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2. Mikrobiologicky Ustav AV CR V.V.I (IMIC)
3. Forfarmers Corporate Services BV (FF)
4. Instituto de Biologia Experimental e Tecnológica (IBET)
5. International Flavors and Fragrances IFF (Nederland) BV (IFF)
6. Laboratorio Nacional de Energia e Geologia I.P. (LNEG)
7. Phycom BV (PHY)
8. Upfield Research and Development B.V. (UPF)

MULTI-STR3AM

A sustainable multi-strain, multi-method, multi-product microalgae biorefinery integrating industrial side streams to create high-value products for food, feed and fragrance

BBI-2019-SO1-D2 - Produce components for various materials, including for food and feed, from microalgae

Collaborative project

Start date of the project: 01/05/2020

Duration: 48 months

Deliverable 7.2

Quality and risk management plan

WP	7	<i>Project Management</i>
Task	7.2	<i>Scientific coordination</i>

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Contributing beneficiaries	<i>All partners</i>

¹ Dissemination level: **PU** = Public, **CO** = Confidential, only for members of the consortium (including the BBI), **CI** = Classified, information as referred to in Commission Decision 2001/844/EC.

² Nature of the deliverable: **R**: Document, report (excluding the periodic and final reports) , **DEM**: Demonstrator, pilot, prototype, plan designs, **DEC**: Websites, patents filing, press & media actions, videos, etc., **OTHER**: Software, technical diagram, etc.

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Deliverable abstract

This deliverable is part of the Project Management Work Package (WP) and is linked to Task 7.2 on Scientific Coordination. It is due in M6 and will serve as the document to guide quality assessment between the partners as well as involvement of the Advisory Board.

The main elements of this deliverable include a “risk register” template, which will be continuously updated by the PMO and Steering Committee (SC), as well as a presentation of the control mechanisms at the consortium level to guarantee quality of work delivery and sound risk management.

Given the new reality of the pandemic, a “COVID-19 internal operational impact” template was also created to follow-up how the measures of distancing needed to prevent the spread of the virus may impact laboratory and industrial facilities activities, causing delay on tasks and deliveries. The aim of this log template is to document day a day all partners situation and foresee any action that might mitigate possible negative impacts.

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1 Background

This deliverable is developed as part of the MULTI-STR3AM project, which received funding from the Bio-Based Industries Joint Undertaking program. The Quality and Risk Management Plan corresponds to the deliverable D7.2 in WP7 on Project Management. The overall aim of this WP is to *“ensure efficient management of the project incl. a high quality of results by coordination, exploitation of synergies between WPs, and alignment of the different activities. This includes: Enabling participative, collaborative and efficient management and decision making; Coordinating technical content and cooperation within and across work packages; Ensuring implementation of activities, completion of goals and measure project progress against KPIs and deliverables; Ensuring conformity to EC rules and procedures and liaison with the funding authority and corresponding administrative and financial issues; and Facilitating communication between partners.”*

The Quality and Risk Management Plan is a key deliverable, as it will help ensure high quality of all tasks and deliverables as well as set forth mechanisms and review processes for adequate quality assurance.

This deliverable is due in M6; however, it is a tool for all involved parties to continuously monitor quality and risks, and it will thus be continuously updated throughout the project as a key document on the shared drive set up by the Coordinator A4F.

The management structure and the project governance procedures, including representation, meeting organisation, minutes, voting, quorum and veto rules are based on the DESCAs model and described in detail in the Consortium Agreement.

1.1 Links with other tasks and deliverables

The Quality and Risk Management Plan is overarching and thus linked to all activities taking place in the project, and notably D7.3 Data Management Plan and D1.3 Exploitation Plan. It also covers aspects described in the Project Handbook.

2 Quality Management

The overall approach to quality management is two-fold: the design of high-quality documents with all content included and the timely completion of the deliverables.

As such, a key element to ensure quality related to the production of deliverables. The Coordinator has already developed a template, which all deliverables must follow where it is also indicated who is the main responsible for drafting, reviewing, finalizing and submitting. Each deliverable will be shared with all partners to ensure they sign off on the content, as well as will be finally review by the Coordinator. The responsible partner for a deliverable will:

- Supervise and coordinate the production of the deliverable and define its content;
- Circulate the document among the contributors using the secure, online communication platform;
- Ensure that documents are sent for review in due time.

The PMO will remind the respective partner in charge at least one month before the official due date about the production and review processes.

2.1 Innovation Management

As mentioned in the proposal, the main challenge facing the microalgae industry is to produce microalgae ingredients at a) the required scale, and b) at a competitive price. The microalgae production partners have observed a growing demand for their products, but also understand that they must fulfil all specifications from off takers as well as understand the main drivers for these to switch to more sustainable ingredients despite these not being able to compete with e.g., bulk protein from soy. Based on the keen interest proven by having 3 large users included in the consortium (FF, IFF and UPF) as well as Letters of Support from e.g., the global leader in aquaculture feed, the consortium seeks to address the gap and design the most efficient and optimal solutions for satisfying the needs from both a market and a technical point of view. The Market Analysis which is due in M12 will further shed light on key market drivers, total addressable market and purchasing decisions.

Participation of industry, academia and non-profit organisations will help foster creativity, innovation with state-of-the-art knowledge and exploitation capacity. Innovation management is an integrated part of the Exploitation Manager's work and takes the form of:

- Inward-focused innovation: to ensure that innovation comes from WP and partner synergies, and from a high level of autonomy at the WP level. Any new initiatives and/or ideas deriving from the project work are shared across all WPs with the rest of the consortium.
- Outward-focused innovation: by monitoring new opportunities and threats rising from other projects and/or the market) innovation

3 Risk Management

The core task of risk management is to be aware of and uncover any risks before they materialise and negatively affect the project's progress. A risk table was already detailed in the proposal, indicating the likelihood of these taking place and their potential impact. It is this table that acts as the basis for the risk register (cf. chapter 5) and which will be updated throughout the project as an iterative process connected to all WPs. Notably the SC and PMO will add any new risks and adjust the existing risks if they expect/experience changes to e.g., increased likelihood of occurring.

All partners have been, and will continue to be, involved in the identification of risks and developing mitigation measures. The management structure ensures clear lines of communication as well as frequent forums to raise any issues related to risk, and it is there that the WPLs will take any issues if deemed necessary. This ensures that all potential risks are dealt with quickly and efficiently. The next chapter gives a brief outline of the Management Structure and control mechanisms in place.

4 Control mechanisms within the organizational setup

4.1 Management structure

The project is cross-sectorial, interdisciplinary and industry-driven, with five out of eight partners coming from industry. The key pillars of the organisational framework are to ensure clear responsibilities and a transparent decision-making process that fosters collaboration in order to achieve the maximum value during the project. It is based on differentiated levels of action and responsibilities:

- The strategic level: the GA is responsible
- The tactical level: the SC is responsible
- The operational level: the PMO is responsible

Any risks that assume an increased likelihood of occurring or new risks identified will be escalated to the SC and finally to the GA, if solutions are not found at the operational and tactical levels. Furthermore, the Consortium can make use of the experts within the Advisory Board (AB) on an ad hoc basis or have this as a separate agenda point for when the AB meets annually.

4.2 Project bodies

4.2.1 General Assembly (GA)

The GA is the highest decision-making body for the project and is ultimately responsible for its success. It is composed of one representative from each partner, making a total of eight members. It is chaired by A4F, who will organise eight meetings during the project, as well as any additional extraordinary meetings (if requested by min. three partners). The role and responsibility of the GA is to discuss and decide on issues that cannot or have not been dealt with by the SC; this includes strategic (e.g., implementation of contingency plans or potential entry of new partners/termination of existing underperforming partners) and risks review if escalated further than the SC. To ensure transparent, clear and fair decision-making procedures, each representative has one vote and the GA must reach a qualified majority of min. 62.5 % in order to make a decision (i.e., five out of eight partners must vote in favour).

4.2.2 Steering Committee (SC)

The SC is the technical oversight body that ensures that the tactical level of the project is handled efficiently. It is chaired by A4F as Coordinator and includes all four WP Leaders. Its main function is to ensure coordination and transfer of information between the seven WPs, and to guarantee the high quality of all work done in the project. The SC reports to the GA on project progress and results as well as any risks and their appropriate mitigation measures arising during the project. It also supervises the data management, knowledge creation and management activities. The SC meets every three months via teleconference or Skype.

4.2.3 Project Management Office (PMO)

The PMO will carry out the daily project management activities incl. administrative, financial, legal and contractual management. It is responsible for compliance with the Grant Agreement and Consortium Agreement, IP management, data management, reporting, innovation management and budgets (incl. any deviations) as well as updating the project website and other internal communication materials. The PMO is also responsible for all communication with the EC. It will further assist the PC in preparing reports (data requests and consolidation), organising and chairing meetings by:

- Sending invitations, practical information, agenda, templates, attendance lists, etc. in connection with each meeting as well as meeting minutes including list of decisions, actions and participant lists to the partners
- Organising rehearsal review with partners in the case of EC reviews
- Facilitating meetings, including presentation of administrative and financial content to the partners

5 Risk Register for continuous monitoring

A “risk management” *log* template was developed for continuous monitoring and adapted to the reality of the COVID-19 pandemic.

Risk Management

Partner	Risk description	Likelihood of the risk of occurring	Impact if the risk occurs	Threat factor	Mitigation action/ strategy	COVID-19 related?
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		
				0		

Likelihood of the risk of occurring		Threat factor
Impact if the risk occurs		
1	Very low	1 - 5
2	Low	6 - 10
3	Moderate	11 - 15
4	High	16 - 20
5	Very high	21 - 25

Adding to it, a specific *log* template for continuous monitoring of “COVID-19 internal operational impact” on each partners activity was also developed in order to keep a closer look at the ongoing difficulties and be able to plan mitigation actions in advance.

COVID-19 internal operational impact

Partner	Month/Year	Status of access to laboratory	Status of access to office	Status of access to industrial facility	Expected impact (which tasks & deliverables)	Mitigation action
	(M1) May/2020	33%	0%	33%		
	(M2) June/2020	33%	33%	33%		
	(M3) July/2020	50%	50%	66%		
	(M4) August/2020					
	(M5) September/2020					
	(M6) October/2020					
	(M7) November/2020					
	(M8) December/2020					
	(M9) January/2021					
	(M10) February/2021					
	(M11) March/2021					

The first months of MULTI-STR3AM project showed us that there was also a need for the project coordinator to adapt to this new reality. At first it seemed that the COVID-19 pandemic would last some months. Now, it is known that probably it will last still some years, even with the ongoing vaccination. The risk of new variations of the virus will probably impose to governments new measures of social distancing such as restrictions on traveling and organization of events along the next – maybe – two-years.

Given this, MULTI-STR3AM consortium will need to keep track of this impact, design successful mitigation measures, in order to provide profitable results in despite of this new reality.