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FOR THE MARKETABILITY OF SUSTAINABLE BIO-BASED PRODUCTS

LOBA CUSTOMER EXPERIENCE DESIGN

CIVITTA

Q-PLAN INTERNATIONAL

APRE Agency for the Promotion of European Research

PEDAL GET YOUR BUSINESS SPINNING

FVA NEW MEDIA RESEARCH

eco logic

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Horizon 2020 European Union Funding for Research & Innovation

Bio-based Industries Consortium

BIO-BASED INDUSTRIES Public-Private Partnership

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FOR THE MARKETABILITY OF SUSTAINABLE BIO-BASED PRODUCTS

D2.3. Results from the focus group validation workshop

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Project Overview

BIOBRIDGES is a 24 months action aiming at boosting the marketability of bio-based products - BBPs by establishing close cooperation and partnership between bio-based Industries - BBI, brand owners and consumers' representatives. The ultimate goal is to stimulate and support the active engagement of and interaction among all stakeholders (including local communities and local authorities) and improve market acceptance of BBPs.

BIOBRIDGES will design and implement replicable methodologies, procedures and good practices supporting multistakeholders' interaction, leading to new cross-sector partnerships. Main activities will be:

- Identify the cooperation challenges among consumers, brand owners and BBI
- Create a sustainable multi-stakeholder community involving consumer representatives, BBI and brand owners from different bio-based economy clusters and stimulate dialogue and cooperation
- Following a co-creation approach, increase consumers' and brand owners' awareness, confidence and trust on the benefits of BBPs compared to the fossil-based counterparts,
- Support the establishment of at least 2 new cross-cutting interconnections in bio-based economy clusters and define replicable procedures and good practices leading to the establishment of new cross-sector partnerships and business opportunities
- Stimulate the multi-stakeholder discussion toward pre-and co-normative research, new standardisation/labelling and emerging co-creation models (B2B and B2C).

At the end of the project, at least 2 new cross-sector interconnections in bio-based economy cluster will be established, while the foundations for the creation of new ones based on the arguments, best practices and recommendations deriving from the project will be formed.
The BIOBRIDGES consortium merges a variety of complementary expertise, aiming to build a consistent multi-actor approach integrating 9 partners already involve in other projects like BIOWAYS, BIOVoices and BIOSTEP.

Consortium

Estonia	Civitta Eesti As	Italy	FVA Sas Di Louis Ferrini & C
Greece	Q-PLAN INTERNATIONAL ADVISORS PC	Germany	Ecologic Institut gemeinnützige GmbH
Italy	Agenzia Per La Promozione Della Ricerca Europea	Croatia	Particula group d.o.o
Slovakia	Pedal Consulting Sro	Spain	Asociacion Espanola De Bioempresas

Budget **995.485 EUR**

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Partners LOBA . CIVITTA . Q-PLAN . APRE . PEDAL FVA . ECOLOGIC . PARTICULA . ASEBIO

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1. Executive Summary

The establishment of cascading of resources in the bioeconomy impedes the development of cross-sectoral bio-based value chains which will be eventually integrated in value networks.

The development of new cross-sectoral bio-based value chains requires synergies and cooperation between various sectors, both along and across the value-chains, bringing all actors together, mobilizing the innovations and pulling the market by bringing new innovative products. However, the interaction among processes and stakeholders between previously unconnected sectors carries various challenges that in many cases constitute obstacles towards the development of new value chains and sustainable bio-based business models.

In February 2019, Biobridges project performed an analysis on the cooperation challenges among consumers, brand owners and bio-based industry as well as the good practices for multi-stakeholder and cross-sector interconnections. In June 2019 the results of this analysis were discussed in detail with experts from the bioeconomy sector in the project's focus group co-creation workshop held in Brussels, BE. During this one-day event more than 20 experts shared ideas on:

- the most marketable bio-based application fields;
- the challenges that affect the collaboration in the value chain;
- the stakeholders needed to be mobilized and cooperate; and
- the actions needed in order to strengthen their collaboration.

The Biobridges Focus Group considered that the challenges have been well identified but the importance and significance of the challenges may differ based on the application field.

Moreover, it is evident that the most significant challenges that affect the collaboration among the stakeholders are related to feedstock availability and quality as well as the public awareness and demand. Likewise, functionality and performance are key factors to compete with the fossil-based products and are directly linked to the feedstock quality.

In addition, it seems that in order to address the challenges within the value chain the support of researchers and policy makers ("the supporting environment") is highly required, and strong networks/clusters need to be formed involving all type of actors of the chain.

The model validated and the recommendations derived by the Biobridges Focus Group Workshop will feed the content of the Biobridges co-creation events and activities that will engage and bring together representatives from the key stakeholders' group aiming to establish strategies and novel collaborations.

2. Introduction

This report was prepared under Task 2.3 “Validation of Biobridges challenges” of the Biobridges project (www.biobridges-project.eu).

The scope of this report is to record and present the results of the Biobridges Focus Group Co-Creation Workshop, held on 12 June 2019 in Brussels, Belgium. The workshop aimed at:

- enriching the results of the Biobridges analysis on the cooperation challenges among consumers, brand owners and bio-based industry;
- advising on the most marketable bio-based products;
- sharing ideas on the bioeconomy sectors that could benefit from a multi-stakeholder cooperation; and
- informing on best practices and lessons learnt for establishing new cross sectoral partnerships to boost the uptake of bio-based products.

Furthermore, the outcomes of the Biobridges Focus Group Co-Creation Workshop will provide the project partners with a knowledge base for the design of the Biobridges Platform and the development of key communication messages and material, as well as the preparation and implementation of the stakeholder engagement and co-creation activities (under WP4 and WP5).

To this end, the current document is structured, as follows:

- Chapter 5 presents the overview of the Biobridges analysis on the cooperation challenges among consumers, brand owners and bio-based industry along with the good practices for multi-stakeholder and cross-sector interconnections. The analysis[1] was conducted during the first months of the project implementation and served as the basis for the content development of the workshop;
- Chapter 6 describes in detail the scope of the workshop, its structure and content as well as the outcomes of the activities held.
- Chapter 7 concludes on the results and outlines further actions and next steps.
- Annex: Includes the agenda and photos from the event.

[1] The overall analysis is presented in the report D2.1 “Cooperation challenges among consumers, brand owners and bio-based industry” (https://www.Biobridges-project.eu/results/cooperation-challenges-among-consumers-brand-owners-and-bio-based-industry/)

3. Definitions

Bio-based products: products derived wholly or partly from biomass, such as plants, trees or animals. The biomass may have undergone physical, chemical or biological treatments.

Biomass: material of biological origin excluding material embedded in geological formations and/ or fossilized. Examples: (whole or parts of) plants, trees, algae, marine organisms, micro-organisms, animals etc[2].

Bioeconomy: the set of economic activities relating to the invention, development, production and use of biological products and processes[3].

Value chain: integrated process scheme, from feedstock to end products and markets

4. Abbreviations

B2C: Business to consumers

B2B: Business to business

LCA: Life Cycle Assessment

[2] CEN, 2014
[3] OECD, 2009

5. Overview of the Biobridges analysis

5.1. Cooperation challenges among consumers, brand owners and bio-based industry

The establishment of cascading of resources in the bioeconomy is of central focus impeding the development of cross-sectoral bio-based value chains which will be eventually integrated in value networks.

The development of new cross-sectoral bio-based value chains requires synergies and cooperation between various sectors, both along and across the value-chains, bringing all actors together, mobilizing the innovations and pulling the market by bringing new innovative products. However, the interaction among processes and stakeholders between previously unconnected sectors carries various challenges that in many cases constitute obstacles towards the development of new value chains and bio-based business models.

These challenges could be categorized in terms of feedstock, industry and market and may vary among the different stakeholders that represent suppliers, industry, brands and end users. Moreover, in the value chain each type of stakeholder could be both a provider and a client facing specific challenges per case.

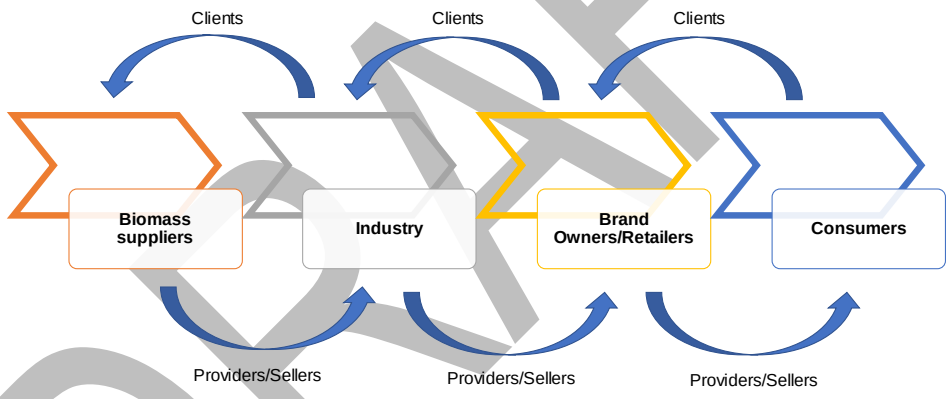


Figure 1: Interactions among the stakeholders in the value chain

All these complex interactions among the stakeholders in the value chain in conjunction with various industry and market related barriers further affect the adoption of bio-based products and practices as well as transfer any existing problem from one part of the chain to the other. Since each stakeholder occupies a dual position in the chain, both as a provider to each subsequent actor and as a client to each preceding one, the challenges posed are determined by both their initial identity (i.e. industry, brand owner, retailer etc.) and their contextual role in the chain (i.e. provider or client).

Biobridges aims to foster cross-sector partnerships between Bio-Based Industries, Brand owners and Consumer representatives, for the improvement of the marketability of sustainable bio-based products. Along these lines the project primarily identified the key challenges which seem to be faced by all stakeholders in their in between collaboration.

The table below presents the challenges that each type of stakeholder faces in the interaction with the subsequent and the preceding actor in the value chain as they were identified based on a literature review of studies, reports and results of relevant EU projects as well as semi-structured qualitative interviews with representatives from industry, brands, and consumers associations around Europe.

Table 1: Overview of the identified challenges that affect the collaboration among industry, brands and consumers

Industry	
Challenges in collaboration with biomass suppliers	Low feedstock availability
	High Transfer costs
	Differences in prices per quantity per region
	Differences in the level of bio-based sector development in EU
	Lack of knowledge about bioeconomy practices
	Lack of skilled work-force
	Difficulties in networking with relevant suppliers
	Lack of standardized labelling and certifications
Challenges in collaboration with brands	Lack of knowledge and trust
	High prices
	Low market demand
	Lack of support to small industries
	IP and patent issues
Brand owners	
Challenges in collaboration with industry	Lack of standardized labelling and certifications
	Functionality and performance of bio-based products
	Life Cycle Assessment
	Connection with industry stakeholders
Challenges in interaction with consumers	Enhance acceptance of bio-based products and communication of their benefits for the consumers
	Lack of standardized labelling and certifications
	Low demand
	High cost
Consumers	
Challenges in interaction with brands	Lack of standardized labelling and certifications
	Level of acceptance of bio-based products in terms of safety and performance
	Absence of well-targeted promotion of bio-based products

Based on the aforementioned analysis and the additional results of more BBI-JU projects such as LIFT (BBI-JU 837858, 2019-2020)[4] the following model (Figure 2) was developed aiming to place in the value chain the challenges that affect the collaboration among the key stakeholders. In particular, in the current model the value chain includes 4 key groups of stakeholders i.e. feedstock suppliers, industry & clusters, market (brands/retailers) and consumers. All of them need to collaborate and communicate to overcome the challenges that exist in their in-between interaction.

As you can see in figure 2,the challenges have been located in a specific intersection of the chain indicating the collaboration they are affecting. Moreover, some of the identified challenges are more related to the so-called “supporting environment” i.e. research, education

[4] https://www.lift-bbi.eu/

and policy and thus have been placed around the value chain.

The model below served as the knowledge-basis for the discussions held during the brainstorming sessions of the focus group co-creation workshop.

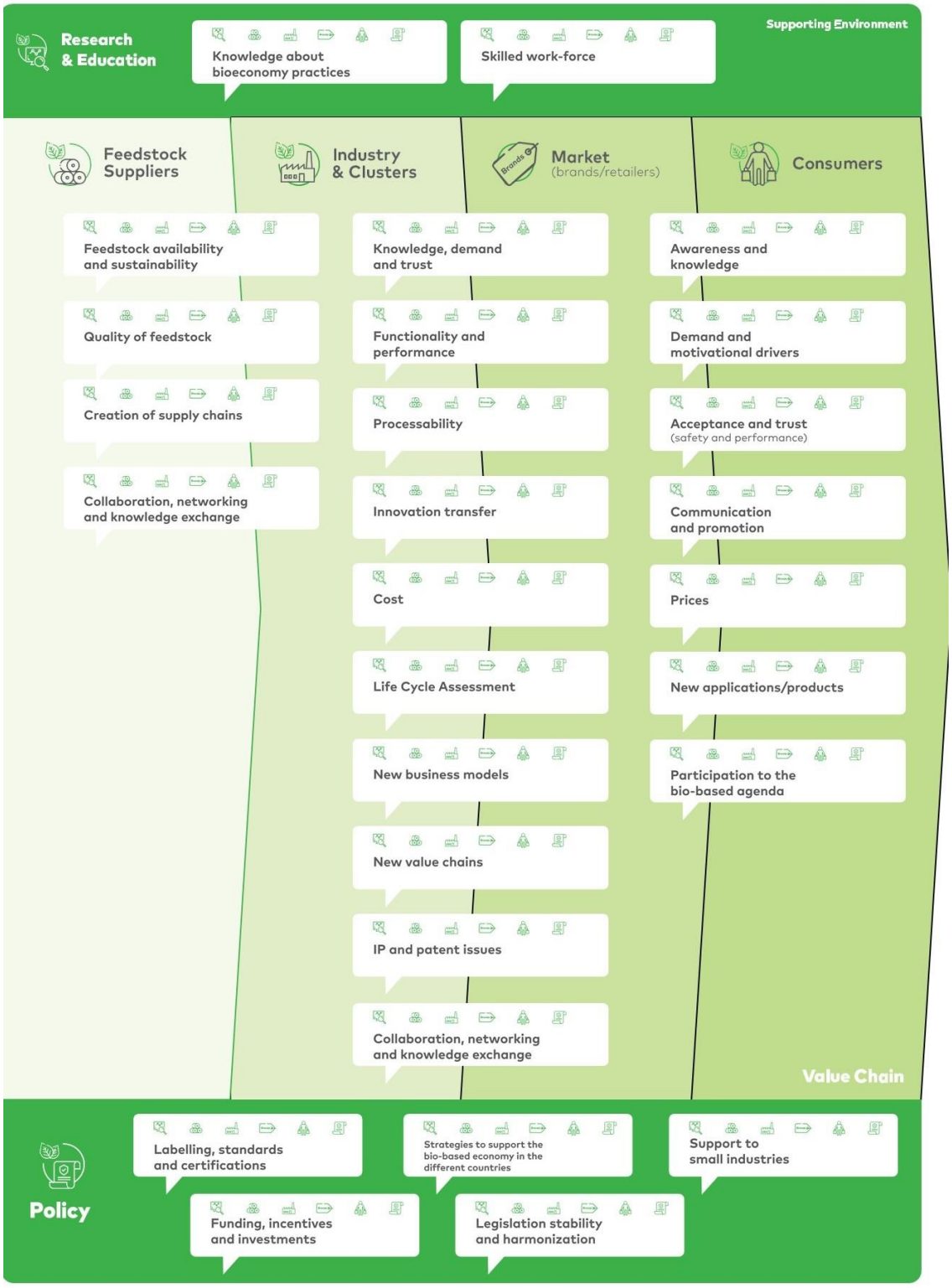
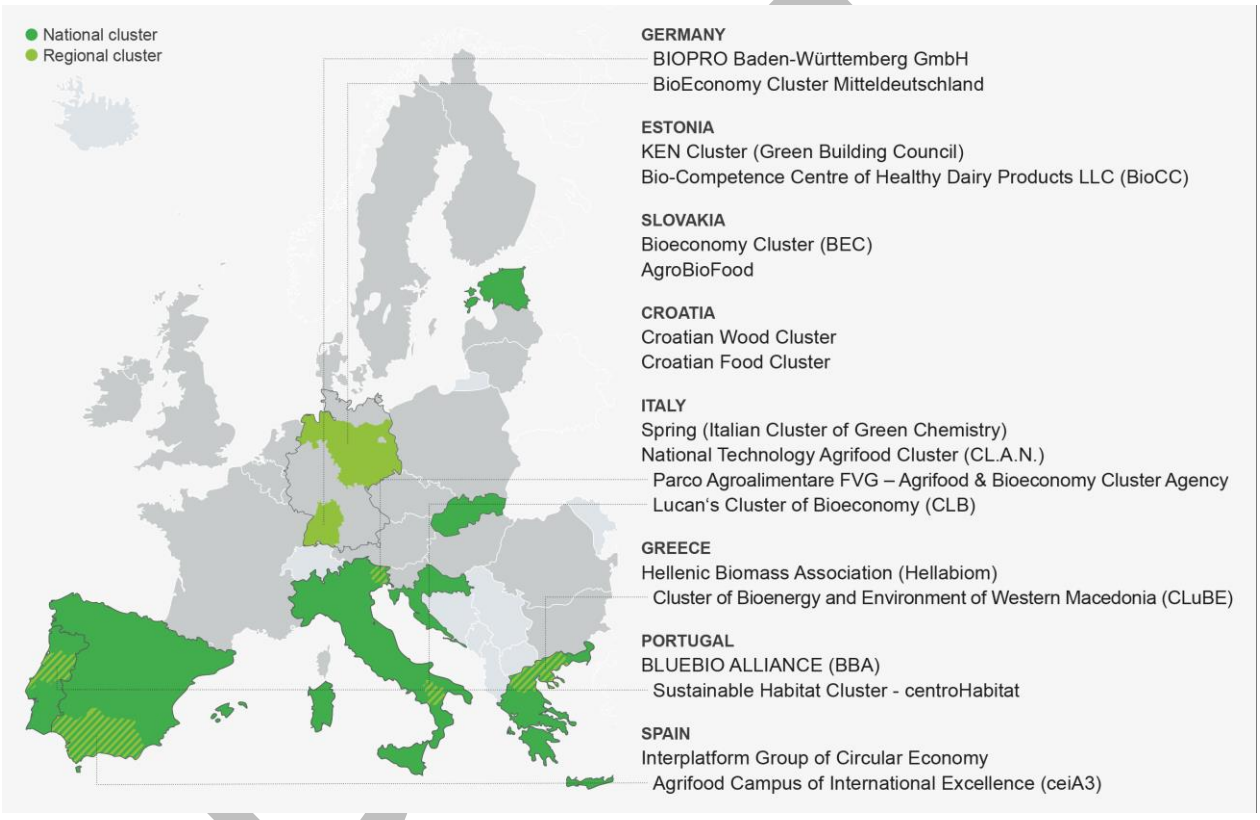


Figure 2: Biobridges value chain collaboration challenges model

5.2. Framework and good practices for multi-stakeholder and cross-sector interconnections

The ability of the stakeholders to create new bio-based value chains and networks or adapt existing ones varies among regions. Therefore, the dissemination of good practices of multi-stakeholder and cross-sectoral collaboration and of instruments that support this, as well as facilitation of knowledge sharing across European regions is crucial.

The analysis of 18 national and regional bioeconomy-related clusters and similar initiatives in Biobridges (see Map 1) has shown that there are good practice examples on tools for gathering stakeholders representing different group affiliations (research, industry, policy) such as matchmaking events, pitch events, innovation boot camps, phone applications, however, it showed also that examples on cross-sectoral collaboration are rare**.**



Map 1: Geographical distribution of the case studies

Note: The map shows the so-called "extended cluster region" of the Bioeconomy Cluster, Central Germany which includes the federal states Saxony-Anhalt and Saxony (core region) and Brandenburg, Berlin, Lower Saxony and Thuringia

Thematically, these good practices cover:

- Good examples in terms of concrete outcomes of multi-stakeholder collaboration (e.g. products, technologies).
- Working groups that bring together a wide range of stakeholders and facilitate exchange of knowledge and ideas.
- Support of start-ups with a clear vision towards sustainability.

- Collaboration between clusters and regions at national and international level.
- Public funding.

The analysis has shown that the importance of the cross-sectoral and multi-stakeholder collaboration is widely recognised, but remains a major challenge. This is particularly the case in countries which are considered 'moderate innovators' by the European Innovation Scoreboard[5] and have a low level of bioeconomy maturity[6].

The lack of national funding opportunities is a main obstacle which needs to be overcome for a better and more effective management and performance of bioeconomy (-related) clusters. In this context, coordination and facilitation efforts by public bodies are a key instrument when it comes to bringing relevant actors together. Successful (public) facilitators often follow an inter-sectoral approach and are able to support technology transfer from researchers to the business sector. In addition to public bodies taking the role of 'matchmaker', financial and organisational support and supportive policies are important requirements for businesses along new bio-based value chains.

In some of the analysed case studies where a key actor (e.g. a public agency or a research centre) embodies the above-mentioned criteria and/or a supportive regulatory environment was in place, the respective cluster is able to further develop its activities and to attract additional actors from relevant sectors.

[5] EU Scoreboard 2018, https://ec.europa.eu/growth/sites/growth/files/infographic-innovation-scoreboard-2018-map-full-size.png.
[6] Spatial Foresight, SWECO, ÖIR, t33, Nordregio, Berman Group, Infyde (2017): Bioeconomy development in EU regions- Mapping of EU Member States'/regions' Research and Innovation plans & Strategies for Smart Specialisation (RIS3) on Bioeconomy for 2014-2020.

6. The Biobridges Focus Group Co-Creation Workshop

6.1. The Biobridges Focus Group composition and scope

The Biobridges Focus Group constitutes a community of experts (external to the project's consortium) in the bioeconomy field who represent:

- Companies engaged in the production and marketability of bio-based products
- Organizations or companies that are the registrant of a trademark;
- Businesses that sell products to other businesses or to the public for use or consumption;
- Consumers associations;
- National Contact Points;
- Business associations;
- Non-Governmental Organisations;
- Research organizations.

The main aim of this community is to act as a "*consultation body*" to the project's findings contributing to the identification of the challenges that exist in the collaboration among stakeholders of the bio-based products' value chain, as well as to assist the formulation of key messages and the design of well-targeted activities (i.e.: multimedia materials such as videos, topics for co-creation workshops, etc.) to inform, motivate and engage stakeholders towards the market uptake of bio-based products.

The procedure to identify and recruit participants from the key stakeholder groups of Biobridges was based on purposive (as opposed to random) sampling. More specifically, the people contacted to participate in the focus groups co-creation workshop were not chosen at random from a given population, but rather the selection was targeted and based on their role within the bio-based and bioeconomy sector, as well as on the objectives of the respective workshop. In fact, special attention was given in order to ensure that participants will represent all stakeholders' groups in focus i.e. industry, brands, consumers. This approach allows for the broadest and most diverse coverage of perspectives with regard to the objectives of the workshop described in section 6.2.

To populate and formulate the Focus Group, a short list of more than 40 potential participants was prepared by the consortium, based on partner's personal networks, Biobridges interviewees and Advisory Board members as well as contacts made at various events that Biobridges partners either organised or participated in. The potential participants were provided with sufficiently detailed information so that they can make an informed, voluntary and rational decision to participate.

A total of 20 experts participated in the Focus Group co-creation workshop. Of these, 11 are members of the Biobridges Advisory Board.

6.2. Scope and structure of the Focus Group Co-Creation Workshop

The main and overarching objective of the Biobridges Focus Group Co-Creation Workshop was to validate and enrich the collaboration challenges in the bio-based value chain that were identified by consortium partners in the early stages of the project.

In addition, the activities held aimed to elicit information on the most marketable bio-based products based on the experts' point of view; the sectors of bio-economy that could benefit from a multi-stakeholder cooperation; procedures and good practices for establishing bio-based cross-sector partnerships. Focus was given to identifying the challenges to be addressed most urgently (WHAT), assessing which stakeholders to be mobilized and made cooperate (WHO) and framing the actions needed in order to strengthen their collaboration (HOW).

On top of that, this workshop served as test bed, in terms of content and approach, for the foreseen project activities which aim to inform, motivate and engage the key stakeholders of the bio-based value chain in a mutual learning process to enhance the marker uptake of bio-based products.

In terms of structure, the workshop aimed to use co-creation tools to facilitate the generation of ideas and exchanges of opinions and information. "Co-creation" is a collaborative approach where multiple stakeholders, with different skills, expertise, experiences and interests are actively involved and collaborate in order to jointly create value. In our case, ideas ranking exercises and brainstorming sessions were carried out in order to validate and enrich the Biobridges value chain collaboration challenges model (Figure 2) and extract useful information on what to address, who to involve and how to do it.

Moreover, in order to facilitate the implementation of the workshop a digital audience response system (Mentimeter, www.menti.com) was used. This way the audience could interact with the organisers, participate or vote with their smartphones, tablets or laptop. The answers to the questions were directly presented on screen in real time. The responses were collected anonymously, thereby lowering the possible objections for participants to freely share their ideas and perspectives.
The results of this interactive session are provided in section 6.3.

Along these lines, the Biobridges Focus Group Co-Creation Workshop lasted one day and was structured in 4 sessions as presented below[7]:

- *Welcome and warm up*:

  This session included a welcome speech from the Biobridges Project Coordinator (Mr Alexandre Almeida) and the Director Programming at Bio-based Industries Consortium (BIC) (Mr Nelo Emerencia). Moreover, a warm-up activity was held as icebreaker to trigger the interest of the participants. In particular, the participants were asked 4 questions regarding the use and purchase of bio-based products in their everyday life. By using Mentimeter tool the answers were immediately shown on the screen and the results led to an open discussion.

- *Plenary session:*

[7] The Agenda of the workshop is included in the ANNEX of the current document.

The plenary session started with the presentation of the results of the Biobridges analysis i.e.: the identified challenges affecting the collaboration among bio-based industry, brand owners and consumers as well as the good practices for multi-stakeholder and cross-sector interconnections aiming to familiarize the participants with the concept of the event and the discussions that will follow.

Later on, the participants shared ideas on the main drivers/barriers for industries, consumers and brands to switch to bio-based products as well as voted on the most marketable application fields.

- *Working in team session:*

The outputs of the plenary session were discussed during 3 brainstorming rounds in the form of a world café activity. The participants, grouped in 3 teams, were asked to express their opinions and discuss how to address the identified cooperation challenges among the key bioeconomy stakeholders per sector (what, who, how). The 3 sectors under discussion derived by the voting exercise held in the plenary session. Each round was moderated by the Biobridges partners. Each of the groups had the opportunity to brainstorm about the 3 selected sectors:

- Food packaging, disposable products for catering and events
- Personal care and cosmetics, health and biomedical, neutraceuticals
- Sports accessories and toys

- *Reflections on the outputs of the discussions:*

The aggregated results of the activities and the discussions were outlined by the project partners and are reflected in the following sections.

6.3. Results

6.3.1. Warm up activity

In the first session of the workshop the participants were asked about the use and purchase of bio-based products in their everyday life. The aim of this exercise was to trigger a discussion on the bio-based products usage and market availability among people that are experts on the field. The mentimeter digital tool was used allowing to present the results in real time. These questions and subsequent answers do not consist a survey. They were solely used in the context of the workshop in order to familiarize participants with the content of the event and prepare the ground for the discussions that followed.

The majority of the focus group participants indicated that they do use bio-based products in their everyday life (43%) (Figure 3). However, interesting is the fact that some of them do not know whether the products they use are bio-based or not (26%) (Figure 3). Moreover, it seemed that the bio-based products that they use the most are packaging material, pulp and paper, personal care and home care products, cleaning materials, fibers/textile and office materials (Figure 4). These bio-based products are available in the market and produced both by international brands and local industries (Figure 5). Nevertheless, it appears that they are being promoted more by local retailers rather than international brand chain store (Figure 6).

All these outcomes were discussed and linked to the identified market challenges such as the labelling, the communication and promotion and the creation of new value chains.

Figure 3: Frequency of use of bio-based products as a consumer

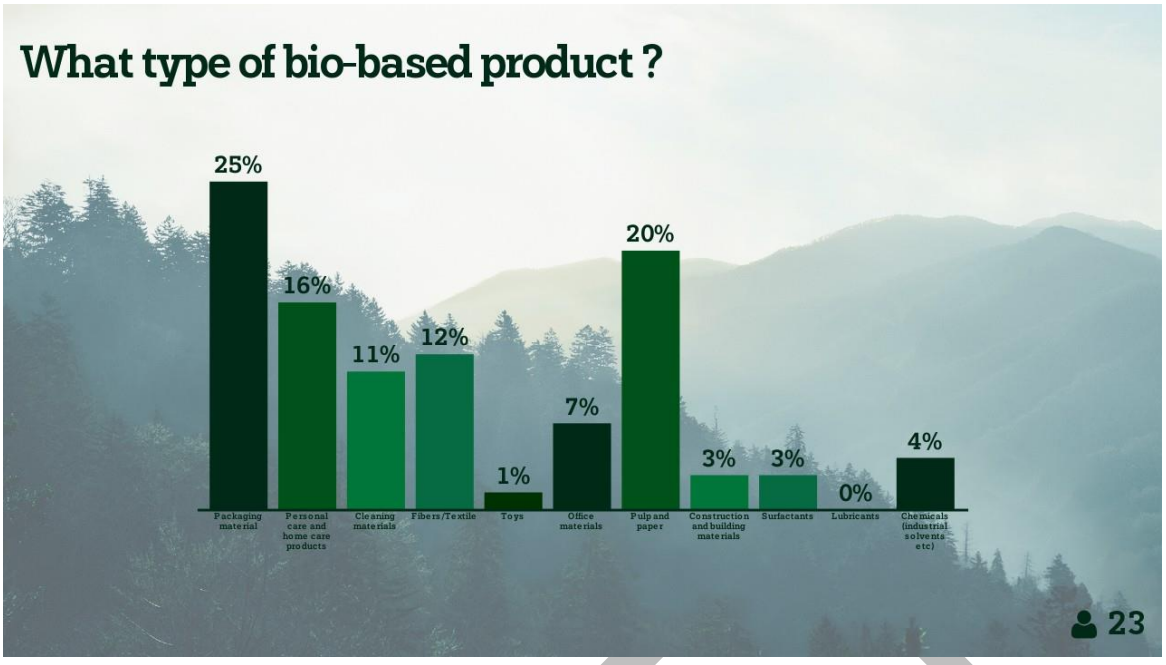


Figure 4: Type of bio-based product that is purchased

Figure 5: Market origin of the purchased bio-based product

Figure 6: Type of retailer

6.3.2. Ideas sharing activity

During the plenary session of the workshop and following the presentation of the identified collaboration challenges in the bio-based value chain, an idea-sharing activity was carried out aiming to set the stage and formulate the baseline content for the "working in teams" session.

Considering the complexity of the nature of the identified collaboration challenges, these could be divided in two types:

(i) the ones which can be addressed through the involvement of the public sector or relevant policy makers (i.e. government, public and regional authorities etc.); and

(ii) those which can be securely approached through the collaboration and initiative of the various stakeholders involved in the value chain.

As such, during the workshop a question arose regarding the second category and concerned the motivational drivers that could influence the various stakeholders to collaborate more towards establishing strong, sustainable and marketable bio-based value chains. In this context, the participants were asked to use the mentimeter digital tool and indicate in free text what they believe to be the motivational drivers for industries/brands/consumers to switch to bio-based.

As the figures below present, it seems that for industry and brands the most prominent drivers are consumers' demand and the sustainability of the value chain. For industries, key aspects are also regulations and legislation, innovation and circularity. On the other hand, for brands it is important the functionality of the products and their image in terms of marketing. Overall, it seems that motivational drivers related to health and climate change may influence consumers attitude.

Figure 7: Motivational drivers for industries to switch to bio-based

Figure 8: Motivational drivers for brands/retailers to adopt bio-based products

Figure 9: Motivational drivers for consumers to purchase bio-based products

Given that the bioeconomy sector is wide enough and involves a lot of processes and stakeholders, the collaboration challenges and relevant actions to address them may be differentiated among the various application fields of bio-based products. In this sense, the workshop aimed to focus on validating, enriching and analysing the identified challenges for 3 of the most marketable application fields.

In order to identify the 3 most marketable bio-based application fields we based on the list (see figure 10) from BIOVOICES project (H2020-KBBE-774331, 2018-2020)[8]. Leveraging on the expertise of participants we asked them to modify the list by adding more application fields if it was needed and then vote on the 3 that in their opinion are the most market-mature today.

As Figure 10 presents, the participants voted that the top 3 market-mature bio-based application fields are:

(i) food packaging, disposable products for catering and events;

(ii) personal care and cosmetics, health and biomedical, neutraceuticals; and

(iii) sports accessories and toys.

Consequently, in the "Working in teams" session the collaboration challenges were discussed in detail in the context of these 3 bio-based application fields.

[8] https://www.biovoices.eu/

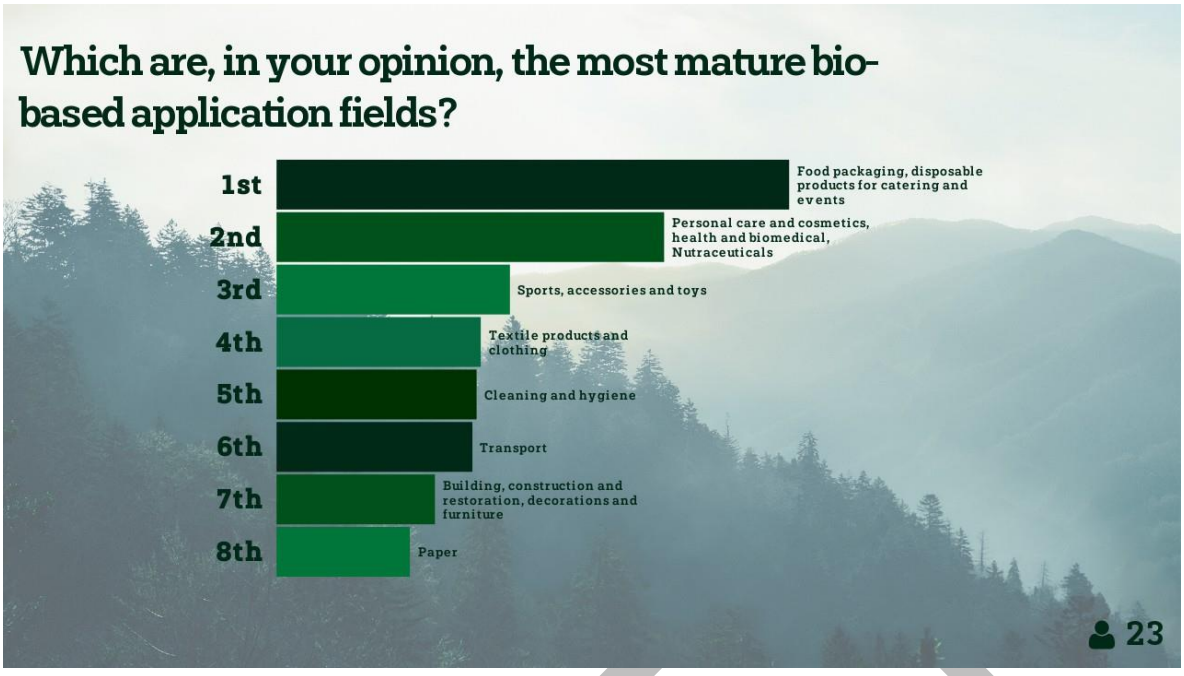


Figure 10: Ranking of bio-based application fields based on their marketability

6.3.3. Brainstorming sessions

In the brainstorming sessions participants, divided into groups of 7 people, discussed on the collaboration challenges that exist in the value chain of the application fields of:

- food packaging, disposable products for catering and events;
- personal care and cosmetics, health and biomedical, neutraceuticals and;
- sports accessories and toys.

The model presented in Figure 2 was used in each session in order to assist participants in identifying the most important challenges to be addressed per each of the 3 selected sectors and in particular which stakeholders are needed to work together and what actions are required. Moreover, the invited experts were asked to share good examples that could be replicated.

Due to time restrictions, each group was asked to indicate 3 challenges from the model that in their opinion were important per each of the 3 selected sectors as well as to add more challenges if needed. Then the discussion focused on the challenges that were indicated by the majority of the participants in the table.

The following paragraphs present the main outcomes of the discussions per application field.

Application field 1 - Food packaging, disposable products for catering and events

Challenges affecting the collaboration *(What)*	Key stakeholders to be involved *(Who)*	Actions needed *(How)*
Cost	- Research organizations - Industry - Investors - Consumers	- Improve production process - Improve functionality - Promotion of bio-based food packaging solutions instead of fossil-based ones.
Labelling Standards and certifications	European Commission with the common effort of other stakeholders (consumers, industry and researchers)	Communication and promotion: Messages in the labels saying where the product comes from, awareness campaigns, traceability to increase the trust
LCA	- Industry - Researcher/academia - LCA experts	Develop a common process for LCA
Logistics	- Governments - Municipalities - Public sector	- Establishment of collecting systems - Creating an environmental labelling
Functionality & performance	- Industry - Researchers	
Feedstock availability and sustainability	- Public sector - Farmers - Industry - Technology providers - Investors	Cooperation of all the stakeholders of the value chain in order to have enough feedstock

Moreover, the participants indicated that food safety, end of life, acceptance and trust, awareness and communication are also important aspects that need to be taken into consideration.

As good examples were mentioned the standardization in the construction sector, the recycling systems in Belgium and Germany and automotive sector's companies that have already replaced some interior fossil based plastic parts with bio-based ones. Moreover, it was discussed a lot the role of education as well as the advantages of giving incentives to consumers for recycling. In addition, an interesting example referred to Estonia where new lignin value chain is being established giving impulse to the industry.

Application field 2 - Personal care and cosmetics, health and biomedical, neutraceuticals

Challenges affecting the collaboration (What)	Key stakeholders to be involved (Who)	Actions needed (How)
Quality of feedstock	- Research - Suppliers	- Researchers and universities should be included in the process, especially in the definition of the requirements and quality of the feedstock - Industry should define their requirements and the farmers associations could have an important role in communicating those requirements to the farmers and therefore produce feedstock accordingly - Cascading use of feedstock it is very important, especially in this area were high level/quality feedstock is needed
Functionality and performance	- Research - Industry	Bring new functionalities and performance to the market, taking inspiration from the nature
Acceptance and trust	- Brands - Consumers	Apply incentives and motivational drivers

In the field of personal care and cosmetics, health and biomedical, neutraceuticals, it seemed that the quality of feedstock plays a crucial role. The participants highlighted especially the aspect of health and safety as well as the need of traceability of the process along the value chains including “pre-vale chain” analysis. Moreover, it is interesting that the cost of the final product does not seem to be an obstacle in cosmetics since the consumer appears willing to pay.

Some examples mentioned the recovery and use of CO2 from cement to increase algae production for cosmetics and the extraction of fenols.

Application field 3 - Sports accessories and toys

Challenges affecting the collaboration (What)	Key stakeholders to be involved (Who)	Actions needed (How)
Feedstock availability and sustainability	Feedstock suppliers, such as farmers and foresters, need to work together with industries. Also, other stakeholders are needed, e.g., researchers, who can generate alternative feedstock.	- Mapping the biomass production sites - Leverage existing initiatives and events to raise awareness on the potential usage of feedstock
LCA	Policymakers, industry, suppliers, material manufacturer, retailer/brand owner, sector-based specialized consultancies, e.g. plastics/bioplastics.	- Collaboration and innovation/knowledge transfer - Stakeholder analysis along the value chain
Functionality & performance	Feedstock suppliers, industry, technology / researchers, and financial institutions / organizations.	
Quality of feedstock	- Industry and feedstock, researchers. - Associations should be involved, who determine the quality and create the trust for the bio-based products and can transfer the message (problems, etc.) to the relevant stakeholders.	Clusters need to be formed, especially when a huge quantity of feedstock is required, then many feedstock suppliers have to be involved in gathering the necessary amount of feedstock, and a cluster could take responsibility for the quality and collection of the feedstock, also ensuring the consistency

Moreover, it was highlighted that in this sector, design plays an important role; therefore, the feedstock needs to meet a certain quality. Also, especially in the case of toys, the feedstock quality is extremely important since the end product has to be safe in terms of health.

One idea proposed was to have a specialized consultancy that provides information about sustainability, biomass availability, how to handle it, who to involve, facilitate networking, etc. Other idea suggested, to “force” the companies to do stakeholder analysis along the value chain. In general, the keyword seems to be “networking”.

In addition, awareness and well targeted promotion were also noticed. Ideas were shared that education has to start from the end-user; and it also can create a snowball effect, for example: school educates children, the child goes home and spreads the teachings thereby increasing the awareness of the whole family.

Many good examples were mentioned such as:

- Sportswear large brands use bio-based soles for sports shoes;
- Initiatives that use wood-fibers to produce shirts;

- An Italian company produces toys using bioplastics;
- Pilots4u database: Pilots4U Aims To Set Up One Very Visible, Easily Accessible Network Of Open Access Pilot And Multipurpose Demo-Infrastructures For The European Bio-Economy With Europe-Wide Coverage;
- Large brands establish campaigns about bio-based products;
- A Basque clothes industry is switching from using polyester to cellulose and wool, both gathered locally.

7. Conclusions

The current report presents the results of the Biobridges Focus Group Co-Creation Workshop that was held in Brussels, on June 12th, 2019 with the two-fold aim to validate and enrich the identified challenges that affect the collaboration among the key stakeholders of the bio-based value chain (i.e. industry, brands, consumers) as well as test the Biobridges approach for the design of the Biobridges Platform, the development of key communication messages and material and the preparation and implementation of the stakeholder engagement and co-creation activities. The Biobridges Focus Group was composed of 20 multi-disciplinary experts in the knowledge fields of the bioeconomy and BBPs.

During the workshop, productive discussions took place with valuable ideas, arguments, best practices and knowledge shared. The Biobridges Focus Group considered that the model presented is well developed and the main challenges have been well mentioned. On the other hand, it is interesting that based on the application field the importance and significance of the challenges may differ.

It is worth mentioning that in all the 3 application fields that were discussed (i.e. food packaging, cosmetics, toys, sports and accessories) it is evident that the most significant challenges are gathered in the beginning of the value chain and at the end. In fact, challenges related to feedstock availability and quality as well as the public awareness and demand were stressed out in all cases. Likewise, functionality and performance are key factors to compete with the fossil-based products and are directly linked to the feedstock quality.

Moreover, it seems that in order to address the challenges within the value chain the support of research, education and policy is highly required. Although in some specific cases close collaboration between specific stakeholders is needed, it was highlighted that the creation of strong networks and the involvement of all type of actors could be very effective. It was suggested that events between industries, feedstock suppliers, clusters (farmers, industries, brand owners) will enable to spread activities and initiatives, such as new projects, opportunities, events, etc. In addition, the establishment of clusters may facilitate the collaboration with other stakeholder groups.

The model validated and the recommendations derived by the Biobridges Focus Group Workshop will feed the content of the Biobridges co-creation events and activities that will engage and bring together representatives from the key stakeholders' group aiming to establish strategies and novel collaborations.

As a direct follow-up to the Focus Group Workshop, Biobridges consortium started to develop a database of past and ongoing cross-sector interconnections (success cases), according to the bio-based application fields, challenges, stakeholders stressed during the workshop.

The database will serve as baseline for future Biobridges co-creation events and activities.

Annex

Biobridges Focus Group Co-Creation Workshop Agenda

Agenda

BIOBRIDGES FOCUS GROUP CO-CREATION WORKSHOP

biobridges
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Wednesday, 12 June 2019

Slovak Liaison Office for Research and Development (http://slord.sk)
Rue du Luxembourg 3, 1000 Brussels, Belgium

9:00 – 9:30	**Registration**
9:30 – 10:15	**Welcome** Mr Alexandre Almeida, LOBA, BIOBRIDGES project coordinator Mr Nelo Emerencia, Director Programming at Bio-based Industries Consortium (BIC) **Scope/structure of the day/warm-up activity** Ms Eleni Karachaliou, Q-PLAN INTERNATIONAL ADVISORS, BIOBRIDGES partner
	PLENARY SESSION
10:15 – 10:30	**Overview of the BIOBRIDGES analysis** Ms Eleni Karachaliou, Q-PLAN INTERNATIONAL ADVISORS, BIOBRIDGES partner Ms Zoritza Kiresiewa, ECOLOGIC Institute, BIOBRIDGES partner *Presentation of the:* *• Identified challenges affecting the collaboration among bio-based industry, brand owners and consumers;* *• Good practices for multi-stakeholder and cross-sector interconnections.*
10:30 – 11:15	**Ideas ranking activity** *The participants will share ideas on the main drivers/barriers for industries, consumers and brands to switch to bio-based products as well as the most promising/mature application fields.*
11:15 – 11:30	**Coffee break**
	"WORKING IN TEAMS" SESSION *The results of the "BIOBRIDGES analysis" and the "Ideas ranking activity" will be discussed during 3 brainstorming sessions. The participants, grouped in 3 teams, will be asked to express their opinions and discuss how to address the identified cooperation challenges among the key bioeconomy stakeholders per sector (what, who, how). Each session/table will be moderated by the BIOBRIDGES partners.*
11:30 – 12:30	**Brainstorming session 1**
12:30 – 13:30	**Light lunch**
13:30 – 14:30	**Brainstorming session 2**
14:30 – 15:30	**Brainstorming session 3**
15:30 – 15:50	**Coffee break**
15:50 – 16:30	**Reflections on the outcomes of the discussions**
16:30 – 17:00	**Conclusions of the day**

Partners LOBA . CIVITTA . Q-PLAN . APRE . PEDAL FVA . ECOLOGIC . PARTICULA . ASEBIO

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