materials and resources:** will be shared on the project website and Multi-Stakeholder Platform.

Whereas the webinars and workshops will be used to exchange specific knowledge and data to targeted stakeholder groups, the PRESERVE Roadshow (third-party event platforms) will be used as means to share overall project objectives and findings with a larger audience and to raise awareness for the research advances and application solutions made within the project to wider audiences.

The training webinars will be organised as hands-on workshops (or online webinars) with a target of 50 registered participants per event (unless stated otherwise in the training plan in section 3). The main indicator of success, however, shall not only be the number of participants and effective reach-out, but the **quality and accessibility of the training materials**. Therefore, each training activity/event shall result in specific training materials and resources that will be made shareable and accessible publicly on dedicated training spaces, and the availability of which will be communicated and advertised on all available online channels (find further information on training materials and availability in section 2.5).

The specific indicators for each training activity will be further defined in the training plan (section 3) as the project progresses in the upcoming editions of this deliverable. Once the target indicators have been set, they will be monitored to measure and evaluate the effectiveness of the training events. An update of the training plan will be prepared for each reporting period and will provide an evaluation of the impact of the training activities by comparing achieved with defined target indicators.

2.3. Topics and training content

PRESERVE aims to develop and implement an upcycling strategy to boost bio-based packaging and polymers, while improving their properties for applications in food & drink packaging, textile, and composite products among the others.

The project partners will actively pursue training activities to exchange the knowledge reached during the project duration to **support further research** (and expand the European knowledge base for R&D projects) and **support the development of new standards and regulation** in the field of sustainable upcycling of bio-based packaging and polymers.

This includes the following themes and topics (further topics may be defined later in the project lifetime as developments progress).

Themes and expected impacts:

Technical expertise and practices	
Topics:	<ul style="list-style-type: none"> ● Gained knowledge in the bio-based polymers and packaging field, ● Results on protein-based adhesive and delamination systems, ● Novel bio-based adhesives for food packaging, ● PHA coatings, ● Protein-based coatings, ● Other topics will be defined later in the project
Relevance for target audiences:	<p>Targeted at internal members of the consortium, particularly RTD centres, to enable all project partners to progress and deliver on the project's objectives, and to make specific practices, technologies, and data available for other partners of the project to ensure that consortium partners have all knowledge and data available that they need to fulfil their tasks within the project.</p> <p>Later in the project, the expertise may also be shared with a wider audience (to be defined).</p>
Recycling & upcycling strategies	
Topics:	<ul style="list-style-type: none"> ● eBeam technology for upcycling bio-based materials, ● Requirements for the controlled biodegradation of the developed materials, ● New polymeric structures achieved by enzymatically biodegraded polymer, sources, ● Home composting, ● New approaches to re-use bio-based packaging
Relevance for target audiences:	<p>Targeted at internal audiences, i.e., members of the project consortium in order to make the knowledge and data about these new innovative strategies and options available to all project partners as these are the core innovations of PRESERVE.</p> <p>Once the results/strategies have been achieved, these topics are also relevant for industry end-users, brands & retailers, and organisations that offer recycling and upcycling technologies and solutions, as well as policy makers and standardisation bodies in order to raise awareness for these new solutions, identify potential hurdles for their market applicability, and ultimately allow for an uptake of these new technologies.</p>



Demonstrator products	
Topics:	<ul style="list-style-type: none"> • Compositions of novel bioplastics formulations developed during the project • Preliminary results on the development of the 10 demonstrator products, incl. technical challenges • Final demonstrator products
Relevance for target audiences:	<p>Targeted at industry end-users, brands, and retailers, as well as product designers in order to validate their interest in the developed packaging solutions and allow for a quick market uptake of these products.</p> <p>Also relevant for policy and standardisation stakeholders, see section below.</p>
Policy & standardisation	
Topics:	<ul style="list-style-type: none"> • Relevant EU policies and regulatory frameworks that have an impact on the developed demonstrator products and vice versa, • Standards for bio-based materials and packaging, • Standards/requirements for SRM for food-packaging, • Standards for biodegradation/composting, • Certification schemes and labels for bio-based materials and packaging, • Etc.
Relevance for target groups:	<p>Targeted at EU policy makers to raise awareness on the innovations and solutions developed in the project and to emphasise the potential impact of these solutions on EU policy and, vice versa, the impact of EU policy on the success and market penetration of these innovations; and to provide concrete input and asks on relevant policy and regulatory frameworks.</p> <p>Targeted at standardisation bodies and groups at EU level, leading certification schemes, industry association(s), and involved EU policy makers to raise awareness on the potential impact of the new materials and properties on the development or revision of standards, certification schemes, and labels for bio-based, recyclable, and biodegradable products; and to discuss the need for an EU-wide label to identify bio-based packaging and specify on the various EoL options.</p> <p>Also targeted at all consortium partners to raise awareness for relevant EU policies and standards that have an impact on the developed materials and packaging solutions.</p>
Bio-based materials & packaging	
Topics:	<ul style="list-style-type: none"> • General benefits of bio-based materials for (food) packaging • Evaluation of consumer perceptions on SRM (secondary raw materials) for packaging • Health and safety aspects in the development of coatings and solutions for microplastic release
Relevance for target groups:	<p>Targeted at a wide audience, including consumers, policy makers, plastics industry, packaging industry, retailers, and brands to raise awareness on the developed solutions and product demonstrators and their applicability for existing applications.</p> <p>Targeted at consortium partners to discuss recommendations that have been developed on the basis of the survey results on consumer perception and to raise awareness on health and safety aspects (esp. SRM in food packaging).</p>
2030 Roadmap	



Topics:	<ul style="list-style-type: none">• Supply and value chain strategy for post-project deployment of PRESERVE results (Del. 8.7, M48),• Pathways to significantly influence the emergence of bio-based packaging and create jobs and growth in the sector,• Show potential to substitute more than 60% of the packaging materials by 2030.
Relevance for target groups:	<p>Targeted at consortium partners. Possible transfer to other sectors will also be considered if resources are not in the consortium.</p> <p>A detailed strategy outlining the steps to move the PRESERVE solutions from TRL6+ to TRL 9 will be prepared capturing the key findings and remaining knowledge gaps arising from the project as well as the interdependencies across the supply and value chain. The draft version of the 2030 Roadmap (Del 8.7) will be discussed in a project-wide event organized by CHX around M36 to get stakeholders feedback (task 8.4) resulting in a set of recommendations contributing to a viable European roadmap for the PRESERVE project results uptake and in general for food and drink packaging upcycling and production from renewable sources.</p>
DSS	
Topics:	<ul style="list-style-type: none">• Tool (app) to support the decision of the stakeholder on the upcycling approach, and to support ecodesign of SRM applications.
Relevance for target groups:	<p>Targeted at industry end-users and product designers in order to raise awareness for the non-invasive-based DSS tool as well as the new packaging material innovations and upcycling/recycling solutions.</p>

Table 1: Themes of exchangeable knowledge and expected impacts

2.4. Training types and activities

PRESERVE workshops and webinars:

Three thematic knowledge transfer workshops targeted at sharing knowhow between the members of the consortium will be organised by consortium partner **ASU** at around the project months M20, M32, and M44. The first workshop (**M20**) shall allow exchange of inner practices/technical expertise between the RTD centres, to ensure circularity and cross-sectoral approach. The second workshop (**M32**) shall allow transfer of competences from the staff of the RTD centres to the companies in the consortium. The third workshop (**M44**) shall be opened to all partners of the consortium and potentially a broader audience. The exact topics and target groups will be defined further down the line of the project.

Two PRESERVE webinars on preliminary results will be organised by consortium partner **CHX** during the second half of the project to present intermediate PRESERVE results to the Circular Plastics Helix community and other key audiences relevant for the topics selected for the webinars. The first webinar will take place around **M30**, the second webinar around **M40**. The topics covered by both webinars will be defined at a later point and depends on the input from the technical partners and preliminary results available at that stage. Given the partiality of results to be presented at those points, external experts might also be invited to give a complementary overview of the latest innovations and context in the sector.

Two further training webinars on upcycling and ecodesign will be organised by consortium partner **IRIS** (in connection with task 7.4.2 “sustainability enhancement decision support system (DSS)” and deliverable 7.4 in WP7) on the development of an app to support the decision of stakeholders on the upcycling approach and to support ecodesign of SRM applications, as well as the report on the initially established scenario, validation of the DSS and resulting data for policy briefing. The timing, type of training, target groups, and training material will be defined further in collaboration with the partners involved once the DSS/app is available.

In addition, two further dedicated PRESERVE workshops are planned: The **first workshop** will take place around **M36** of the project and will be organized by consortium partner **CHX**. The workshop will aim to outline and **discuss the 2030 Roadmap** for upcycled bioplastics (linked with task 8.9), involving the relevant stakeholders and investors.

The **second workshop** will be held around **M48** at the end of the project and function as the final PRESERVE workshop/conference to **showcase the project’s developed products** to the industry, and to release the fully validated results of the PRESERVE project to all stakeholders. This workshop will be organised by consortium partner **EUBP**, ideally in conjunction with their annual European Bioplastics Conference (which usually takes place towards the end of each year) as the leading platform for the bioplastics industry in Europe.

PRESERVE workshops and webinars:

	Partner	Timing	Topic(s)	Target group(s)	Targets / KPIs
Knowledge Transfer Workshops					
Knowledge transfer workshops I	ASU	M20	Exchange technical expertise and practices	Internal: consortium members (RTD centres only)	Training material for internal use

Knowledge transfer workshop II	ASU	M32	Transfer competences form RTD centres to other companies of the consortium	Internal: all consortium members	Training material for internal use
Knowledge transfer workshop III	ASU	M44	TBD – the third workshop will be defined later in the project	Internal and external audiences (TBD)	TBD
PRESERVE Webinars on Preliminary Results					
Webinar on radiation treatment results	NTT	M18	Radiation treatment of bio-based packaging materials	consortium members, industry end-users	30 registered participants, training material
Webinar on preliminary results I	CHX	M30	TBD will be defined later, depending on preliminary results available at that stage	The Circular Plastics Helix community (experts interested in recycling, plastics, packaging, and circularity representing RTOs, corporations, SMEs, and associations registered on the Crowdhelix platform)	50 registered participants, training material
Webinar on preliminary results II	CHX	M40	TBD – see above	The Circular Plastics Helix community (see above)	50 registered participants, training material
Webinar on DSS I	IRIS	M32	DSS/applications and preliminary results	Industry end-users, packaging/product designers	50 registered participants, training material
Webinar on DSS II	IRIS	M42	DSS/applications and results in end-use cases	Industry end-users, packaging/product designers, policy makers	50 registered participants, training material
PRESERVE Workshops					
Dedicated PRESERVE workshop I	CHX	M36	2030 Roadmap	Will be defined closer to the workshop, once detailed contents and topics are available.	50 registered participants, training material
Dedicated PRESERVE workshop II	EUBP	M48	Final PRESERVE conference to showcase results	All defined target audiences, incl. plastics & packaging industry, policy makers, standardisation bodies, Research & academics, brands & retailers	300 registered participants, and dedicated training material showcasing the final products and materials

Table 2: Overview of planned PRESERVE workshops and webinars

PRESERVE Roadshow:

According to the Grant Agreement, PRESERVE will also organise a “PRESERVE Roadshow” - an agenda of relevant European and international events over the course of the entire 48 months of the project that the consortium is planning to attend.

The training plan will therefore map out events that are being organised by individual project partners as part of their ongoing activities as well as events organised by third parties, including trade fairs, exhibitions, workshops, seminars, conferences, round tables, etc. of relevance in Europe and internationally that PRESERVE consortium members can attend, or where project partners can be involved in special sessions or scientific workshops with high impact due to the wider reach of the third-party event platform. The plan will also take advantage of specific dissemination events organized by the EC to present the project and its results such as Horizon2020 Bio based Industries, Environment and Circular Economy Info Days Workshops, and specific events organized by other projects funded under the same or related topics (see section 2.6 on external target groups).

The target is to have PRESERVE present during **at least 18 events** in Europe and internationally over the course of the 4 years of the project.

The table below shows a preliminary selection of potential events in the coming 12-24 months (after submission of this version of the plan). The list of events will be updated and expanded every reporting period, with the most recent version always being available on the PRESERVE website (<https://www.preserve-h2020.eu/events>).

A preliminary selection of relevant conferences/events includes:

Event	Organised by	Event format	Time, location	Topic(s) & theme(s)	Target group(s)	Potential activity for PRESERVE to get involved in	Status, (target) indicators
PRESERVE Roadshow							
MeetingPack 2022	AIMPLAS and AINIA	Annual conference	20-21 April 2022 (M16), Valencia, Spain	New sustainable materials for barrier packaging.	Packaging manufacturers, materials and packaging machinery. Food retailers. Food multinationals. Experts in food law.	PRESERVE project flyers will be handed out at the conference by AIMPLAS Networking opportunity	done
HISPACK 2022	Asociación Graph, pack & retail	Annual conference	24-27 May 2022, Barcelona, Spain	Ecodesign solutions, recyclability, reuse solutions & strategies, Use of recycled materials, Bioplastics and compostability, certification and traceability systems.	Packaging manufacturers, machinery manufacturers, material suppliers, food retailers.	PRESERVE project flyers will be handed out at the conference by AIMPLAS Networking opportunity	confirmed
Biobased Coatings Europe 2022	Active Communications International (ACI)	Conference	8-9 June 2022 (M18) Amsterdam, Netherlands	Insight into Biobased Coatings for packaging, policies & Regulations, Protective & Functional coatings using a biobased resin, Life Cycle Analysis and EoL for Biobased coatings.	Chemical companies, suppliers of biobased products, Equipment manufacturers, Regulatory and Policy officers, Solution providers, R&D Scientists,	AIMPLAS is confirmed as speaker and will present their work within the PRESERVE project.	confirmed

					Technical Managers.		
ANTEC	SPE-Inspiring Plastics Professionals	Annual conference	14-15 June 2022 (M18) Charlotte, NC, USA	Plastic design and manufacturing	Plastics professionals, suppliers, and buyers	Scientific partners (ASU, UNIBO etc.) or technology partners (AIMPLAS, CTB, IRIS, SÜDPACK etc.) to present PRESERVE demonstrator progresses	open
European Research and Innovation Days	European Commission	Sessions and workshops	June 2022 (M18) tbc, M30 M42	R&D, policy	Policymakers, researchers, entrepreneurs and public	Presentations at existing events or own side-event / session or workshop by scientific partners (ASU, UNIBO etc.), EUBP/KNEIA	open
ECOFUNCO Conference (final)	Ecofunco project via University of Pisa	Conference and round table	17-18 June 2022, Pisa	Green Chemistry and sustainable coatings	University, researchers and relevant SMEs	IRIS will be speaker and give a presentation during the conference, potentially on PRESERVE	planned
ICPMSET Int. Conference on Polymer Materials Science, Engineering and Technology	World Academy of Science, Technology, and Engineering	International Congress	9-10 June 2022 (M18) Hybrid event Copenhagen, Denmark	Research results on all aspects of Polymer Materials Science, Engineering and Technology	Academic scientists, researchers and research scholars, practitioners, and educators	Presentations of interim research results or submission of paper for Special Journal Issue as part of the Congress (tbd)	open
bio!PAC	Polymedia Publisher GmbH (Bioplastics Magazine)	Annual Conference	2022 (date and place tbc)	Bio-based packaging and bioplastics in general, waste management and end-of-life options, etc.	Experts from all areas of bioplastics packaging	Presentation of interim research results	open
Sustainable Economy Forum SEF	IBB Netzwerk GmbH	Summit	27-28 June 2022 (M18), Munich, Germany	Current obstacles and challenges to the realization of a sustainable bioeconomy, and innovative solutions for	Stakeholders working in the areas of bioplastics, plastic recycling, advanced	Presentation of interim research results (tbd)	open

				the elimination of these hurdles.	biopolymer analysis and synthesis.		
'The future of circular materials'	DenimX (consortium partner)	Business event	16 September 2022 (M21), Sittard-Geleen	The future of circular materials, incl. latest developments of products and projects	Targeted at CEO's, CSR managers, policymakers, Directors of SME's and entrepreneurs of chemical companies and research institutes	Preserve is invited to be one of the exhibitors that demonstrate our innovative project and present the latest developments in the field of packaging recycling.	planned
European Green Week	European Commission	Annual conference	28-29 September 2022 (M21) M30, M42	Circular Economy & Zero-Waste	Stakeholders from broader field of circular economy	Industry partners (BEIERSDORF, BOSTIK, CARB, FRAUNHOFER, GPI, ROMEI, SÜDPACK etc.) to present project & demonstrators, share best practices, network	open
Ecomondo	Italian Exhibition Group SpA	Fair / European Green Technology Expo	2022 (tbc)	Technological and industrial innovation in sectors of the circular economy: from the recovery of materials and energy to sustainable development.	All sectors and stakeholders of the Circular Economy	Take part in the Start-Up & Scale-up Innovation initiative: a space dedicated to innovative start-ups and scale-ups offering products/services relating to greentech, environmental sustainability in energy and sustainable mobility.	open
EFIB European Forum for Industrial Biotechnology & the Bioeconomy	EuropaBio	Annual European Conference	October 2022 (date and place tbc)	Status and outlook of bio-based industries in Europe.	Policy makers, stakeholders connected with the existing bio-based value chain.	Presentation of interim research results (tbd), networking, introducing policy recommendations	open

Cofresco Forum	Cofresco Frischhalt erprodukte GmbH & Co. KG	Webinar	22 October 2022 (online)	End-of-life in relation to food packaging	Audience from food and packaging research	ASU will act as speaker and present PRESERVE	planned
K-fair	Messe Düsseldorf GmbH	Fair	29-16 October 2022 (M22) Düsseldorf, Germany	Plastics and rubber industry, including the segments machinery and equipment, raw materials, technical components, and plastic products.	Entire plastics industry value chain	Participation (speaker, booth, etc.) to present project and demonstrator prototypes. Also featuring a Science Campus as a forum for science and research.	open
Multilayer Flexible Packaging	AMI	Annual Conference	15-17 November 2022 (M23), Vienna, Austria	The latest material and technological advances in films, raw materials, production techniques and applications that are setting the new standards for flexible packaging excellence in Europe	Experts from the entire (flexible packaging) value chain.	AIMPLAS plans involvement in the event, exactly how PRESERVE will be presented is still tbd	planned
European Bioplastics Conference	EUBP	Annual conference (hybrid event)	6-7 December 2022 (M24), Berlin, Germany M35, M47	Bioplastics market data & development, new bioplastics materials, innovations, applications, relevant policy updates, related issues (LCA, land-use, feedstocks, biodegradation in various environments)	Bioplastics industry, industry end-users, brands & retailers, technology providers, converters, product designers, policy makers, research & academia, media	M24 & M35: Presentation of first interims results. After M39: Final results.	planned over 300 registered participants (Poster) presentations (potentially in dedicated side-event) on first preliminary results Networking

InnoMeeting Europe	Innoforum Coaching GbR	Conference	6-7 December 2022, Berlin/hybrid	Flexpack against Climate Change	Audiences from food, packaging, research, and industry	ASU will act as speaker and present PRESERVE	planned
Interpack	Messe Düsseldorf GmbH	Fair	4-10 May 2023 (M29) Düsseldorf, Germany	Processes and machines for packaging, packaging materials, containers, and packaging manufacture.	Packaging industry (entire value chain)	Booth, speaker at a side event, etc., presentations by all partners (Scientific partners, industry partners, dissemination partners) on demonstrator developments	open
Plastics recycling world Expo Europe	AMI International (UK)	Exhibition	14-15 June 2023 (M30) Essen, Germany	Circular Economy & recycling progresses	Professionals from across the plastics recycling industry.	Technology partners (AIMPLAS, CTB, IRIS, SÜDPACK etc.) or industry partners (BEIERSDORF, BOSTIK, CARB, FRAUNHOFER, GPI, ROMEI, SÜDPACK etc.) Present PRESERVE technology & demonstrators	open
International Symposium of Coating Science and Technology	ISCST	Annual symposium and exhibition	September 2023 (tbc) (M33) M45	Advancements in liquid film coating, solidification of thin liquid films and related processes	Researchers, scientists and engineers from academia and industry	Scientific partners (ASU, UNIBO etc.) or technology partners (AIMPLAS, CTB, IRIS, SÜDPACK etc.) to present PRESERVE technology & demonstrators	open
International Conference on Life Cycle Management	WeLOOP	Conference	6-8 September 2023 (M33) Lille, France	Life Cycle Management	LCM experts from all sectors	NTT to present preliminary LCA project results D7.2 (to be specified)	planned
Fakuma - International Trade Fair for Plastics Processing	P. E. Schall GmbH & Co. KG	Fair	17-21 October 2023 (M34) Friedrichshafen, Germany	Processes and tools for efficient plastics processing (injection moulding, extrusion, thermoforming, and 3D printing)	Stakeholders from the entire plastics value chain	Exhibition stand or participation in side-event(s) (tbd)	open
Biobased Innovation	TKI-BEE	Student challenge	M40 tbc	Europe-wide student competition recognising	Research community	Scientific partners (ASU, UNIBO etc.) to submit adapted PRESERVE	open

Student Challenge Europe				excellence in the emerging bio-based sector		demonstrator component developed by students	
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Table 3: Preliminary selection of potential third-party events for the PRESERVE Roadshow

2.5. Training materials and educational resources

Training materials and resources will be provided for each training activity (prepared and compiled by the assigned partner) to support the effectiveness of the training (during the activity) and make the shared knowledge and data available publicly after the training event.

Training materials can include:

- Speaker/trainer presentations that were used during the training activity
- Poster presentation
- Visual and audio recordings of the training activity
- (Scientific) Publication
- Illustration/graphic or photographic images (instructional/educational)
- Video (instructional/educational)
- Case study
- Briefing paper or recommendations
- Consultations
- Tutorials or simulations
- Material portfolios
- App or other online-guided tools
- Other course materials (assignments, assessments, etc.)

Availability and accessibility:

To gather and offer all training materials in one single location and make them accessible publicly, the training materials are being made available on the project website. A dedicated space has been implemented by KNEIA (the partner in charge of the project website) on <https://www.preserve-h2020.eu/training-materials>. Access to all training materials is enabled for everyone (without password/login restrictions) inside and outside the project consortium.

At the end of the project, EUBP, together with ASU, will **consolidate and share selected training contents on the project website** and propose enriched contents to be shared **on the Multi-Stakeholders Platform** at <https://crowdhelix.com/helixes/circular-plastics>.

ASU will complement these activities **by educational training activities**, such as using the project and its results in teaching, in course materials and as a subject for theses in universities.

Open data management:

According to the European Commission's Open Access & Data Management Guidelines in Horizon 2020, PRESERVE will make research data findable, accessible, interoperable, and reusable to ensure it is soundly managed. This is considered a key conduit leading to knowledge discovery and innovation, and to subsequent data and knowledge integration and reuse.

That way, PRESERVE aims to maximise the access to, and re-use of training materials generated throughout the project, while considering the need to balance openness and protection of scientific information, commercialisation, and Intellectual Property Rights (IPR), privacy concerns, security as well as data management and preservation questions.

IP protection and knowledge exploitation guidelines:

As the project outputs are highly relevant for future market exploitation, most PRESERVE results will be protected where possible during the project (or directly after it). Their commercial exploitation will be pursued within 3-5 years after the project has ended, due to the value chain dependence of the results. However, the principles for knowledge transfer complement those relating to intellectual property rules by focusing more specifically on the active transfer and exploitation of such intellectual property, regardless of whether it is protected by IP rights. (European Commission, 2008).

The Consortium Agreement signed by the partners establishes the framework for the ownership of results and the transfer of results, especially section 8 of the Consortium Agreement.

For the activities detailed in this Training Plan, it is intended that the knowledge transfer is based on results owned by the Party that generates them (Article 8.1 of Consortium Agreement). In case of Joint Ownership of results, article 8.2 of the Consortium Agreement applies: "Each of the joint owners shall be entitled to use their jointly owned Results for non-commercial (funded or unfunded, cooperative or individual) research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), whereas use for non-commercial research activities means use for academic/teaching/scientific purposes, or mere internal use."

The project coordinator, in collaboration with the Exploitation and IPR Manager, Cristina Barragan (KNEIA), in terms of public data and following the GA mandate, will take all the appropriate measures to make selected data (i.e. with exception of data that could lead to IPR and which diffusion would be against commercial interest) openly available and usable for third parties for study, teaching (according to training activities hereby described) and research purposes via licensing or other means.

2.6. Target groups

The beneficiaries of knowledge sharing are divided into two main groups: internal and external target groups.

Internal groups:

PRESERVE will enable knowhow transfer between the members of the consortium through its value chain, including their (academic/research) staff (and students):

- from technology institutes & academia (7 RTOs: FRAUNHOFER IVV, UNIBO, AIMPLAS, ASU, CTB, NTT, ITENE)
- to industry participants (10 SMEs, including an EU industry association and 9 large enterprises that are leaders in their field):
 - polymers and bio-based raw materials (BIOPOL, EUBP, CARB, BOSTIK/ARKEMA),
 - plastic/packaging converters (PLANET, SUDPACK, GPI, SIBO),
 - end-users, packers (DANONE RD, FERRERO, BDF),

- up-recyclers, providers of technological solutions, H&S, and environment assessment (ROMEI, PLATO, IRIS, DENIMX, OWS);
- and innovation/dissemination specialists (KNEIA, CHX).

External groups:

External beneficiaries include entities from the public and private sector that could be potentially interested in exchanging the knowledge and data gained throughout the project. The external stakeholder groups listed in the following table are coherent (but not identical) with the communication target groups identified in D8.2.

Overview of target groups for training activities:

Stakeholder groups	Subgroups	Relevance & interests	Training activities
Internal (members of the project consortium)	<ul style="list-style-type: none"> ● RTOs ● Bio-based raw materials and polymer providers, ● Plastic converters, ● End-users, brands, ● Upcyclers, providers of EoL technological solutions, environmental assessments, ● Innovation/dissemination specialists 	Knowledge transfer between the partners of the project consortium ensures that all partners will have the necessary information and means to complete their research tasks and to understand all the different contributions that went into developing the final product demonstrators.	<p>Dedicated knowledge sharing workshops</p> <p>All other training events as needed</p>
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Manufacturers and industry end-users	Chemical industry	Training will aim at generating industry awareness for the project's innovative bio-based coatings, adhesives, and biopolymers for (food) packaging solutions, and stimulating interest in future adoption of and investment in these PRESERVE solutions.	<p>PRESERVE webinars & workshops</p> <p>PRESERVE Roadshow</p> <p>PRESERVE training materials</p>
	Food industry	Training activities will aim at generating awareness and interest in the innovative food packaging solutions made from novel bio-based polymers developed during the PRESERVE project. Raise awareness for the environmental and sustainability benefits of the PRESERVE solutions compared	<p>PRESERVE webinars & workshops</p> <p>PRESERVE Roadshow</p> <p>PRESERVE training materials</p>



		to the currently used materials and applications.	
	Businesses and organisations involved in manufacturing packaging materials and applications, incl. raw material providers, technology & equipment suppliers, converters	Training activities will aim at providing access to new technologies, materials, and processes developed during the PRESERVE project to generate an industry awareness for the innovative solutions and stimulate interest in the future adoption of and investments in the project results.	PRESERVE webinars & workshops PRESERVE Roadshow PRESERVE training materials
	Packaging / product designers, industry end-users (brands, retailers)	Training activities will aim at demonstrating the benefits of the PRESERVE packaging solutions in terms of their recyclability and increased sustainability throughout the value chain, and their compliance with the highest quality and health & safety standards for (food) packaging. Raise awareness for innovative SRM solutions for (food) packaging applications. And ultimately stimulate interest in the future adoption of the PRESERVE packaging solutions for their products by showing the benefits of these innovations compared to currently used solutions.	PRESERVE webinars & workshops PRESERVE Roadshow PRESERVE training materials
	Bioplastics and bio-packaging producers	Training activities will aim at showcasing the improved properties and benefits of the developed materials and packaging solutions to make sure production of bioplastic materials are scaled-up and the need for these novel materials can be met. Demonstrate how PRESERVE solutions comply with market needs, regulations for packaging, as well as the highest standards for quality, health & safety, and sustainability.	PRESERVE webinars & workshops PRESERVE Roadshow PRESERVE training materials
Recyclers	Recycling companies, upcycling technology providers	Training activities will aim at exhibiting the innovative recycling and upcycling processes that have been developed during the	PRESERVE webinars & workshops PRESERVE Roadshow PRESERVE training materials



		PRESERVE project to increase the reuse of recycled materials and implement these new upcycling technologies.	
Policy makers	<p>EU policy makers in relevant fields (environment, food, chemicals, consumer protection, plastics, waste management, climate action, etc.) from all levels, incl.:</p> <ul style="list-style-type: none"> • EU Commission (DGs, Directors, Advisors, clerks) • EU Parliament (MEPs) • EU Council (Presidency, members of the Environment Council, etc.) • European associations in relevant fields (plastics, bioplastics, packaging, etc.) • European NGOs in relevant fields (zero waste, climate action, plastic waste, marine pollution, etc.) 	<p>PRESERVE will engage with relevant policy makers to raise awareness for the developed packaging solutions and their sustainability benefits, supporting the transition to a post-petroleum society by use of sustainable bio-based materials across the whole bio-based value chain, and to make sure future funding and investment in these solutions as secured and matches with the regulatory frameworks and policies that affect these innovative packaging solutions.</p>	<p>PRESERVE Roadshow, specifically special policy sessions PRESERVE policy briefings</p>
Standardisation bodies	<ul style="list-style-type: none"> • Standardisation bodies on EU and Member States level • Providers of certification schemes and accordingly labels/logos 	<p>Standardisation bodies are a relevant stakeholder for the project to echo the relevance and conformity of the newly developed solutions. Training activities will aim at making sure PRESERVE solutions comply with current standards, but also at contributing to the revision or development of (new) standards by providing information about the innovative solutions developed during PRESERVE.</p>	<p>PRESERVE Roadshow PRESERVE briefings & recommendations PRESERVE Roadshow, specifically special sessions on policy and standardisation issues</p>
Research community	<ol style="list-style-type: none"> 1. Academic & research experts in the field of plastic packaging, recycling, upcycling, circular economy, 2. Other EU-funded projects focussed on circular plastics solutions (find more 	<p>Training will aim at raising awareness for the objectives and progress during the PRESERVE project, the findings and final results, as well as boosting research in the field of bioplastics and making sure these findings can be used by other researchers and projects to</p>	<p>PRESERVE webinars & workshops PRESERVE Roadshow PRESERVE training materials</p>

	<p>details in next section below)</p>	<p>further the EU knowledge base in the field of bio-based materials. Training will also aim at creating new platforms for collaboration to drive innovation, to strengthen a sense of community and inclusion among the experts who are pursuing a similar shared vision.</p>	
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Table 4: Target groups for PRESERVE training activities

Collaboration with other projects and networks:

The collaboration between PRESERVE and other related projects can facilitate access to a greater audience of relevant stakeholders, help to provide and exchange relevant training material, and set the ground for the organisation and coordination of joint training events, all of which will pay into achieving the goal to support further research in the field of bioplastics packaging.

Currently established collaborations include a cooperation with [upPE-T](#) (Grant Agreement No. 952983) and [UPLIFT](#) (Grant Agreement No. 953073), the two other sibling projects under the same topic call [CE-BIOTEC-09-2020](#) 'Upcycling Bio Plastics of food and drinks packaging' (Cordis, 2019) as PRESERVE. Since May 2021, consortium and dissemination leaders of the three projects meet regularly to define the most appropriate clustering activities around the topic of upcycling bioplastics of food and drinks packaging. A first joint workshop was held in October 2021 on circular economy, recycling, and biodegradable packaging, a second workshop on the relevant standardisation for bioplastics and packaging was held in April 2022 (see section 3 - report on past training activities). The aim of this collaboration is to share knowledge between the three projects of the same Horizon topic call, and to set up a joint roadmap for dissemination and possibly elaboration of a joint policy paper. In total, the three sibling projects comprise 58



Figure 2: (unofficial) logo of the collaboration between the three sibling project of the topic call "Upcycling Bio-plastics of food and drinks packaging".

partners from 19 European countries with a total project budget of 23.3 million Euro.



In July 2021, PRESERVE became an official member of the European Bioeconomy Network ([EUBioNet](#)), which is a proactive alliance of EU financed bioeconomy projects. One of the key goals of the network is to maximize efforts by increasing knowledge sharing and coordination of collaborative activities and events, which will also be used for the upcoming PRESERVE workshop.



PRESERVE partner EUBP established another connection with the important collaboration platform [European Bioeconomy University](#) (EBU) in March 2021. PRESERVE has been presented to EBU's working group and during an EBU-internal event [EBU Scientific Forum](#) (23 September 2021). EBU brings together six

of Europe's major bioeconomy universities. As a centre for knowledge transfer, it will support the European approach of democratic, transparent, and participatory procedures and foster actual change in an innovative and sustainable way. Further cooperation potentials, such as joint summer schools with the scientific PRESERVE partners, will be discussed further during the project.

PRESERVE will further aim at clustering with projects funded under the topic BIOTEC-09-2020, as well as projects funded under related topics (SC1-BHC-36-2020; SFS-21-2020; BG-07-2020; FNR-06-2020; FNR-05-2020; CE- SC5-24-2020; CE-SC5-28-2020; CE-SC5-25-2020; CE-SC5-29-2020, CE-SC5-30-2020). Clustering activities comprise the following national and European projects:

European projects

- [GLAUKOS](#) (Circular solutions for the textile industry)
 - H2020 GA 887711
 - Project duration: June 2020 – May 2024
 - Contact initiated during EUBioNet joining and discussions with EUBioNet lead Susanna Albertini ([FVA New Media Research](#)) on 7 July 2021
- [Papillons](#) (Plastics in agricultural production)
 - H2020 GA 101000210
 - Project duration: June 2021 – May 2025
 - Contact initiated by Papillions' Communication Manager, Szabolcs Zöldréti from Farm Europe on 11 February 2022
- [CIRCUL-A-BILITY](#) (Rethinking Packaging for Circular and Sustainable Food Supply Chains of the Future)
 - COST action CA191249
 - Project duration: November 2020 – October 2024
 - Contact initiated via project coordinator Prof Milena Corredig (Aarhus University, Department of Food Science) on 15 September 2021
- Sibling projects on upcycling bioplastics of food and drinks packaging under Horizon 2020 call [CE-BIOTEC-09-2020](#)
 - UPLIFT (sUustainable PLastIcs for the Food and drink packaging indusTry)
 - H2020 GA 953073
 - Project duration: March 2021 – February 2025
 - PRESERVE sibling project, see paragraph above
 - upPE-T (Upcycling of PE and PET wastes to generate biodegradable bioplastics for food and drink packaging)
 - H2020 GA 953214
 - Project duration: November 2020 – October 2024
 - PRESERVE sibling project, see paragraph above
- Sibling projects on improving the sorting, separation and recycling of composite and multi-layer materials under Horizon 2020 call [CE-SC5-24-2020](#)
 - [CIMPA](#) (A Circular Multilayer Plastic Approach for value retention of end-of-life multilayer films)
 - H2020 GA 101003864
 - Project duration: June 2021 – May 2024
 - **PRESERVE project partners involved: AIMPLAS**
 - [CIRCULAR FoodPack](#) (Circular Packaging for Direct Food Contact Applications)

- H2020 GA 101003806
- Project duration: June 2021 – November 2024
- **PRESERVE project partners involved: Fraunhofer IVV (coordinator), IRIS**
- [MERLIN](#) (Increasing the quality and rate of MultilayER packaging recycling waste)
 - H2020 GA 101003883
 - Project duration: June 2021 – May 2024
 - **PRESERVE project partners involved: ITENE (coordinator), IRIS**
- [Sol-Rec2](#) (Innovative digital watermarks and green solvents for the recovery and recycling of multi-layer materials)
 - H2020 GA 101003532
 - Project duration: June 2021 – May 2024
 - **PRESERVE project partners involved: AIMPLAS**

National projects (Germany: Federal Ministry of Food and Agriculture BMEL / Fachagentur Nachwachsende Rohstoffe e. V.)

- [Bio2Bottle](#) (Novel, durable biodegradable bottles made from bioplastics)
 - GA 2220NR043A, GA 2220NR043B, GA 2220NR043C, GA 2220NR043D
 - Project duration: October 2020 – September 2023
 - Contact initiated via project coordinator Dr. Inna Bretz (Fraunhofer UMSICHT, 12 July 2021)
- [PackMit](#) (Packaging information transfer - Training concept for packaging information transfer in the food industry)
 - GA 2220NR006A
 - Project duration: July 2021 – June 2024
 - **PRESERVE project partner involved: ASU**
- [PLA4MAP](#) (PLA trays with improved barrier properties for use in MAP packaging concepts for sensitive foods)
 - GA 2219NR148, GA 2219NR448
 - Project duration: May 2020 – April 2023
 - **PRESERVE project partners involved: Fraunhofer IVV, ASU**

Furthermore, the project will contribute to the continuity of different plastic multipliers initiatives and build upon the virtual community “Circular Plastics Helix” that has been launched by CHX within the MultiCycle project.

3. Training plan

3.1. Overall timeline

PRESERVE is a 4-year project running from January 2021 till December 2024. Education and training activities will take place throughout the project lifetime, although a larger share of these will be planned for much later towards the end of the project.

Initial activities – commencing towards the end of the first half of the project (around M20) – will focus on sharing knowledge between the partners within the project consortium, while the requirements for the product demonstrators are defined and first prototypes are being developed and tested. This initial phase will mainly focus on network building with external stakeholders (mainly through the PRESERVE Roadshow) and creating awareness for the project and the research that is carried out within PRESERVE.

Once initial results have been achieved and the first significant achievements will be available in relation with the development of bio-based coatings and adhesives for tailoring packaging properties, as well as the end-of-life options and upcycling strategies for the developed materials, that first knowledge will also be made available to external stakeholders through dedicated PRESERVE webinars and workshops (starting around M30).

The last phase (M40-48) will be devoted to the exchange of the results and research findings with the research community as well as industrial end-users and the wider interested public, in order to validate their interest in the developed materials and products.

The timeline and detailed training plan will be reviewed and updated regularly as the project progresses. More details will be available depending on the project’s advances, the identification of relevant stakeholders, or the collaboration with other projects and networks.

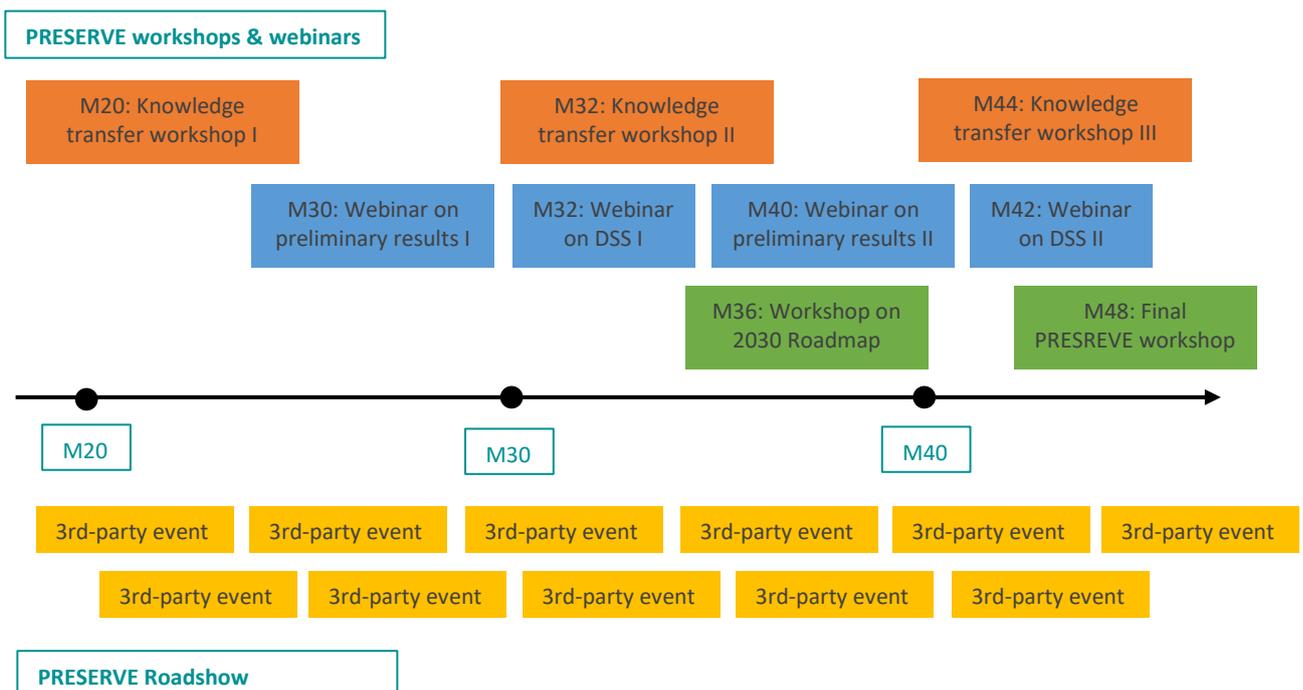


Figure 3: Overall timeline for PRESERVE training activities

3.2. Training plan

Timing	Training type: Event title	Project partner resp.	Description / Training topic	Audiences	Target indicators	Training material	Status
20 Oct 2021 (M10)	Joint workshop with sibling H2020 projects: “Upcycling bioplastics from food & drinks packaging”	KNEIA, EUBP	Joint workshop to present the three initiatives on transforming food and drink packaging that cannot be recycled into new materials and products of better quality and with better environmental value.	Research community and other related EU research and innovation projects and clusters	50 registered participants	Speaker presentations (EUBP on bioplastics, policy & standards; IRIS on PRESERVE)	done For details see report 3.3.1
31 Nov – 1 Dec 2021 (M11)	PRESERVE Roadshow: European Bioplastics Conference 2021	ASU	Poster presentation ASU (Erik Sauter) on “Surface functionalisation of PLA-based films”	Broad audiences, incl. industry, end-users, policy makers, research & academia	Target of ‘300 registered participants’ was reached with over 320 participants (online and physical event)	Poster and presentation (incl. video presentation) available online on event website and PRESERVE website.	done
1-2 Dec 2021 (M12)	PRESERVE Roadshow: International Seminar on Plastics Recycling	CHX	Crowdhelix (CHX, Natalia Grzomba) to present the PRESERVE Circular Plastics Helix as a speaker during the seminar; presentation title: “Circular Plastics Helix: community with an impact”	Recycling and plastics industry	Target of ‘50 registered participants’ was reached with 120 registered participants during the event	Speaker presentation available online (event website and PRESERVE website)	done
27 April 2022 (M16)	Joint workshop with sibling H2020 projects: “Standardisation and Circular	EUBP, KNEIA	EUBP together with DIN CERTCO presented on the standardisation	R&D community and other related	50 registered participants	EUBP’s presentation on the	Done

	Economy – Three European projects working in the framework of standardisation”		landscape in Europe concerning bioplastics	EU projects and innovation clusters		standardisation landscape	For details see report 3.3.3
June 2022 (M18)	PRESERVE General Assembly M18	IRIS	Official periodic meeting of the PRESERVE consortium to update on progress and deliverables	Consortium members	30 registered participants	Each Work Package lead and consortium member will give a presentation on their respective tasks; material is confidential but will be made available to all project partners	planned
June 2022 (M18)	PRESERVE Webinar on radiation treatment	NTT, ASU	Radiation treatment results of bio-based packaging materials	consortium members, industry end-users	30 registered participants, training material	Topics to be covered include: - Technical overview of E-beam technology (NTT) - Radiation treatment of biobased packaging materials (ASU) - E-beam sterilization for food producers (ASU) Presentations will be made available on the PRESERVE Website	planned
5 September 2022 (M21)	PRESERVE Knowledge Transfer Workshop I: “Exchange technical expertise and practices”	ASU	Exchange technical expertise and practices	Internal consortium members (RTD centres only)	Training materials for internal use	The knowledge workshop has been set up and confirmed. Exact contents and agenda still to be developed (at time of this report)	planned

(M30)	PRESERVE Webinar on preliminary results I	CHX	TBD will be defined later, depending on preliminary results available at that stage	The Circular Plastics Helix community	50 registered participants, training material	TBD	planned
(M32)	PRESERVE Webinar on DSS I	IRIS	DSS/applications and preliminary results	Industry end-users, packaging/product designers	50 registered participants, training material	TBD	planned
(M32)	PRESERVE Knowledge Transfer Workshop II	ASU	Transfer competences from RTD centres to other companies of the consortium	Internal: all consortium members	Training materials for internal use	TBD	planned
(M36)	PRESERVE Workshop I	CHX	2030 Roadmap	Will be defined closer to the workshop, once detailed contents and topics are available.	50 registered participants, training material	TBD	planned
(M40)	PRESERVE Webinar on preliminary results II	CHX	TBD will be defined later, depending on preliminary results available at that stage	The Circular Plastics Helix community	50 registered participants, training material	TBD	planned
(M42)	PRESERVE Webinar on DSS II	IRIS	DSS/applications and results/end-use cases	Industry end-users, packaging/product designers, policy makers	50 registered participants, training material	TBD	planned
(M44)	PRESERVE Knowledge Transfer Workshop III	ASU	TBD	Internal and external audiences (TBD)	TBD	TBD	planned
(M48)	PRESERVE Workshop II	EUBP	Final PRESERVE conference to showcase results	All defined target audiences, incl. plastics & packaging industry, policy makers, standardisation bodies, Research &	300 registered participants, and dedicated training material showcasing the final products and materials	TBD	planned

				academics, brands & retailers			

Table 5: PRESERVE Training Plan

3.3. Report on past training activities

The following section provides information on successfully performed training activities.

3.3.1. Workshop “Upcycling bioplastics of food & drink packaging” | 20 October 2021

Training Type	Online workshop
Title	“Upcycling bioplastics of food and drink packaging”
Date, location	20 October 2021 (project month M10), online (Zoom)
Organised by	“H2020 Upcycling bioplastics” collaboration between sibling projects PRESERVE, Up-PET, UPLIFT
PRESERVE partners involved	EUBP, KNEIA, IRIS
Description of event/activity	<p>PRESERVE, UPLIFT, and upPE-T held a joint workshop to present their initiatives on transforming food and drink packaging that cannot be recycled into new materials and products of better quality and with better environmental value. The three projects are EU-funded projects under the European Union’s Horizon 2020 Research and Innovation Programme.</p> <p>The workshop was divided into three parts:</p> <p>(1) Expert presentations to give an overview of the European bioplastics sector by the following speakers:</p> <ul style="list-style-type: none"> • Hasso von Pogrell, Managing Director of European Bioplastics e.V. (EUBP) and consortium member of PRESERVE • Aleksandra Branković, Senior Researcher at IRI – Institute for Development and Innovation in Belgrade, Serbia <p>(2) Presentations of the three sibling projects, showcasing the objectives, methodologies, impacts, and expected results, including the following speakers:</p> <ul style="list-style-type: none"> • Cristiano Varrone, Associate Professor in Fermentation Technology and EU Project Coordinator • Aldo Ramirez, Project Manager at IRIS Engineering and Project Coordinator at PRESERVE • Fuensanta Monzó, Responsible for R&D projects at CETEC Technological Center of Footwear and Plastic of the Region of Murcia <p>(3) Open discussion on the importance of project clustering.</p> <p>The discussion and Q&A session focussed on the joint objective of all three projects, which is to overcome current challenges for plastics recycling and upcycling: Plastics used in food and drink packaging applications are made from a range of polymers and combined with specific additives to meet each manufacturer’s functional and design requirements. This diversity can complicate the recycling process, make it more costly, and affect the quality and value of the recycled materials. Given these challenges, all three projects are geared towards developing technological improvements with regards to better manufacturing and processing practices for these plastic materials to facilitate proper waste management.</p>
Description of PRESERVE	Presentation by Hasso von Pogrell, Managing Director at European Bioplastics e.V. (EUBP), consortium member of PRESERVE, on the bioplastics sector and

<p>involvement & training content</p>	<p>market in Europe, paying specific focus on current market developments and barriers, including legislative and regulatory frameworks.</p> <p>Presentation by Aldo Ramirez, Project Manager at IRIS Engineering and Project Coordinator of PRESERVE, gave an overview of the project, current status of developments and work packages, as well as an outlook on next steps and milestones.</p>
<p>Target group(s)</p>	<p>Research community, and members of related R&D projects</p>
<p>Number of registered participants</p>	<p>249</p>
<p>Training outputs</p>	<p>Speaker presentations (will be made available on the PRESERVE website)</p>
<p>Target indicators</p>	<ul style="list-style-type: none"> • 50 registered participants. • Training material (presentations on the project's progress and the bioplastics sector in general) made publicly available. • Networking with other relevant stakeholders and projects in order to raise awareness for the project's objectives and targeted product innovations.
<p>Evaluation of training</p>	<p>All target indicators have been met.</p>
<p>Notes/comments</p>	<p>Due to current COVID-19 restrictions, the meeting was held online. This made the workshop easily accessible and led to a much higher number of participants than originally expected.</p>
<p>Photo of training (if available)</p>	 <p><i>Image: Screenshot of the workshop's speakers and moderators.</i></p>
<p>Link to training material / workshop recording</p>	<p>https://www.youtube.com/watch?v=SMkbrE-Mxew</p>



3.3.2. Roadshow: PRESERVE @ 16th European Bioplastics Conference | 30 Nov – 1 Dec 2021

Training Type	PRESERVE Roadshow
Title	16th European Bioplastics Conference
Date, location	30 November – 1 December 2021 (project month M12), hybrid event (online platform & Berlin)
Organised by	European Bioplastics e. V. (EUBP)
PRESERVE partners involved	EUBP, ASU
Description of event/activity	<p>The annual European Bioplastics Conference is Europe’s leading business and discussion forum within the global bioplastics sector. At the 16th European Bioplastics Conference 2021 industry experts discussed the role of bioplastics within the European Green Deal. The conference discussions confirmed that bioplastics make significant contributions to help achieving the European Union’s ambitious climate goals described in the EU strategy.</p> <p>The event was held in a hybrid format attracting over 320 participants. Around 140 participants attended in person at the event venue in Berlin, while the other attendees were able to follow and actively engage online. In ten different sessions, which included an exciting keynote and presentations as well as lively panel discussions, over 40 speakers and moderators focused on the contribution that bio-based and biodegradable and compostable plastics can make to achieve a circular economy.</p> <p>At the conference exhibition, around 20 companies and institutions showcased the high diversity of new products, materials, and applications. The conference also included a poster exhibition with fifteen different universities and research institutes presenting bioplastics-related projects.</p>
Description of PRESERVE involvement & training content	PRESERVE project was presented by the partner and scientific manager ASU in a poster titled "Nanoscale surface hydrophobization of whey protein based film", authored by Erik Sauter, Mara Strenger, Corina Reichert, Max Sturm and Max Schmidt.
Target group(s)	Broad audiences, incl. industry, end-users, policy makers, research & academia
Number of registered participants	320
Training outputs	Poster presentations (will be made available on the PRESERVE website)
Target indicators	<ul style="list-style-type: none"> • 300 registered participants. • Training material (poster presentations) made publicly available. • Networking with other relevant stakeholders and projects in order to raise awareness for the project’s objectives and targeted product innovations.
Evaluation of training	All target indicators have been met.
Notes/comments	none

Photo of training (if available)



Image: Screenshot of the PRESERVE Poster Booth at the 16th European Bioplastics Conference.

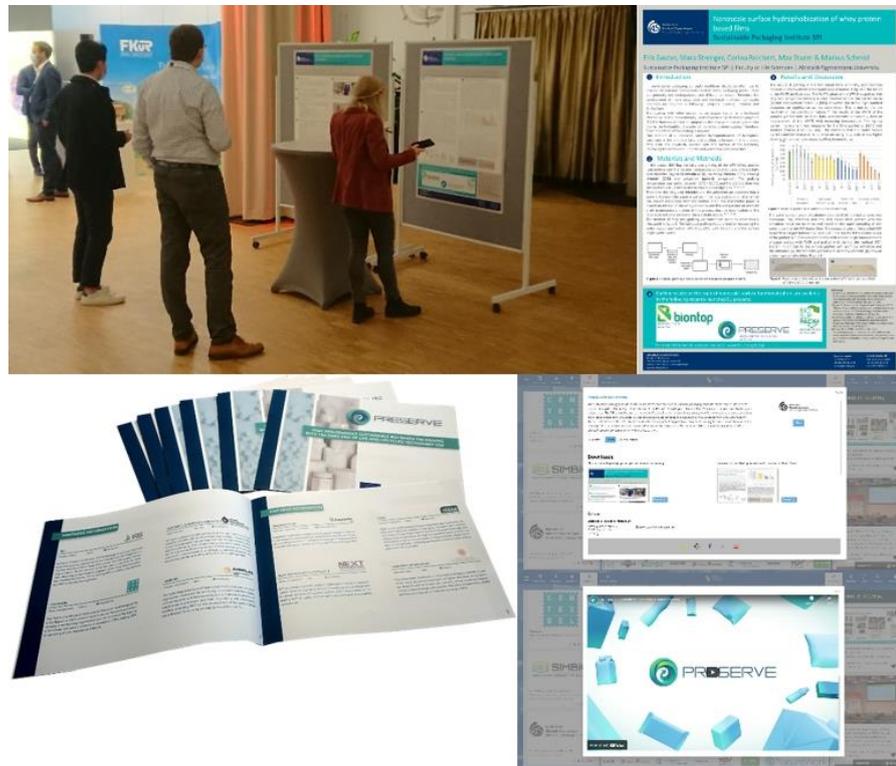


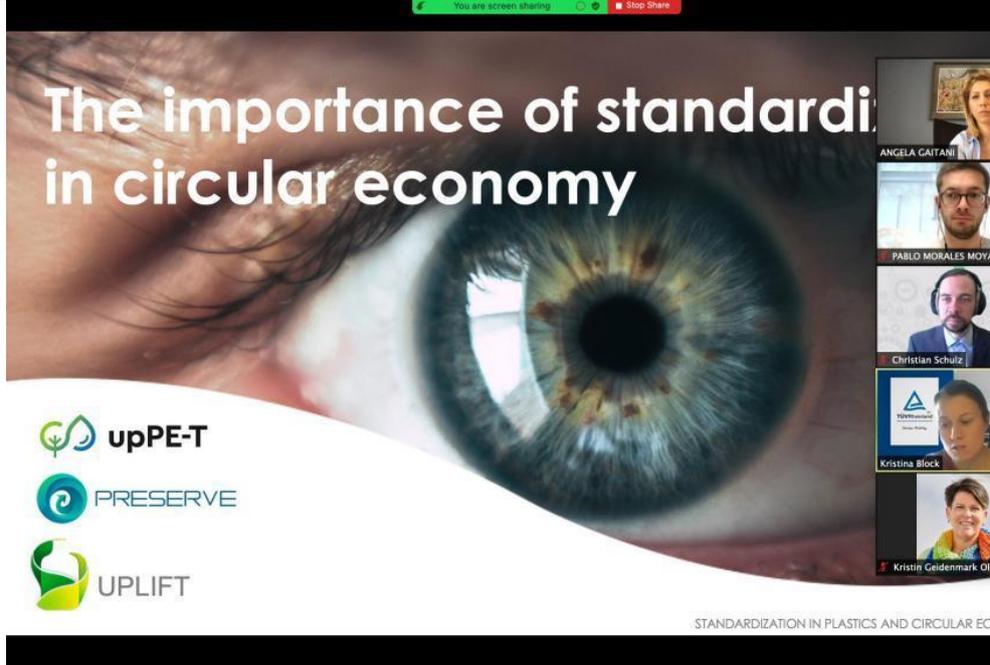
Image: Collage of the physical poster booth incl. the presented materials at the 16th European Bioplastics Conference.

Link to training material / workshop recording

<https://www.preserve-h2020.eu/news/preserve-presented-16th-eubp-conference>

3.3.3. Workshop “Standardisation in plastics and circular economy” | 27 April 2022

Training Type	Online workshop
Title	“Standardisation in plastics and circular economy”
Date, location	27 April 2022 (project month M16), online (Zoom)
Organised by	“H2020 Upcycling bioplastics” collaboration between sibling projects PRESERVE, Up-PET, UPLIFT
PRESERVE partners involved	EUBP, KNEIA, IRIS, CHX
Description of event/activity	<p>PRESERVE, UPLIFT, and upPE-T held a joint workshop to present their initiatives and presented each project’s work toward standardization. The three projects are EU-funded projects under the European Union’s Horizon 2020 Research and Innovation Programme.</p> <p>The workshop was divided into three parts:</p> <ol style="list-style-type: none"> Expert introduction to frame the standardization in Europe and how European R&I projects can use standardisation as a successful conduit to valorise their results <ul style="list-style-type: none"> “Sustainable packaging, research trends and innovation” by Susana Xará, Project Adviser - Raw Materials at Health and Digital Executive Agency (HaDEA) - European Commission Sibling projects approaches to standardization and CEN-CENELEC Workshop Agreements (CWAs) <ul style="list-style-type: none"> “Standardization of the UPLIFT technology” by Alberto Barranca, from AIMPLAS (UPLIFT) "Standardisation and certification in PRESERVE" by Christian Schulz, from EUBP (PRESERVE) and Kristina Bock, from DIN CERTCO “Fast track standards: CEN-CENELEC Workshop Agreements (CWAs) by Henar Araguzo Rivera, from UNE (upPE-T) Closing session <ul style="list-style-type: none"> “The challenges of standardization in circular economy” by Kristin Geidenmark Olofsson, from Circular Plastic Alliance Open discussion on the importance of standardization in circular economy. <p>The exchange of views and Q&A session focused on discussing the outcomes of the presentations from the projects and the experts. The participants agreed that more involvement in standardization is needed from all stakeholders involved in the research for new and innovative materials. Also, the certifications schemes for materials containing recycled content and bio-based materials need to be updated, according to the latest advances. Also, the participants remarked the importance of collaborating in the identification of the different waste sorting systems in the EU, in order to monitor and try to reach a standard also in that field.</p>
Description of PRESERVE involvement & training content	<p>Presentation by Christian Schulz, EU Project Manager at European Bioplastics e.V. (EUBP), consortium member of PRESERVE, on the standardization in plastics and bioplastics sector in Europe, paying specific focus on the role of EUBP in supporting PRESERVE’s standardization, certification and labelling.</p> <p>Christian Schulz was supported by Kristina Bock, from DIN CERTCO, invited by EUBP to join the workshop and present insights on certification for bio-based products.</p>

Target group(s)	Research community, and members of related R&D projects
Number of registered participants	116 registered participants
Training outputs	Speaker presentations (will be made available on the PRESERVE website)
Target indicators	<ul style="list-style-type: none"> • 50 registered participants. • Training material (presentations on the project's progress and the bioplastics sector in general) made publicly available. • Networking with other relevant stakeholders and projects in order to raise awareness for the project's objectives and targeted product innovations.
Evaluation of training	All target indicators have been met.
Notes/comments	Due to current COVID-19 restrictions, the meeting was held online. This made the workshop easily accessible and led to a much higher number of participants than originally expected.
Photo of training (if available)	 <p><i>Image: Screenshot of the workshop's speakers and moderators.</i></p>
Link to training material / workshop recording	<p>Workshop documents/training material: https://www.preserve-h2020.eu/training-materials?field_tm_topic_target_id=42</p> <p>Session recording: https://www.youtube.com/watch?v=Pb71dhftwiw</p>

4. Organisation & logistics

4.1. Responsibilities

The overall task of overseeing the organisation of training activities and making sure target indicators are reached is led by EUBP together with the work package leader KNEIA.

A selected group of project partners will be directly involved in and responsible for organising, hosting, and leading certain training activities (as agreed in Grant Agreement and stated in the training plan). The assigned partners will be responsible for all the logistical and organisational tasks and resources involved in the event management. EUBP and KNEIA will offer support in relation to invitation management, agenda drafting and selection of speakers/trainers, as well as event marketing and follow-up reporting activities to measure target indicators and make training materials available publicly.

The training materials will be developed by the partners responsible for and involved in a particular activity according to their expertise and can be supported by EUBP and KNEIA to maintain consistent branding (as outlined in Del. 8.2).

All consortium partners will be involved in identifying suitable opportunities for training activities, contributing ideas, reviewing materials, and assisting with the delivery to their stakeholders.

Training events will be announced and advertised through all available PRESERVE online channels (website, newsletter, social media profiles, emails, collaborations, etc.) as well as individual channels, including the 'Circular Plastics Helix' of the project partners.



4.2. Reporting template

Training Type	
Title	
Date, location (Project month)	
Organised by	
PRESERVE partners involved	
Description of event/activity	<i>[event format, agenda, speakers/ trainers, content/topics, training materials, etc.]</i>
Description of PRESERVE involvement & training content	<i>[if different from above/third-party event]</i>
Target group(s)	
Number of registered participants	
Training outputs	<i>[training material, incl. links to resources]</i>
Target indicators	<i>[according to training plan]</i>
Evaluation of training	
Notes/comments	
Photo of training (if available)	

Table 6: Reporting template for training activities

4.3. Considerations on events during the COVID-19 pandemic

Depending on the status of the coronavirus pandemic at the time of a certain planned training activity, responsible PRESERVE partners will make sure the training objectives stay on track while mitigating potential risks.

As the epidemiological situation is still evolving and uncertainties remain with respect to the dynamic of the transmission of COVID-19, the organizers will consult COVID-19 situation reports provided by the WHO as well as the relevant (place of event) national COVID-19 situation reports.

Potential restrictions on events (travel bans, lockdowns, quarantine rules, restrictions on gatherings/events, etc.) in the particular country where the activity is to take place will be taken into consideration when planning and organising an activity. If face-to-face meetings are restricted, an online/virtual option for the training activity will be made available to the participants.

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