



Horizon 2020
European Union Funding
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Bio-based Industries
Consortium



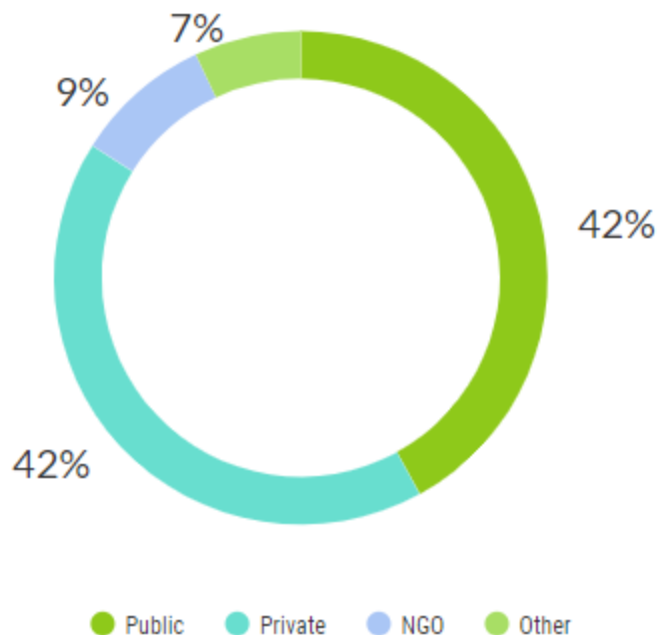
How can the bio-based sector contribute to the circular economy transition and green recovery?

Questionnaire Report

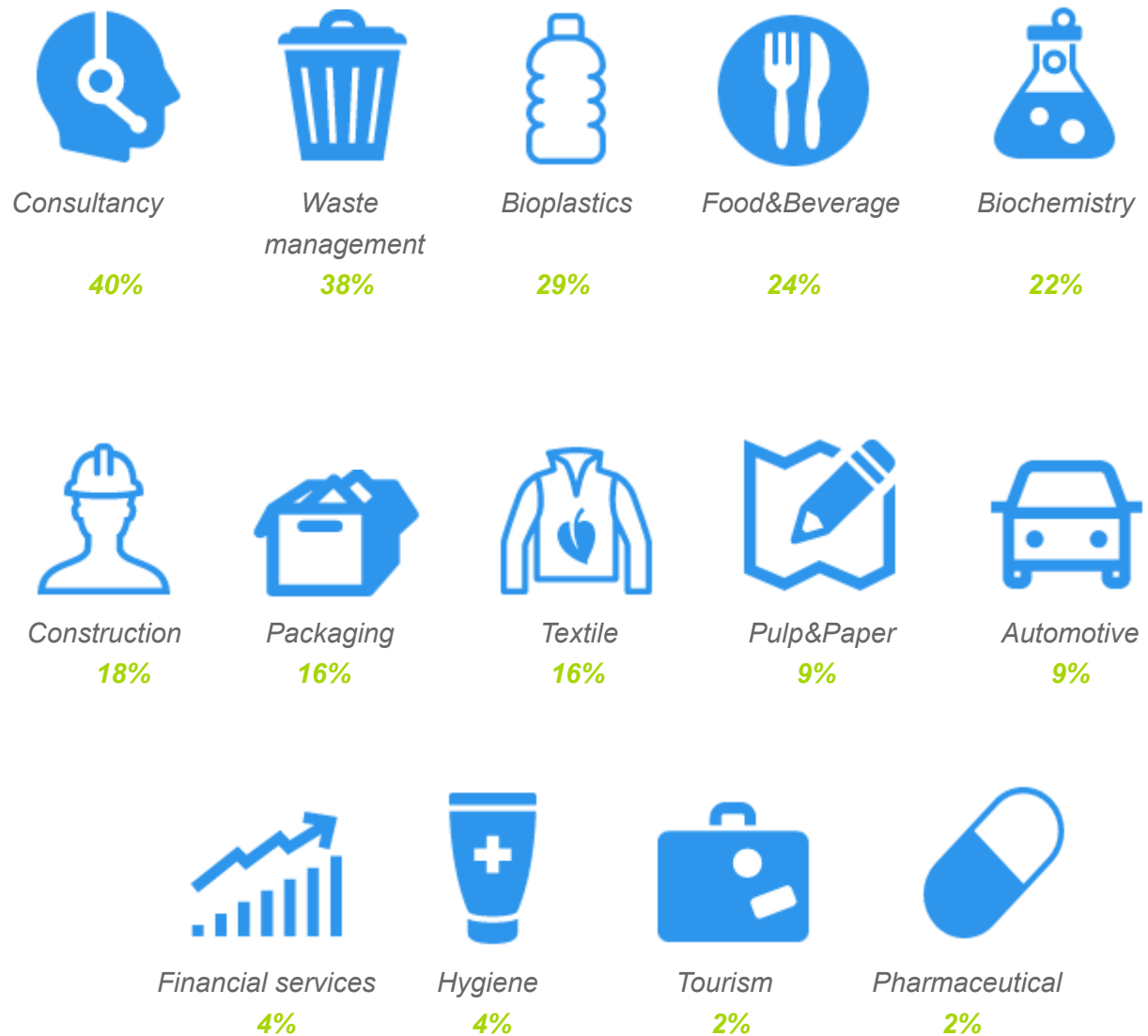
Report of the questionnaire “How can the bio-based sector contribute to the circular economy transition and green recovery?”

1. Introduction

In the spring of 2020, the EFFECTIVE consortium launched a questionnaire with the purpose of gathering preliminary insights on the future of the biobased sector given the global pandemic. This initiative was carried on via questionnaire due to the inability to engage in-person meetings with the biobased stakeholders. Most of the respondents were businesses based in the EU with a strong focus on countries in Eastern and South Eastern Europe. Some are also active outside of the EU, namely China, Brazil, Mexico, Canada, Chile, USA and North African countries. Almost half of the respondents were public, and the other half private, while on a minor proportion also NGOs and other types of organizations took part of the engagement.



The respondents are active in several sectors of the bioeconomy and some of them are active in more than one of them:



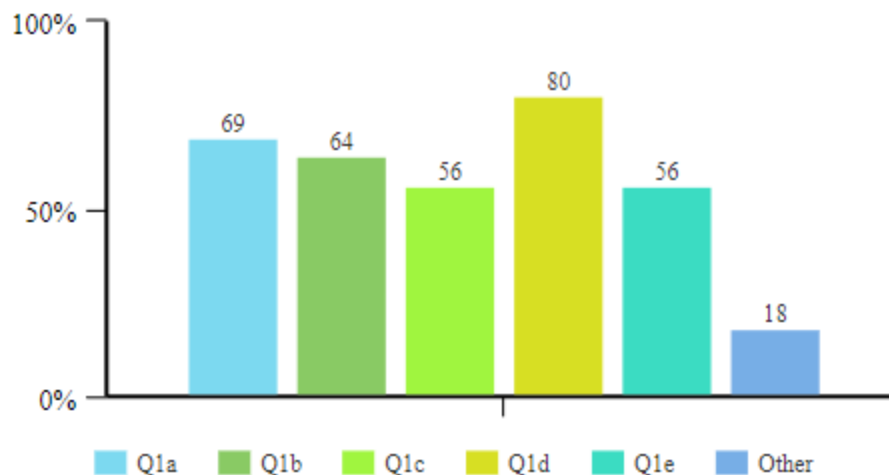
2. Results

QUESTION 1: What could the bio-based sector in general contribute to the implementation of the European Green Deal and the EU Circular Economy Action Plan (CEAP), and including the post-corona recovery?

Results by share of respondents agreeing to an answer (multiple choice):

The European Green Deal and the Circular Economy Action Plan are two fundamental strategy documents in the European Union and will continue to be for years to come. Their implications go far beyond one single industry, as their impacts are horizontal and have a great influence on the biobased sector and the overall bioeconomy development.

According to our respondents, the biobased sector as a whole can contribute by implementing these strategies and fostering the post-corona recovery by mainly developing **new business models** and biobased **value chains** which bring **innovation** to the table. Other important ways of contribution are the development of **new technologies**, new biobased **materials** and products for the present and future industry and consumer basin.



Q1a- Develop and demonstrate technologies Q1b- Develop new materials Q1c- Develop new consumer products
 Q1d- Develop business models and value chains from biomass supply to consumers of bio-based materials Q1e-
 Creating cross-sector interconnections and cross-industry clusters

Additional pathways to the ones proposed by our questionnaire and through which the biobased sector can contribute were proactively proposed by the respondents:

- Undertake research on what materials are safely biodegradable without leaving harmful residues in the environment.
- Encourage more brands to take action and use bio-based ingredients and materials
- Interconnecting the primary production sector into the circular economy
- Contributes to knowledge sharing and knowledge transfer
- Improve material reusability
- Including activists from the environmental movements
- Regulate fossil based products and institute a biobased purchasing advantage
- New ethical added value per se.

QUESTION 2: Rank the level of interest of your organization to create Circular Economy (CE) partnerships to uptake bio-based solutions in the next years to come

The bioeconomy and the circular economy are synergically entangled and can allow us to bring innovation to the biobased sector, which is evidenced by the fact that more than **70%** of the respondents have a strong interest into creating circular economy partnerships in the next 12 months, while more than **80%** of them in the next 4 years.

QUESTION 3: Rank the foreseen engagement of your organization to the implementation of CE bio-based solutions in the next years

However, the interest of the organizations was contrasted by the actual foreseen engagement of them to implement circular biobased solutions, where **56%** of them expressed a strong interest to do so in the next 12 months, and **72%** in the next 4 years. This clearly highlights the need of time and resources to create successful and effective projects and best-practices.



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QUESTION 4: Rank the level of available resources your organization has at disposal to establish CE bio-based partnerships

Establishing **partnerships** is needed in order to implement the circular biobased solutions that can support us in the green recovery. Partnerships can allow organizations to become more **resilient**, connect ideas, exchange **knowledge** and information, and develop **innovative** solutions.

The answers to the fourth question of this questionnaire have highlighted how the most available resource at the moment is the human capital. As a matter of fact, nearly **60%** of the respondents reported having a high availability of **human resources** for the purpose of creating circular bio based partnerships.

Not surprisingly, the most lacking resource was the **financial capital** and tools needed to do so; less than **one fourth** of the respondents declared having available financial resources for this purpose.

In between human and financial resources, organizations also declared the availability of **technology, materials** and **products**. Approximately **30%** of the respondents declared that they can contribute with at least one of these resources.

QUESTION 5: What is the foreseen role of your organization in the CE bio-based partnerships in the next two years?

Results by share of respondents agreeing with an answer (multiple choice):

The partnerships we need to develop require different roles to be successful, **more than half** of the respondents declared that their foreseen role would be that of developing new **business models** and new **value chains**, which is in agreement with the declared importance of this in the first question of this research. A similar number of respondents declared that their role would be to create cross-sector **interconnections**, such as in multisectorial clusters.

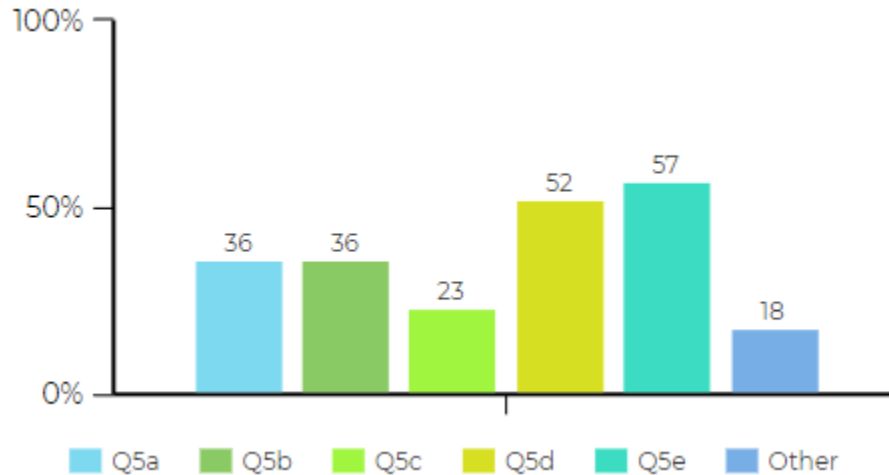
However there is a considerable presence of organizations ready to contribute in a technical role with **technology**, providing **knowledge** and the development of biobased **products**.



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*Q5a- Develop and demonstrate technologies Q5b- Develop new materials Q5c- Develop new consumer products
Q5d- Develop business models and value chains from biomass supply to consumers of bio-based materials Q5e-
Creating cross-sector interconnections and cross-industry clusters*

Other than the roles proposed by the questionnaire, the respondents proactively identified other types of roles they can assume in circular bio based partnerships:

- RDI
- Undertaking policy studies, enabling the policy environment and creating urban policy linkages
- Developing environmental impact assessments and appropriate assessments (habitats directive) of new materials and products.
- Commercializing technologies
- Engage and communicate with stakeholders in all areas of the bioeconomy
- Develop new standards for the future

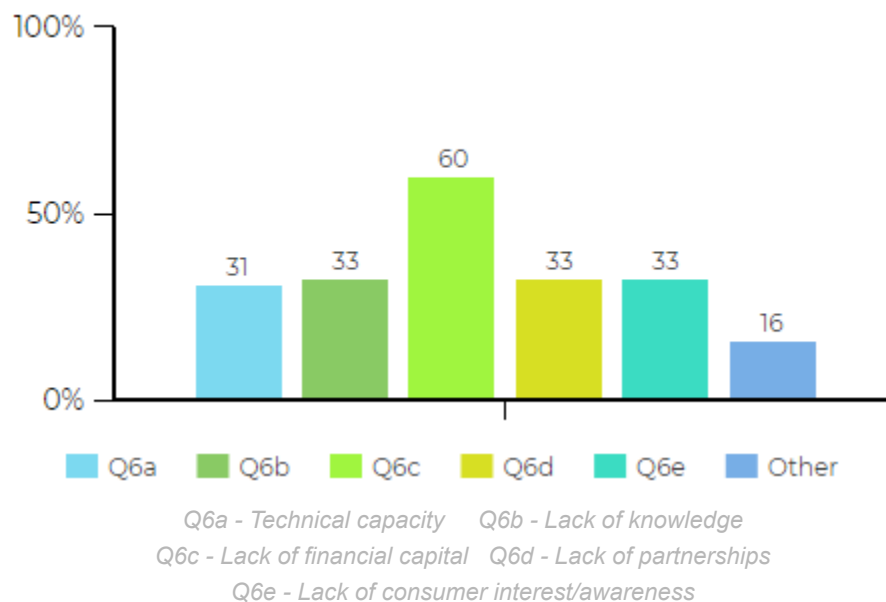
QUESTION 6: Identify the barriers your organization has to overcome to contribute to CE bio-based partnerships:

Results by share of respondents agreeing with an answer (multiple choice):

The questionnaire has highlighted the strong interest of businesses and organizations into implementing circular partnerships that can foster a sustainable biobased development.. In this

context, as already highlighted by the availability of resources in the organizations and what their foreseen roles are, the **main barrier** that was identified was the lack of **financial capital**. More than **60%** of the respondents declared the lack of it.

The transition phase in which we find ourselves is complex because it is a phenomenon with different dimensions. Besides the financial dimension, there are highly important layers such as, society, knowledge and technology.



As a matter of fact, **one third** of the respondents believed that after financial matters, the most important barriers are related to the **know-how** and **technology**, but also to the lack of existing **partnerships** and connectivity and consumer awareness. This means that in order to implement the circular biobased transition, we should invest resources and focus on raising the awareness of consumers towards biobased circular products, collaborate to bring ideas together and successfully implement them, and finally build knowledge that can be used to build a sustainable and successful bioeconomy.

The respondents identified the following as additional barriers to the ones proposed in the questionnaire:



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- Policy and regulations, lack of clear guidelines or there is not a national bioeconomy strategy in action.
- Lack of support by the public authorities.
- Field of work
- Price acceptance and replacements
- Existing certification schemes preventing the use of GMO
- Derived ingredients
- Long timeline for broad adoption (incl. for drop-in)

Biobased expertise

The expertise with which the the organizations who were engaged in this questionnaire can contribute to the development of circular biobased solutions are the following:



Research
64%



Innovation
57%



Business & Marketing
50%



*Communication &
stakeholder engagement*
50%



Education
44%



Engineering
36%



Digitalization
16%



*Policy development &
implementation*
<5%



Standardization
<5%

Additional comments and proposals delivered by the respondents

Directions and opportunities:

- Any CE initiative should be linked to the bioeconomy, this way the transition should be to a **circular bioeconomy**.
- Include the circular bioeconomy concept as a requirement in the cap and cohesion fund.
- Bio-based materials and technologies can provide **a route to a green and zero-carbon Europe** which would be based on the displacement of all fossil fuel-based materials.

Issues and challenges:

- The challenges to our bioeconomy include **connecting potential users of waste materials** to the suppliers of these materials. Then there is the **financial risk** of trying something that is not mainstream.
- Clarifying the legal definition of waste
- The complexity of handling waste management licenses.
- The biobased industries shouldn't be used to prop up overall growth in production and consumption.

3. Concluding remarks



We find ourselves in a transition phase where biobased solutions are an emerging and growing trend. Implementing the bioeconomy in a sustainable way is of utmost importance and in order to do so we have to collaborate together by forming circular biobased partnerships that can bring innovation, resilience and sustainability to the biobased and the European economies.

This questionnaire had the purpose of evaluating what different biobased organisations can offer in terms of resources and expertise and what is their knowledge and interest towards the implications of the European Green Deal and the Circular Economy Action plan.





The results of this questionnaire have shown us how the biobased sector is provided with different types of expertise and resources, however an improvement is needed especially when it comes to financing biobased and circular solutions.

The most positive takeaway found is that biobased organizations are keen to develop new business models and new value chains, while also acknowledging the necessity of cooperation between our different industries in order to produce the aimed innovation and fulfill the potential of our biobased solutions.

