



**Producing novel non-plant biomass feedstocks
and bio-based products through upcycling and
the cascading use of brewery side-streams**

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D7.2

Engagement strategy to target bio-based industries

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Additional author(s) and contribution	
Name	Organisation
Julia Ponce (reviewer)	AINIA
Shaghayegh Mehdizadeh (reviewer)	GENIA
Jose Manuel Iranzo Domingo (reviewer)	GENIA

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Executive Summary

The *Engagement strategy to target bio-based industries* (deliverable 7.2 of WP7: Dissemination and Communication) forms part of the process of task 7.3: Engagement with bio-based industries, in guiding CHEERS activities towards a meaningful dialogue with potential stakeholders of CHEERS processes, outcomes and products. It will be guided by and work in conjunction with the planned activities of D7.1: The dissemination and communication plan, and will be supported by all tasks of WP7, especially the workshops and co-design activities of task 7.6: Co-design of solutions for addressing environmental impacts.

The main objective of this strategy is to provide to all partners engagement channels, methodologies and opportunities when considering possible links with bio-based industries and their stakeholders. This approach will consider all of the main CHEERS outputs, including the two platforms: i) insect – WP2 led by PROTE, and ii) microbial – WP3 led by AQUALIA. It will also separately consider the five, downstream products the platforms will contribute towards; protein-enriched drinks, animal feed, disinfectant, cosmetics, and pet food (WP4 and WP5 led by GENIA and SYMRISE respectively).

In summary, this document describes the most relevant aspects of the strategy in engaging bio-based industries for the CHEERS project. It establishes responsibilities, timings and processes, and includes practical engagement examples for the different CHEERS outcomes and their potential stakeholder interest.

1 Introduction

This document describes the CHEERS project's Engagement strategy to target bio-based industries, and the actions that will be carried in order to achieve the objectives described. The document has been conceived and prepared by EARTHWATCH, work package 7 (Dissemination and Communication) engagement and co-design leader (tasks 7.3 and 7.6). EARTHWATCH together with AINIA (work package 7 leader) and INNOVARUM (tasks 7.4 and 7.5 leader) will oversee implementation, coordination and execution of the planned actions outlined in this document.

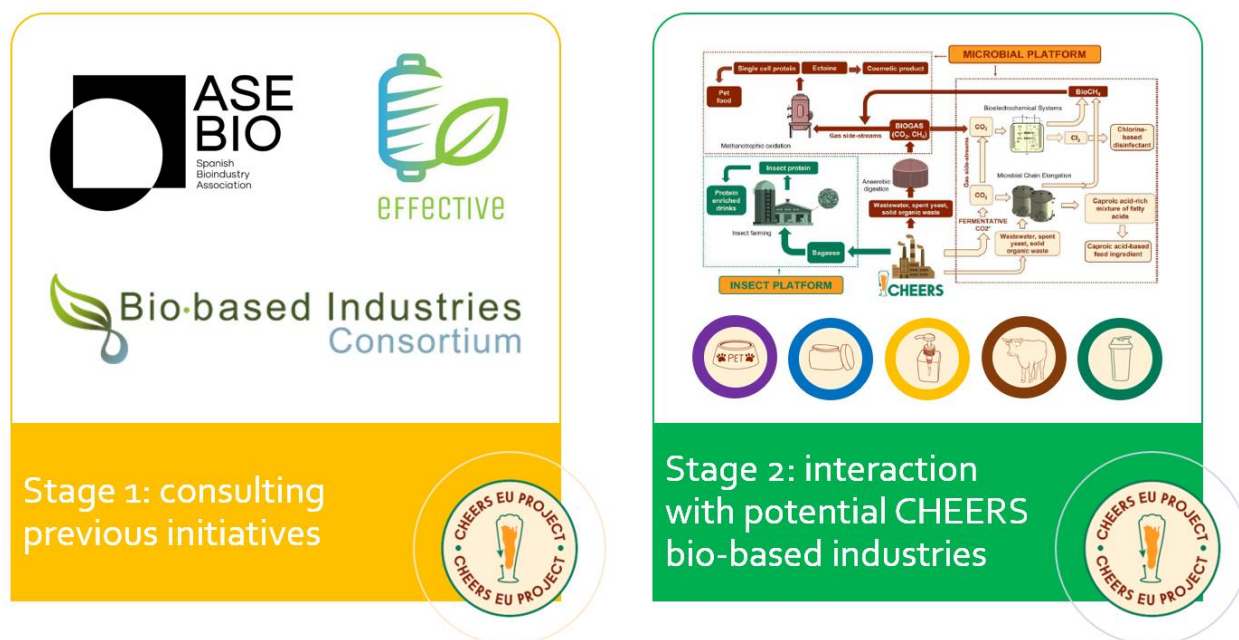


FIGURE 1: STAGES OF CHEERS BIO-BASED INDUSTRY ENGAGEMENT STRATEGY

The strategy will take a two-stage approach. The first stage will consult existing bio-based and side-stream valorisation initiatives similar to CHEERS, identified through the channels described in the dissemination and communication plan (D7.1). This will be done to ensure CHEERS learns from the experiences of previous actions, giving the greatest opportunity to achieve successful engagement with the industries targeted. The second stage is the interaction with potential CHEERS bio-based industries themselves. This will be done through a number of channels including several online and offline workshops, demonstrating the CHEERS processes and their potential. These events will be organised taking each CHEERS platform (insect and microbial) and associated downstream product into account, ensuring a wide representation of potential stakeholders are involved.

1.1 Context within the CHEERS project

This deliverable, and the associated task 7.3 that goes with it, aims to establish methods of engagement with bio-based industries that could benefit from CHEERS processes, platforms, and the resulting downstream products. In doing so, it will work closely with WP2 and 3 (Insect platform and Microbial platform respectively). This will be to not only identify suitable bio-based industries relevant to each platform and their associated stakeholders, but also to coordinate workshops demonstrating the platforms when technical development allows. In a similar approach, the participation of WP4 and WP5 (Integration and cascading processing and Bio-based product development and validation respectively) will be required to ensure industries representing the platform outputs (protein flour, caproic acid, hypochlorite, SCP, and ectoine) and the resulting products (protein-enriched drinks, animal feed, disinfectant, cosmetics, and pet food) are equally engaged. To inform

the engagement process, outcomes from WP1 (Side-streams mapping and optimisation according to circular economy needs) and WP6 (Environmental and economic impact and exploitation strategy) will be utilised to highlight the economic and environmental benefits of the CHEERS approach.

1.2 Context within WP7

This strategy is one specific part of the overall WP7 (Dissemination and communication) approach, targeting engagement with bio-based industries. As such, it will utilise the communication and dissemination channels outlined in task 7.1 (Dissemination and communication plan), specifically regarding the utilisation of both online and offline workshops demonstrating the CHEERS insect and microbial platforms. Through the use of specifically targeted dissemination (task 7.2) and communication activities and materials (task 7.5) it will identify and engage with relevant bio-based stakeholders. Stage 1 of the engagement strategy (Figure 1) will be informed by task 7.4 (Networking with related projects, initiatives and networks) in order to identify suitable existing bio-based initiatives and projects to learn from and consult. Finally, task 7.6 (Co-design of solutions for addressing environmental impacts) will be exploited to both garner the opinions of bio-based industry actors, and also to promote the potential benefits of the CHEERS approach.

2 Engagement strategy objectives, relevant WP7 tasks & deliverables

The main objectives of the CHEERS Engagement strategy to target bio-based industries (D7.2) are:

1. To consult with previous and existing bio-based initiatives, to learn strategy decisions that were successful, those that were not, and the conditions that existed around each. Through this process, to also establish any potential collaborative effort that could mutually benefit CHEERS and other initiatives.
2. To develop, based in-part on these learnings, a comprehensive engagement strategy targeted at bio-based industries. This will include providing effective tools, communication channels and collaborations with CHEERS partners developing outputs, bio-based industries, and their associated stakeholders.
3. To identify target bio-based audiences and stakeholders that can benefit from the results produced by the CHEERS project and maximise the potential impact of the products developed. To assist with T7.1 (dissemination and communication) in disseminating CHEERS results among bio-based users, fostering the development of new market opportunities.
4. Describe and iteratively review the specific actions that will support the engagement strategy, its target audiences, the associated target markets, and its KPIs.
5. The planning and execution of a series of demonstration workshops (online and offline), performed at CHEERS demonstration sites that show the effectiveness of the CHEERS bio-refinery concept to bio-based companies. Potential end-users of the platforms, products, and associated stakeholders will have the opportunity to feedback and discuss the market potential of the CHEERS actions.
6. Define strategies to increase the bio-based community reached during the implementation of the project, in order to achieve sustainable post-project exploitation. This will be done in conjunction with WP7 and WP6, by defining actions that contribute to the knowledge-based for shaping policy, supporting the sustainability of protein-based land crops, and considering the environmental impact of such actions across the European Research Area (ERA).

2.1 Relevant WP7 activities to the engagement strategy

Work package 7 (Dissemination and communication) has a number of activities related to engagement bio-based industries, as follows (table 1):

TABLE 1: RELEVANT WORK PACKAGE 7 ACTIVITIES

Task	Title	Coordination	Support	Target	Duration
7.2	Dissemination activities	AINIA	All partners	-	M13-M48
Action	Bio-based industry workshops	EARTHWATCH, AINIA	MAHOU SAN MIGUEL, PROTE, AQUALIA, GENIA, ZHAW	5 workshops (2 online and 3 offline at demo sites)	M22 onwards
Action	Industry events (trade shows and workshops)	AINIA	All partners	5 participations	M1-M48
7.3	Engagement with bio-based industries	EARTHWATCH	INNOVARUM, AINIA	-	M1-M48
Action	Engagement strategy targeting bio-based industries	EARTHWATCH	All partners	Reach 35 bio-based industries	Strategy due in M12
7.4	Networking with related projects, initiatives, and networks	INNOVARUM	All partners	-	M4-M48
Action	Shortlist of relevant EU projects and initiatives (Horizon Europe, H2020, BBI-JU, LIFE)	INNOVARUM	All partners	-	M4-M48
7.5	Communication activities	INNOVARUM	All partners	-	M4-M48
Action	Networking activities: become part of networks	INNOVARUM	All partners	5 networks	M4-M48
7.6	Co-design of solutions for addressing environmental impacts	EARTHWATCH	INNOVARUM, AINIA	-	M4-M48
Action	Regular co-design sessions with civil society, scientists, and decision makers	EARTHWATCH	INNOVARUM, AINIA	At least 4 involving each consumer product and CHEERS processes	M4-M48

2.2 Relevant WP7 deliverables & milestones

As explained in section 1.2, the engagement strategy will work in conjunction with all other tasks in WP7, and therefore will be informed and guided by a number of other deliverables. Relevant deliverables include:

Deliverable 7.1: Dissemination and Communication Plan (M6). This engagement strategy is in part an offshoot of D7.1, focussed on bio-based industries. As such it will rely on a number of the planned activities, communication channels and methodologies to engage relevant stakeholders.

Deliverable 7.2: Engagement strategy targeting bio-based industries (M12). This document.

Deliverable 7.3: Report on Dissemination and Communication actions – first version (M24). This deliverable is an update of D7.1 including updated information on dissemination and communication actions. It will include actions targeted at bio-based audiences and their stakeholders, and their impact.

Deliverable 7.4: Report on Dissemination and Communication actions – final version (M48). This deliverable is an update of D7.3 including updated information on dissemination and communication actions. It acts as a final report that will include an evaluation of successes and challenges when engaging bio-based audiences and stakeholders.

Milestone number 1: Project website launched (M6). CHEERS website launched and live – an obviously key communication tool.

Milestone number 6: Engagement of biomass producers and end-users (M35). Reach 20 potential customers of CHEERS Ltd. under the supervision of the WP leader and the Ethics Advisory Board.

3 Collaboration with previous initiatives

In this section stage 1 of the engagement strategy will be outlined – the collaboration with previous bio-based initiatives. As aforementioned the CHEERS project is not the first or only initiative to implement the use of insects and microbes for the valorisation of bio-based industrial side-streams. This interest has in no small part been fuelled by the EU declaring the bio-based products sector to be a priority area (European Commission, 2017), and formulating an accompanying bio-economy strategy and action plan (European Commission, 2018) aimed at shifting the EU towards a greater and more sustainable use of renewable resources. As such, this first stage of the strategy should be seen as a scoping activity, evaluating the current landscape in regards to bio-based methodologies, products, and research.

The strategy will take a two-pronged approach to collaborating with existing initiatives, relating to other activities of WP7:

- **BIO-BASED INDUSTRY NETWORKS AND ALLIANCES.** Through the activities of T7.5, CHEERS will engage with and consult existing bio-based networks, such as Circular Bio-Based Europe (Circular Bio-based Europe, 2023) and the Bio-Based Industries Consortium (Bio-Based Industries Consortium, 2023). The main objective of this approach is to position CHEERS at the forefront of the bio-based industry research discipline, benefiting from the knowledge and expertise that exists and potential directions going forward.
- **SPECIFIC EU PROJECTS AND INITIATIVES.** Through the activities of T7.4, CHEERS will also engage with, where willing, specific EU projects relating to bio-based solutions and side-stream valorisation, such as BARBARA (Biopolymers with advanced functionalities for building and automotive parts processed through additive manufacturing, 2020), EFFECTIVE (Advanced Eco-designed Fibres and Films for large consumer products from biobased polyamides and polyesters in a circular Economy perspective, 2023). And BeonNAT (Innovative value chains from tree & shrub species grown in marginal lands as a

source of biomass for bio-based industries, 2020). Through this approach, CHEERS will benefit from direct knowledge of engaging with a bio-based audience, and the issues that arise, by talking to actors who have practical, real world experience of the process.

Regarding both groups, in addition to general networking opportunities and the communication channels set out in T7.5, a specifically-designed survey will be disseminated to capture information about previous and existing bio-based engagement activities (M24). Surveys can be an effective way of collecting data needed for research and evaluation. However, the method is often misdirected and poorly designed (Diem, 2002). Therefore, the challenge is to design a survey that accomplishes its purpose. To help ensure the CHEERS engagement survey achieves its objectives, the design will be guided by previous evaluation survey approaches with similar objectives (see appendix 7.1 as an example).

The aim of the survey is to gather information on previous and existing projects' best-practice and challenges when planning, developing, tracking, and implementing bio-based audience engagement activities. The results forthcoming will be analysed and aggregated into guidance to inform CHEERS bio-based engagement activities, to ensure all previous lessons are learnt from giving the greatest starting position to ensure success. Furthermore, the results and conclusions drawn will be disseminated to the bio-based networks identified as part of T7.5. This will assist with positioning CHEERS as an important part of the discipline, and foster collaboration and reflection between different bio-based initiatives.

4 Interaction with potential CHEERS bio-based industry end-users

The second stage of the strategy involves the engagement of bio-based industries who in effect are the potential end-users of CHEERS products and outputs and future customers of CHEERS Ltd., the company that will be created for the exploitation of the consortium results. This includes both the processes and outputs of the insect and microbial platforms (WP2 and 3), and of the downstream products themselves (WP4 and 5). Potential target industries will be identified both through industry events (T7.2) and through the connections forged during stage 1 of the strategy with networks and existing bio-based projects. Interactions with the industries targeted will predominantly take place through the industry workshops of T7.2, both online and offline, and be supplemented by communication through the actions of T7.5. The engagement of bio-based industries will be an iterative process over the length of the CHEERS project, with feedback from the environmental and economic evaluations of WP6 and outcomes of co-design sessions of T7.6 regularly communicated to and discussed with potential end-users.

4.1 Marketing and dissemination

The overarching strategic marketing and dissemination objective of CHEERS is to communicate, to each of the target audiences, the benefits of integrating CHEERS bio-refinery processes into the production chains of bio-based industries. Through this process, it will highlight the potential economic and environmental benefits of CHEERS products, produced by the upgrading of underused or waste side-streams.

Commercial interest in CHEERS bio-refinery processes and outcomes is expected to be strongest in the food & beverage and brewing industries, which produce large amounts of bagasse, CO₂ and CH₄. Additionally, the commercial bio-based products created by CHEERS will be of interest to existing companies in the insect protein-rich drinks, caproic acid-based animal feed, hypochlorite-based disinfectants, SCP pet food and

ectoine-based cosmetics sectors, since the project provides new sustainable sources of raw materials. CHEERS outcomes also have the potential to create new revenue streams and business opportunities for bio-based companies, offering tailored solutions to circularise side-streams and biogenic carbon emissions into high value products – which will ultimately contribute to skilled job creation and economic benefits.

Due to this varied potential interest in CHEERS actions, marketing (specifically aimed at bio-based industries) is a key objective, defined as *activities used to create brand recognition and awareness of an organisation, service or product*. In the case of CHEERS, it is a combination of all three: the visibility of CHEERS as an initiative in bio-based networks, the integration of CHEERS bio-refinery processes into production chains, and the promotion of CHEERS downstream products in terms of their economic and environmental potential.

An overview of the various actions CHEERS will use to raise awareness and dissemination information about CHEERS platforms and products across bio-based audiences is detailed below, and addresses four main goals:

- To raise **awareness** of the CHEERS project
- To generate an **understanding** of the results of the CHEERS project: the bio-refinery process, platforms and upgraded side-stream products
- To **trigger** the exploitation of the results obtained in CHEERS
- To **communicate** commercial opportunities to prospective bio-based industry end-users

These four goals will be achieved through the objectives and associated actions listed in Table 2 below, targeting specific actions to specific bio-based stakeholders.

TABLE 2: MARKETING OBJECTIVES AND ASSOCIATED DISSEMINATION ACTIONS

Goal 1. To raise awareness of the CHEERS project	
<i>Objective 1.1 Showcase project and raise awareness of existing activities</i>	
Target Stakeholder	Actions
All bio-based audiences; key stakeholders identified through networking activities (T7.4) and bio-based industry events (T7.2). For all actions shown, dissemination materials should be picked up by targeted umbrella organisations (bio-based networks), and contacts through project partners and the advisory board.	<ul style="list-style-type: none"> • CHEERS solutions shown on project/partner websites • Raise awareness on social media channels • Flyers and materials for trade events • Update bio-based audiences via newsletters • Take part in bio-based network events on online workshops
Goal 2. To generate an understanding of the results of the CHEERS project	
<i>Objective 2.1 Increase awareness of the benefits of CHEERS processes, platforms and products</i>	
Target Stakeholder	Actions
Primary bio-based end-users of CHEERS outcomes, including food & beverage and brewing industries, and SMEs related to bio-based products and solid waste and biogenic carbon solutions.	<ul style="list-style-type: none"> • CHEERS solutions on project/partner websites • Social media presence focusing on benefits • Industry website/magazine articles (solution specific) • Bio-based industry workshops (online & offline) • Dissemination of economic and environmental CHEERS assessments (WP1 and WP6)
<i>Objective 2.2 Generate trust in the data obtained by CHEERS processes, platforms and products</i>	
Target Stakeholder	Actions
Information consumers including related Horizon Europe projects, bio-based networks, industrial	<ul style="list-style-type: none"> • Publish peer-reviewed articles • Attend international conferences and industry events

regulatory bodies, and the international scientific community.	<ul style="list-style-type: none"> • Publish deliverable reports • Demonstrations at CHEERS demo-sites • Patent and IP rights applications
Goal 3. To trigger action based on the results obtained by CHEERS	
<i>Objective 3.1 Promote the use of CHEERS processes, platforms and products</i>	
Target Stakeholder	Actions
Primary bio-based end-users of CHEERS outcomes, including food & beverage and brewing industries, and SMEs related to bio-based products and solid waste and biogenic carbon solutions.	<ul style="list-style-type: none"> • Maintain support through website feedback and bio-based network events • Maintain social media presence • Industry website/magazine articles (solution specific) • Bio-based user endorsements • Bio-based industry workshops (online & offline) • Promotion of CHEERS Ltd.
Bio-based product consumers, including public audiences, retailers, and all stakeholders involved in the value-chain.	<ul style="list-style-type: none"> • Maintain social media presence • CHEERS solutions shown on project/partner websites • Co-design workshops (T7.6) with two-way communication regarding needs, expectations and requirements • Promotion of CHEERS Ltd.
Goal 4. To communicate commercial opportunities to prospective bio-based industry end-users	
<i>Objective 4.1 Promote European and wider market uptake</i>	
Target Stakeholder	Actions
Information consumers including related Horizon Europe projects, bio-based networks, industrial regulatory bodies, and the international scientific community. All public audiences, retailers, and all stakeholders involved in the value-chain. Umbrella organisations related to bio-based activities. European and national funding organisations and policy makers.	<ul style="list-style-type: none"> • CHEERS website • Presenting at plenaries and industry events • Infographics and marketing from demo-sites • Reports and publications on bio-based industry workshops • Reports and publications on co-design workshops • Bio-based industry endorsements and testimonies • Promotion of CHEERS Ltd.

The objectives and associated actions listed in Table 2 is not by any means an exhaustive list, but represents the most critical related to the CHEERS engagement approach. Likewise, the links between them could also be fluid, with actions having an influence in ways not predicted, as opportunities arise during the duration of the project.

4.2 Identifying potential bio-based industries to engage through CHEERS actions

As described in the previous section, the main channels for identifying suitable bio-based industry actors to engage with through CHEERS actions are: (i) industry events (T7.2), such as the World Sustainability Congress 2023; (ii) systematic searches through existing market reports and patent databases (T7.3); and (iii) through communication with established bio-based networks, projects and organisations (T7.5).

In addition to this broader approach, the engagement strategy will also exploit the internal knowledge and connections of CHEERS project partners. Specifically targeting partners with responsibility over CHEERS bio-refinery processes, platforms, and the downstream products produced, a survey will be disseminated to identify the key exploitable results from each work package (see appendix 7.2). Led as part of T7.1 (Dissemination and Communication) by AINIA, the survey will not only identify important exploitable outcomes and dissemination channels, but will also draw together all existing, relevant bio-based contacts cultivated by CHEERS partners.

4.3 Bio-based industry workshops to demonstrate CHEERS bio-refinery processes

Potentially the most direct, intimate form of engagement with bio-based industries will be through the orchestration of several workshops designed to demonstrate CHEERS bio-refinery processes, platforms and the downstream products that result. They will also highlight the potential benefits, both economically and environmentally, of CHEERS actions through publicising the results of the assessments created in WP1 (Side-streams mapping and optimisation according to circular economy needs) and WP6 (Environmental and economic impact and exploitation strategy).

Starting from M22 onwards, the workshops will be both offline, held on-site at the CHEERS demonstration plant in Lleida, Spain (MAHOU), and online allowing remote participation. This approach will ensure that the demonstrations to bio-based audiences are as interactive as possible, whilst also achieving broad, inclusive participation of potential market players. The focus of the offline and online workshops will vary in conjunction with the advantages conveyed by each, as follows.

4.3.1 Offline industry workshops at demonstration sites in Spain

The demonstration plants managed by MAHOU, in Lleida and Allovera (Guadalajara), Spain, will be home to the demonstration processes, linked to each of the CHEERS platforms (insect and microbial) – see figure 2 below. As such, three workshops will be held, one each focusing on the insect platform, and two focussing on the microbial platform.

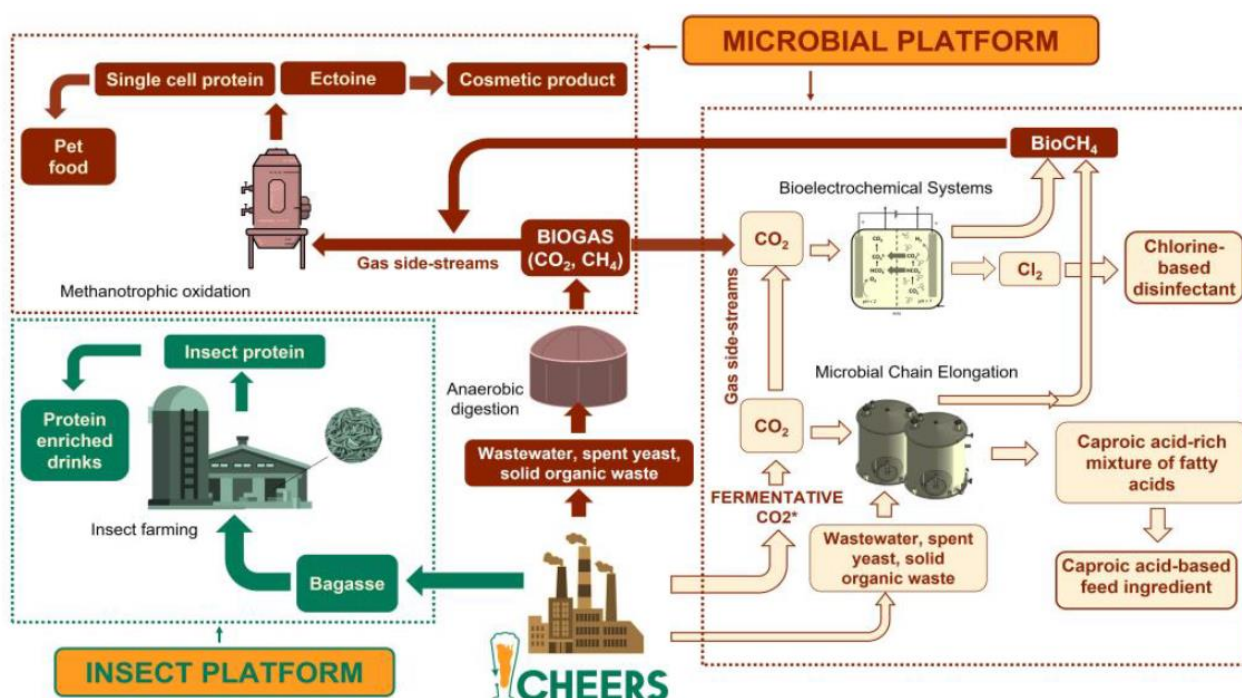


FIGURE 2: GLOBAL SCHEME OF CHEERS APPROACH FOR BREWERY SIDE-STREAMS VALORISATION

- **INDUSTRY WORKSHOP FOCUSED ON INSECT PLATFORM:** The first offline workshop will concentrate on the processes and products of the insect platform. It is envisaged that this demonstration setup will be completed earliest, and closest to M22 – and so this workshop will take place first. The format of the demonstration will be designed in conjunction with WP2, led by PROTE, to ensure all key features, design considerations and logistical issues are explained thoroughly. Participants from bio-based industries that produce the appropriate side streams (Bagasse), consumers of platform outputs (insect protein), and potential buyers (including civil society) of upgraded products (protein-enriched energy drinks) will be invited to take part.
- **INDUSTRY WORKSHOPS FOCUSED ON MICROBIAL PLATFORM:** The remaining offline workshops will consider the processes and products of the microbial platform. The estimation for completion of this demonstration setup is approximately 12 months after the insect platform, with the workshop being held within 3 months of its completion (~M36). The format of the demonstration will again be designed in conjunction with the platform lead (WP3, AQUALIA), to ensure all key design elements are thoroughly explained. Likewise, participant recruitment will focus on bio-based representatives from industries that produce the requisite side products (CO₂, CH₄ and wastewater), consumers of platform outputs (SCP, ectoine, caproic acid, and hypochlorite), and potential buyers of upgraded products (cosmetics, pet food, animal feed and disinfectant).

4.3.2 Online industry workshops

In parallel with the offline workshops held at the CHEERS demonstration plant, two online versions will also take place in the final half of the project (M24-M48). The asynchronous, remotely-accessible format of these workshops allows the focus of them to be shifted from the demonstration platforms available to other, wider market considerations. As such, the online workshops will attempt to have significant representation based on the following factors:

- **NATIONAL, CULTURAL AND POLITICAL:** Whilst understandably the offline workshops will have a strong focus on the Spanish brewing sector, the three online versions will attempt to represent other major markets across the ERA (for instance Germany, Poland and UK), that have similar, large brewing sectors. This representation will include considering different cultural aspects related to brewing and food & beverage processes, as well as different political and regulatory considerations.
- **WIDER STAKEHOLDER INCLUSION:** Whilst the offline workshops will focus on direct, bio-based industry representation, the online versions allow a broader stakeholder involvement. As such, participation will attempt to include not only representatives of the industries involved, but also from all sectors of their value-chain, including potential retailers and end-users (customers) of the upgraded products themselves.
- **RELATED COMMUNITIES AND DECISION-MAKERS:** Attempts will be made to also include communities associated with and effected by large-scale brewing and food & beverage industry actions. Such groups could include those concerned with environmental aspects and also related governmental and utilities-based decision-makers. There is potential to recruit such participants from the coinciding co-design efforts of T7.6 (as explained in the next section).

4.4 Co-design sessions for addressing environmental impacts

Whilst not a direct action of the engagement strategy for bio-based industries, T7.6 (Co-design of solutions for addressing environmental impacts) will include co-design sessions that could have important synergies with engagement actions, and help inform communication with bio-based industry actors. This in turn can aid the exploitation of CHEERS products and actions, and increase the marketability of CHEERS Ltd. Designed around each of the 5 CHEERS products, but including broad discussions on CHEERS processes and approaches, they will include a number of different potential stakeholders, the opinions of which could prove very important

when considering the marketability of CHEERS' exploitable results. In addition, the co-design sessions will take place regularly across the duration of the project, allowing for an iterative approach when informing engagement strategy approaches. The stakeholders that will participate and their potential in informing engagement with bio-based industries are as follows:

- **CIVIL SOCIETY:** This is a catch-all term for the public, both those communities that are directly affected by brewing and food & beverage industries, and those that are the potential end-users of the CHEERS products created. As mentioned in the previous section, their needs, expectations and requirements could be pivotal when engaging potential bio-based markets regarding the benefits of the CHEERS approach.
- **SCIENTISTS:** The academic community and their associated networks could play a key role in disseminating the benefits of CHEERS actions to the bio-based sector. This does not just include those working at institutions, but also scientists and researchers embedded in bio-based industries directly. Also, the term scientist is used broadly, to include experts in social science, consumer behaviour, environmental impact and the circular economy. Through spreading knowledge of CHEERS actions across academic networks and events with trade involvement, the scientific community can assist with increasing the visibility of CHEERS across a number of different sectors. Also, by being part of the co-design process when evaluating the environmental impact of CHEERS results, the scientists involved can act as validators of the assessments produced and shared, and therefore becoming endorsers of the process.
- **DECISION-MAKERS:** The opinions of regulatory bodies associated with environmental issues, industrial processes and even broader aspects such as community services and procurement could be exploited to direct CHEERS engagement actions. By listening to decision-makers concerns, CHEERS can be positioned both as an ally regarding community environmental and socio-economical concerns, and as a sustainable choice when making procurement decisions.

4.5 Creating a catalogue of bio-based industry contacts

To ensure the sustainability of CHEERS engagement actions beyond the duration of the project, and to support the exploitation of results beyond the project duration, a catalogue of bio-based contacts will be created. Managed by EARTHWATCH with support from WP7 (AINIA and INNOVARUM), the catalogue will be hosted on the CHEERS shared-space (SharePoint), allowing all partners of the CHEERS consortium to access the catalogue and make additions and amendments when needed.

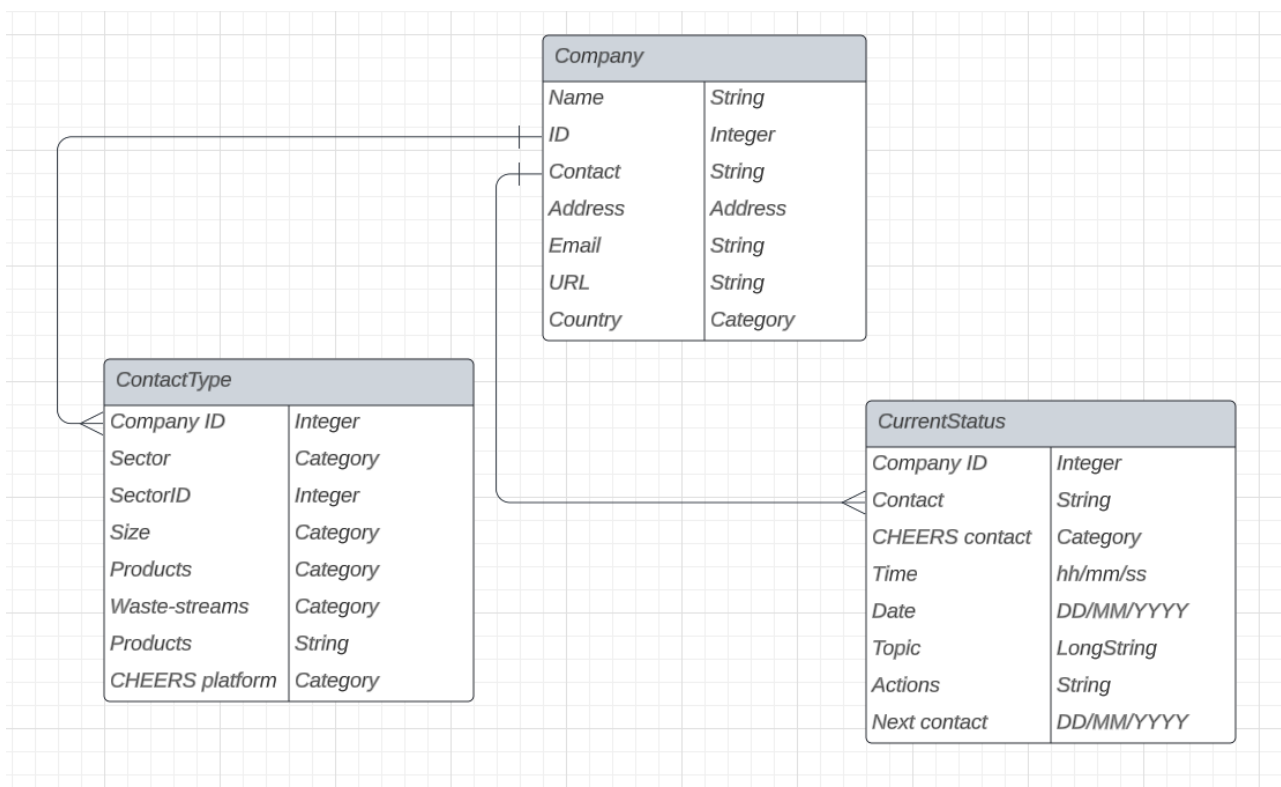


FIGURE 3: CHEERS CATALOGUE DESIGN FOR BIO-BASED INDUSTRY CONTACTS

The design of the catalogue will follow a basic database design, as shown in Figure 3, and will consist of three main areas as follows:

- **CONTACT DETAILS:** As the name suggests, this section of the catalogue will contain general information about the industry, from its name and address, to contact details (postal, email, URLs, contact persons) and the country/region that they belong to. Whilst simple, in many ways it is the most important section to update, as it provides the main communication channel for any potential engagement.
- **CONTACT TYPE:** This section will contain information that attempts to group each industry contact, enabling the catalogue to be sorted or queried towards specific CHEERS engagement aims. Information such as their commercial/industrial sector, size, potential consumer base, products, waste-streams, and supply needs will help CHEERS engagement actions align them with specific, relevant CHEERS solutions and benefits.
- **CURRENT STATUS:** This section acts as a living progress report on the relationship CHEERS has built or is currently building with the contact. It will contain logistical information like the time and date of last contact, who with and who by from the consortium, and more descriptive fields regarding the nature of the communication and the specific area of CHEERS activity involved. This section could also include observations regarding consumer behaviour, customer loyalty and perspective market if such estimations are possible.

5 Conclusions

The CHEERS project focuses on technological innovation to increase the resource efficiency of bio-based industries, by demonstrating that unused or underused side-streams can be transformed into high added-value products for industrial applications. The project aims to show, inter alia, that novel, bio-based transformation platforms can bring considerable benefits towards European industrial sustainability,

competitiveness, and resource independence, by lowering environmental footprint, enabling climate-neutrality, and achieving higher resource efficiency.

Ultimately, this will be of interest to a broad variety of industrial, (inter)national, and public stakeholders. Therefore, in conjunction with the two on-site demonstrations of CHEERS bio-refinery processes, a growing bio-based industry network involving a range of sectors and stakeholders will be cultivated by CHEERS engagement actions. Through this network, dissemination of project progress towards its sustainability goals (lowered costs, wider uptake, and improved integration) will take place through a marketing strategy that targets a 'first wave' of early adopters to CHEERS methodologies, using their experiences and testimonies to encourage wider uptake of CHEERS bio-refinery processes and knowledge of its benefits. These actions will set the path for the exploitation of project results, by improving the marketability of the products and services, building a potential customer database, and triggering the first marketing actions of CHEERS Ltd.

A two-stage approach will be taken in implementing the CHEERS engagement strategy to target bio-based industries, as follows (timings are approximate):

STAGE 1 – CONSULTING PREVIOUS INITIATIVES (M1-M24)

- Identification of bio-based networks and projects to collaborate with (M1-M18)
- Identification of suitable trade shows and events to engage bio-based industries (M1-M18)
- Participation in network activities to raise CHEERS profile (M12 onwards)
- Dissemination of bio-based industry evaluation survey to relevant agents (M18)
- Dissemination of key exploitable results survey in conjunction with T8.4 (M18)
- Analysis and aggregation of survey results to inform and guide CHEERS engagement actions (M24)

Additional communication actions to generate initial interest:

- CHEERS bio-refinery processes, platforms and product descriptions on project website (M6)
- Digital and social media (throughout project)
- Project blogs and newsletters (throughout project)

STAGE 2 – INTERACTION WITH POTENTIAL CHEERS BIO-BASED INDUSTRIES (M22-M48)

- Industry workshop focused on insect platform (M22 – invites to be disseminated a month beforehand)
- Industry workshop focused on microbial platform (M36 – invites to be disseminated a month beforehand)
- Online industry workshops (M24-M48, approximately 8 months apart)
- Co-design session outcomes (T7.6) iteratively used to inform engagement strategy (M24-M48)
- Attendance at relevant trade shows and events (minimum of 5) as part of T7.2 (M24-M48)
- Development and maintenance of bio-based industry catalogue (M24 onwards)
- Reports and peer-reviewed publications on the engagement actions and their outcomes (M40-M48)

6 Bibliography

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7 Appendices

7.1 Example evaluation survey

An example evaluation survey taken from Swansea University, which will be used to guide the design of the CHEERS engagement survey (see section 3).

<https://www.swansea.ac.uk/media/Post%20Project%20Review%20Template.doc>

xxxxxx Project

Post Project Review

The attached questionnaire is to be completed as part of the Project Close procedure by ALL individuals involved with the project. It should be noted that this is **not** designed to lay the blame for any shortfalls at any individuals door but is to document the strengths and weaknesses encountered by the project team so that the lessons learnt can be carried forward to other projects and to feed back into the overall continuous improvement process.

The questionnaire will be collated by an independent facilitator and will form the basis of discussion at a Post Project Review meeting provisionally scheduled for xx October,2000, at which you MAY be expected to attend. Specific details will be issued week commencing xx October 2000. The review meeting will debate the strengths and weaknesses resulting from the questionnaires, document recommendations and any follow up actions required, the review meeting is **not** where an individual's performance is criticised. Following the review a post project report will be produced, which will formally document the findings.

The questionnaire starts with a general question about the success of the project as a whole, the following sections cover various areas of the project process under two headings - What went well? And what could have been done better?



Comments should be noted in the relevant column on each sheet. There are a number of prompts at the head of each section however, it should be noted that these are intended as an aide-memoir only. Comments are not restricted purely to those areas covered by the prompts and similarly it is not necessary to raise a comment in answer to any prompt that is not relevant. Please ensure that any points raised are specific e.g. "communication was poor as a result of the test manager being located at a remote location" rather than "communication".

PLEASE INDICATE **YOUR TOP THREE THINGS YOU FEEL WERE DONE WELL** in "WHAT WENT WELL?" and **YOUR TOP THREE ISSUES** in "WHAT COULD HAVE BEEN DONE BETTER?" and in "RECOMMENDATIONS" what actions you would take to address these issues. It is noted that some of you will not have been part of the project team for full duration of the project and therefore may not be able to contribute to all of the sections. Please mark these sections as "Not Applicable".

It is requested that the person completing the questionnaire provides the details requested below. This allows any comments which are not fully understood to be clarified, as part of the collation process, as well as providing a checklist of which questionnaires have been received and which are outstanding for the review. **Please note that for the collation of comments and for the Report of the Review, no comments will be attributed to any individual.**

Please could you complete this questionnaire and return to 'E-mail address'. These should have been received by him no later than **xx**. ANO can be contacted on phone number xxxxxxx.

Name:

Department:

Role:

(On reviewed project)

Overall, how successful was the project in engaging relevant end-users? (Rated 1-10 from complete failure to outstanding success).	
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Brief description of why the project was / was not successful.
--

ORGANISATION

<p>Consider the following:</p> <p>Did the overall organisation structure work?</p> <p>Balance of resources from key areas?</p> <p>The organisational structure and hierarchy of the team (as a separate unit & as part of the overall organisation)</p>	
WHAT WENT WELL?	WHAT COULD HAVE BEEN DONE BETTER?
<p>Recommendations:</p>	

<p>PLANNING & TRACKING OF ENGAGEMENT ACTIVITIES</p>
<p>Consider the following:</p> <p>Changes to the scope - how were they controlled and communicated?</p> <p>Requirements - were any dates or methods imposed? What was the impact?</p> <p>Responsibilities - were they clearly defined?</p> <p>Planning - did the schedules include activities for all areas?</p> <p>Were key deliverables/milestones clearly defined?</p> <p>Control - was there sufficient control/tracking information? How was progress monitored / communicated?</p> <p>Was a Risk/Issue Management process applied adequately?</p> <p>Dependencies with other projects/areas?</p>

WHAT WENT WELL?	WHAT COULD HAVE BEEN DONE BETTER?
<p>Recommendations:</p>	

ENGAGEMENT DEVELOPMENT PROCESS	
<p>Consider the following:</p> <p>The key stages that had to be followed (definition, requirements, design, technical design and development, testing, implementation)</p> <p>Methods Used</p> <p>Definition of stage objectives & the practicality of achieving these</p> <p>Benefits/ problems encountered by following this process</p>	
WHAT WENT WELL?	WHAT COULD HAVE BEEN DONE BETTER?

<p>Recommendations :</p>	

<p>QUALITY PROCESS</p>	
<p>Consider the following:</p> <p>Checks/ controls used during requirements, design, coding, testing and implementation of bio-based engagement activities</p> <p>Meeting of testing requirements (as defined in test plans)</p>	
<p>WHAT WENT WELL?</p>	<p>WHAT COULD HAVE BEEN DONE BETTER?</p>

<p>Recommendations :</p>	

<p>IMPLEMENTATION OF BIO-BASED INDUSTRY ENGAGEMENT ACTIVITIES</p>	
<p>Consider the following:</p> <p>Was an implementation plan produced and communicated to all relevant parties?</p> <p>Was the Release to Production Process clear?</p> <p>External support during this period?</p>	
<p>WHAT WENT WELL?</p>	<p>WHAT COULD HAVE BEEN DONE BETTER?</p>
<p>Recommendations :</p>	

**DOCUMENTATION & TRAINING FOR ENGAGEMENT
ACTIVITIES****Consider the following:**

Was documentation produced, in the right format, with correct content and distributed by the right people at the right time (e.g. test strategy, progress reports, test plans)?

Did it involve the right people?

Were training requirements satisfactorily planned and dealt with?

WHAT WENT WELL?**WHAT COULD HAVE BEEN DONE BETTER?**

WHAT WENT WELL?	WHAT COULD HAVE BEEN DONE BETTER?

Recommendations :

DEVELOPMENT & TEST ENVIRONMENTS & TOOL SUPPORT AT DEMONSTRATION SITES	
Consider the following: Stability of environment /problems encountered Feedback from support areas Support for any tools adequate?	
WHAT WENT WELL?	WHAT COULD HAVE BEEN DONE BETTER?
Recommendations :	

11. ADDITIONAL RECOMMENDATIONS, ACTIONS OR LESSONS LEARNT

7.2 Key exploitable results survey to be sent to CHEERS project partners

Key Exploitable Results update form (M12)

The purpose of the present form is the early identification of the knowledge generated during of the project. The identification of project's Key Exploitable Results (KERs) constitutes the corner stone for the implementation of best-fit protection, exploitation and dissemination strategies of the IP generated during the project (foreground).

Table 1 includes the first list of expected exploitable results included in the *Description of Action*. During project execution, this list will be regularly updated according to the latest technical progress.

Table 3 Preliminary list of expected exploitable results.

Result	Description	Contributors
R1	Insect farming using bagasse in the diet, transformation of the insects in protein	PROTE/THUNDER, AINIA
R2	BES technology and optimal operating parameters (Cl ₂ disinfectant)	AQUA
R3	CO ₂ elongation and optimal operating parameters for caproic acid production	GEN, AINIA
R4	Biofermentor design for improved gas-liquid transfer (for SCP from CH ₄) and optimal process parameters	SYS, AINIA
R5	Taylor flow biofermentor design for CH ₄ fermentation to produce ectoine	UVA, SYS, AQUA
R6	Process parameters for ectoine production	UVA
R7	DSP technology and process parameters	UVA, AINIA, GEN
R8	Brewery side-streams best management and pre-treatment for biorefinery model	MAHOU

1. Title of the result

Table 1 presents the preliminary list of exploitable results expected from CHEERS. Please use it as a reference to express your vision of the expected results from the project. Feel free to rewrite the title of the results in your own words or add new results that were not initially foreseen. Please do this only for the results in which development you consider you will be involved.

NOTE: Titles should reflect the nature of the result so please use terms such as: procedure, method, synthesis, formulation, model, design, software, platform, dataset, pre-standard, policy recommendations ...

Result n1: *alternative title*

New result n: *proposed title*

2. Short description

Please provide a short description of your results. There is no need to disclose details that you consider confidential.

NOTE: For those results that involve the contribution of several partners, a consolidated version of the result description will be constructed with the descriptions provided from each one of them and then confirmed by all the partners involved in the development.

Result n1: *title*

Short description

Result n2: *title*

Short description

3. Differentiation against the State of the Art (SoA)

Please tell us what the main features of the above-mentioned results that can be considered Unique Selling Points or competitive advantages compared with already existing SoA or solutions/tools that are already known or can be found in the market or (if any).

Result n1: *distinctive features*

Result n2: *distinctive features*

4. Partner's contributions

Please indicate if you are working on the tasks that potentially will give rise to the results mentioned above on your own, or the contrary, you are co-developing them with other partners.

NOTE: this will determine who owns the result and, by the end of the project, who has the right to exploit the result(s).

Result n1 developed (choose: on my own/ in collaboration)

If you have chosen in collaboration, please indicate the contribution of the different partners:

Partner x: *contribution*

Partner xx: *contribution*

Result n2 developed (choose: on my own/ in collaboration)

If you have chosen in collaboration, please indicate the contribution of the different partners:

Partner x: *contribution*

Partner xx: *contribution*

5. Background

Please indicate any **pre-existing knowledge** that you bring to the project and that is needed for the development of the result (e.g. know-how on a technical field, expertise on the handling of equipment, datasets, software, ...) and IP rights that may be attached to it (e.g. patents, registered designs, copyright, ...).

NOTE: please provide any reference to public documents that support your background knowledge (e.g. scientific publications, patent numbers...)

Result n1: *background you provide*

Result n2: *background you provide*

Besides, indicate if there is any **third-party IP** (from non-consortium members) that may be needed for the development of the result (e.g. software, datasets, published patents or standard procedures...)

Result n1: *third-party IP needed*

Result n2: *third-party IP needed*

6. Application sector and stakeholders

Please name any industrial or commercial sectors which can be considered potential **customer segments**.

NOTE: Include those sectors already targeted by CHEERS (e.g. cosmetics, animal feed, disinfectants, pet food, protein enriched drinks, bio-refinery, waste-water treatment) but also other sectors or market segments out of the initial scope of the project.

Result n1: *customer segments*

Result n2: *customer segments*

Add a list of **stakeholders** relevant for the market adoption of your result (*breweries, supermarkets, farms, research centres, certification bodies, associations, media etc.*)

Result n1: *stakeholders*

Result n2: *stakeholders*

7. Dissemination targets

Please select the target dissemination groups per result by highlighting them among those listed below (copy and paste as many times as the number of expected results).

NOTE: Please think about potential end-users and stakeholders that may be interested in the exploitation of your result after the project end.

Dissemination targets for result n1

Scientific Community (Higher Education, Research)

Industry players

Civil Society/ General Public

Policy Makers/ Public authorities

Media

Investors

Customers/ End-users

Other (please specify)

Dissemination targets for result n2

Scientific Community (Higher Education, Research)

Industry players

Civil Society/ General Public

Policy Makers/ Public authorities

Media

Investors

Customers/ End-users

Other (please specify)

8. IP protection strategy

Please, select your preferred pathways to protect the result you contribute to by highlighting them among the list below (copy and paste as many times as you need for the number of expected results). You can select multiple choices.

NOTE: this is tentative, you would be able to change your preferences as the project advances.

Preferred IP protection tools for result n1

Patent	Utility model
Trademark	Copyright
Industrial or trade secret	Industrial design
Registered database	Open (no protection)

Preferred IP protection tools for result n2

Patent	Utility model
Trademark	Copyright
Industrial or trade secret	Industrial design
Registered database	Open (no protection)

9. Restrictions

Please indicate if you would like to keep your results secret or restrict the access rights of other members of the consortium to them. In that case, you should specify the consortium partners who you would like to restrict the access to your results and the reasons why.

REMEMBER: Each project partner has the right to request access rights to the other project partners' background and results as long as it needs them in order to carry out its work under the project or to exploit its own results. Also, sensitive Deliverables will be shared with all project beneficiaries unless stated otherwise.

Result n1

Keep secret from: partner x, partner xx

Reasons:



CHEERS

**Producing novel non-plant biomass feedstocks
and bio-based products through upcycling and
the cascading use of brewery side-streams**

Grant Agreement No. 101060814.



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