# bloom

Boosting European Citizens' Knowledge and Awareness
of Bio-Economy Research and Innovation

# D 1.2

# Communication
# Framework

## Report

# Document Description

| Document Name | Communication Framework |
|---|---|
| Document ID | D1.2 |
| Date | 28 August 2018 |
| Responsible Organisation | Wissenschaftsladen Bonn |
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## Executive Summary

BLOOM will address three aspects related to the transition to a European bioeconomy: awareness raising, education/ training and stakeholder network extension.

This includes the identification and evaluation of best practice examples of communication strategies of different target audiences and their implementation through five regional hubs whose activities also include the identification of barriers and drivers.

Bloom will arrive to a targeted approach in these five regions by activities of work package 3 and deliver a description of the awareness problem in bioeconomy sectors, the bioeconomy concepts and the framework for innovative dialogues. Interviews with stakeholders as well as with experts both in science communication and bioeconomy conducted in the different hubs by the hub coordinators will add to this global picture

Together with the bioeconomy mapping report (D1.1), which provides an overview of the bioeconomy in its full breadth based on the flow of production and conversion within the bio-based economy, and work package 6 "Dissemination, Cross-Network collaboration and Exploitation" and the activities in work package 3 "Dialogue and outreach activities Co-creation and stakeholder involvement", this deliverable, the communication framework, will build the basis for dialogues with different stakeholders and will help to contribute to a better understanding and more broaden outreach of bioeconomy as well within Europe as in each of the five BLOOM hubs to be implemented and put into practice through BLOOM's communication strategy.

This deliverable outlines the differences between a communication framework and a communication strategy, describes principles for effective communication and specifies BLOOM's overall communication goals, its target audiences and key messages, and communication methods, channels, tools and activities.

Finally it gives an overview on challenges for BLOOM when reaching out to target audiences.

Five summarizing interviews with the hub coordinators and reporting of the findings to partners and stakeholders will later on contribute to the review and update of the communication framework and hub based activities. These finding will be published on the Bloom web platform in a separate report.

## 1.     The problem

"The bioeconomy encompasses the production of renewable biological resources and the conversion of these resources, residues, by-products and side streams into value added products, such as food, feed, bio-based products, services and bioenergy." [1]

The Europe 2020 Strategy called for a bioeconomy as a key element for smart and green growth in Europe. Raising awareness for the advancements in bioeconomy research and

innovation will allow Europe to improve the management of natural resources and to open new and diversified markets in food and bio-based products.

The participants of a high level Bioeconomy Policy event, organized by the European Commission in November 2016 the European Commission to discuss the progress on the delivery of the European Union's Bioeconomy Strategy and Action Plan summarized: "A sustainable, circular bioeconomy has the potential to reconcile human needs with nature, in the context of Sustainable Development Goals, and to ease the transition to a post-fossil-fuel future. The bioeconomy is cross-sectoral and vast, encompassing all regions of Europe, from traditional activities, such as cork harvesting, to cutting-edge technology." [2]

The rapporteurs continued that bioeconomy is often misunderstood because of its diverse nature and that actors in the bioeconomy may not even be aware of their contribution to the whole bioeconomy because they consider themselves as part of only one sub-sector. The event report therefore concludes that bioeconomy requires education, changes in public perception and research.

In November 2017 the Bioeconomy Stakeholder Panel published a Manifesto and indicated guiding principles, actions and recommendations for further deployment of bioeconomy in Europe.

The following proposed guiding principles and actions will be central part of the Bloom project:

> *Cooperation between sectors and actors along and across value-chains:* "This (principle) requires efforts to bring actors together and a holistic approach that is respectful to the varying situation for stakeholders from different parts of the bioeconomy-web. By giving more visibility among sectors and to consumers, the innovations will diversify and market pull can be stimulated for new products..." [3]

> *Importance of regional strategies and rural renaissance:* Regions are key actors in developing the European bioeconomy and a strong bioeconomy can make regions more economically attractive. ... The bioeconomy can help Europe revitalise rural areas. A European bioeconomy will offer a new perspective on traditional and high-value production in the regions, as well as creating new opportunities and jobs for farming, forestry, fisheries, aquaculture and industry. [3]

Actions

> *Enhancing education, training and skills.* Education of school children and high school students are crucial to raise a generation that can understand the challenges and embrace the opportunities of a bioeconomy. For example, teaching principles of circularity, of acting global and local at the same time (glocal), and raising interest for exploration will contribute to preparing the new generation to find its way...

> Raising public awareness is essential in order to ensure the development of a smart, sustainable and inclusive bioeconomy, to create a market for sustainable bio-based products and to promote more sustainable consumption and lifestyle patterns. [3]"

Bloom's guiding principles and actions focus on raising awareness and understanding (of citizens and the young generation), and on collaboration and exchange between various partners (along the value chain, in regions, different perspectives). Communication will be the key; therefor we will elaborate the Bloom communication framework based on relevant theory and concepts.

A couple of barriers are reported for different bioeconomic sectors. Priefer, Jörissen and Frör stated 2017 that "besides the current European framework conditions, there are a number of barriers that hinder the implementation of the cascading approach (in waste hierarchy and changing biomass into biogenic products). This includes logistic and financial restrictions, the lack of economic incentives for the use of secondary materials, and a lack of information and awareness about resource scarcity among consumers." [4]

Keegan et al specified for the Biomass Futures project that there are little or no financial incentives in Europe for farmers, and the broader agricultural community, to collect and transport agricultural residues from the field for industrial use. They add that "the development of a cascading use may also be hindered by a lack of consumer information and sensitivity on the material composition of products, as well as a general lack of attention by both consumers and industry to the end-of-life disposal of the materials they manufacture or purchase."[5]

BLOOM's main objective is to establish open and informed dialogues, co-created by European citizens, the civil society, bioeconomy innovation networks, local research centres, business and industry stakeholders and various levels of government. BLOOM's interactions aim to

(a) raise awareness and knowledge on bioeconomy by enabling open and informed dialogue throughout the bioeconomy innovation processes

(b) build up and strengthen a bioeconomy community,

(c) gain a common understanding of the concept, providing reliable insights into bioeconomies, its practices, benefits and implications

(d) foster learning and education.

With that, the project will support the reduction of barriers towards a bioeconomy to be identified in stakeholder dialogues and stimulate bioeconomy activities at the regional and EU level.

Bloom's approaches and activities will be applied in five regional hubs, which have selected bioeconomy as smart specialization strategy. In these regional hubs triple helix partners already work on innovation pipelines, from new ideas to valorise regional biomass to biobased products, to the implementation of new bioeconomy practices. Bloom will support these partner's activities with a focus on raising awareness, fostering bioeconomic understanding and extending the current networks especially with civil society. Bioeconomy is seen as a complex problem or mission (see 1.1), because of the collaboration between actors from different domains (public, private, knowledge, civil society), and the realization of new value chains (agriculture, processing industries, consumer products),

Bloom will work on approaches which will help to overcome the complexity. The communication framework will base on E. Wenger's concept of Communities of Practice [6] [7] which is suitable for complex situations and which focuses on social learning between actors, by managing on learning processes (belonging, becoming, learning by doing), and by applying and organizing activities which focus on enhancing engagement, imagination and alignment, which will lead to communality (or an innovation ecosystem) on a common domain, practice and identity (or ambition and profiles).

Based on this concept, Bloom will focus on involvement and engagement of all stakeholders, getting to know each other, enabling cross-fertilization and idea generation through shared knowledge and experiences. Bloom will design and facilitate outreach activities that are exactly adapted to the regional needs of the stakeholders. Thus, co-creation workshops will be implemented in each hub and interviews will be conducted in work package 3, based on subjects, topics and guidance identified and described in work package 1.

BLOOM's communication strategy as set up in WP6 thus will enhance the communication about bioeconomy concepts elaborated in task 1.1 through:

- Sharing knowledge of bio-based economy – and indicating the underlying concepts

- Raising awareness on opportunities by sharing insights, discussing concepts, benefits, needs and concerns

- Extend the BLOOM network – by engaging CSO's and the general public and fostering interactions between partners, to learn about their knowledge, skills and ambitions

- Making use of different existing bioeconomy networks and experts from industries and retail, media, CSO's and research to enlarge the impact of awareness raising activities Educating people and making knowledge available

- Supporting the identification of good examples of strategic choices, collaborations, policies, product development but also bio-based products: exhibitions, to be elaborated in hub activities of work package 3 and disseminated through the Bloom web platform and communication channels as described in work package 6.

Thus, effective, integrated and coordinated communication is integral to carrying out Bloom's activities for raising awareness and increased networking on bio-based economy issues.

The purpose of this framework is to describe a strategic approach for effectively communicating BLOOM information on both bioeconomy concepts and practices as well as information developed by BLOOM partners for BLOOM audiences, advice and guidance across a broad range of bio-economy issues from potential applications to emerging and novel risks.

The Framework is not designed as a communications strategy for particular bio-economy approaches or geographic regions. Instead, the principles and measures can be used as resources to develop specific strategies to include communications that are more actionable, accessible, relevant, timely, understandable, and credible.

## 2.     Communication – the concepts

As outlined before, there is a growing need for information, advice and guidance, from increasing capacity to improved integration of available communication channels including media relations, social and online communications, branding, visual communications, and health and emergency risk communications. The Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee of the Regions [1] lists:

- Circular economy is not well-known among European citizens due to a general lack of information or a lack of information sources tailored to the general public.

- There is little knowledge on the tangible benefits and opportunities that the use of biological resources promises to bring to everyday life.

- Educational programs are only in an initial phase and citizens are not aware of the main themes.

- Consumers are generally not aware of the fact that bio-based products have come about through an alternative as many of these products are not easily distinguishable from their fossil based counterparts.

- There is little awareness of existing bioeconomy products and activities that are derived from this innovation and research driven area.

- Knowledge sharing in or between polity, research, education and business is still in a very early stage of development.

Bloom's communication approach is presented as a framework of principles for effective practice that apply to a broad range of communications functions. Measures are included to develop communication products and activities that apply the principles (see work package 6 and D6.1). If these measures and resources are used, communication at all levels can be improved.

A Communication Framework should not be confused with an organization's or project's Communication Strategy, which is about what content to communicate and how that content is communicated. The difference between the two is important because they have very different meanings and are managed differently. But, the better the Communication Framework in place, the more options are available for what content is created and how it can be communicated.

Communication is not only to be seen as outreaching to external stakeholders but also to ensure that project members are informed of and can actively participate in decisions, processes, events and any other project activity.

## 2.1.    Principles for effective communication

We all use different communication tools – phones, email, faxes, texting and many more. Any method of communication like words—oral or written, pictures, graphs, diagrams, etc. may be adopted to communicate. Effective communication is that communication in which the receiver is understood actually what the sender wants to convey, and in the same form.

The following principles should be considered in Bloom – for external communication but also for communication within the project consortium [8] [9] [10]:

1. **Clarity:** The message must be as clear as possible. The message can be conveyed properly only if it has been clearly formulated in the mind of the communicator.

2. **Objective:** The purpose of communication must be clear before actually transmitting the message. The objective may be to obtain information, give information, initiate action, and change another person's attitude and so on. If the purpose of communication is clear it will help in the choice of mode of communication.

3. **Understanding the receiver:** The communication must create proper understanding in the mind of the receiver. An awareness of the total physical and human setting in which the information will be received is supportive: the place of work; the receptivity and understanding levels of the receivers; the social climate and customs; the information's timeliness.

4. **Consistency:** the message to be communicated should be consistent with plans, policies, programmes and goals of the project. The message should not be conflicting with previous communications.

5. **Completeness:** the message to be communicated must be adequate and complete; otherwise it will be misunderstood by the receiver. Inadequate communication delayed action, poor public relations affects the efficiency of the parties to communication.

6. **Feedback:** Communication is a two-way process and provides opportunity for suggestion and criticism.

7. **Time:** information should be communicated at the right time.

Effective communication has to be underpinned by an effective disseminatin strategy (WP6) and by using the communication tools that best fit the purpose of the communication, the technical abilities and the working styles of the team members.

## 2.2.    Communication methods, techniques, channels and tools

The principles highlighted in this framework apply across the whole of Bloom's communications work. The main communications functions are presented below and are elaborated in detail in deliverable D3.3 (Guidebook on engagement and co-creation methodologies) and in deliverable D6.1 (Dissemination strategy).

- Internal communications
- Brand and corporate identity
- Strategy, content and outreach
- Audio-visual communications
- Communications and co-creation capacity building
- Social media
- Websites / online communications
- News media

# 3. The Bloom Communication framework

## 3.1. Overall communication goals

Bloom aims at initiating structured and consistent communication on the bioeconomy across a range of on- and offline platforms, tools and methods with a view to boosting knowledge of the general European public. By stakeholders contributing to the concept, the design and the performance of the outreach events, they become 'owners' of activities and results, tasked with promot-ing the results and contributing to bioeconomy in the long run as 'ambassadors' or multipliers. Each regional hub will organise several open dialog events in different forms to allow for the involvement of different persons and groups. The hubs will also develop services to society and identify 'multipliers' for communication that will carry the message even beyond the regional networks that the project will identify. By identifying major facilitators and barriers in the co-creation workshops of work package 3, Bloom aims at advancing the understanding of the steps to take to accelerate the bio-economy deployment. Therefore Bloom communication aims at

- Build greater public support for BLOOM's mission and activities focused on the biobased economy.

- Make project communications more participatory

- Support communications within the Consortium and Hubs

- Reach out to new audiences

- Demonstrate relevancy and benefits to key audiences

- Messages and outreach activities are informed by relevant policy and stakeholders' knowledge and experience

## 3.2. Target Audience

Within regions, triple helix organizations have already collaboratively set common smart specialization strategies. The focus of BLOOM's communication strategy therefore should lay in reaching out for more people and organizations, to participate, support and act in the direction of a broader awareness of benefits and opportunities of a bio-based economy and following a quadruple helix model of innovation that extends the current collaboration between government, industry, academia Civil Society as the sector of voluntary action

within institutional forms that are distinct from those of the state, family and market, consists of a large and diverse set of voluntary organizations, often competing with each other and oriented to specific interests. The quadruple helix model for innovation brings these multidisciplinary viewpoints together in an environment that promotes team working, collaboration and the sharing of ideas.

BLOOM target audiences include identified regional, national and international bioeconomy communities (like bio-based industries, bioeconomy stakeholder panel, EU institutes, bio-based regions and regional networks) developing research around the bioeconomy movement which will be identified by the regional hubs. But BLOOM also addresses bioeconomy projects through events, platforms (that are focusing on bioeconomy for specific target groups like industry or strategy platforms) and the participating partners of this consortium:

BLOOM target audiences can be categorised as follows:

- **General public**, citizens of the EU: information, awareness raising, support acceptance of bioeconomy, stimulate exchange/dialogue with science and authorities: inhabitants of EU bioeconomy regions, and inhabitants of cities

- **Young European citizens:** future workforce, future consumers generating innovative ideas for bioeconomy products and use

- **Policy makers, authorities** on local and regional level: policy advice, raise awareness towards the importance of involvement of the civil society, train the multipliers to act as ambassadors for the bioeconomy, while policy makers stimulate political discourse to further support regional innovation ecosystems

- **Educational institutes and Science communication networks:** Commnet, Commbebiz net, Social Media, like Science Shops, knowledge and innovation Centres, valorisation departments of universities and organisations dedicated to teach and/or communicate bioeconomy

- **Bioeconomy researchers:** working on different fields of bioeconomy, opening up their approach to scientific rigor and changing their role towards knowledge brokers and with a need for bringing their research further into the innovation pipelines and the regional practices.

- **NGO's** from connected fields in Bioeconomy

- **Industry and other triple helix network partners: move towards a quadruple helix approach,** to co-create the future and drive structural changes together with civil participants far beyond the scope of what any one organization or person could do alone **and strengthen** the regional innovation ecosythem

- **Media** partners that work in different fields of science communication and/or environmental issues

These different target audiences will have their own characteristics and needs, varying from country to country. As such each will require different approaches to how to best

communicate with ( as specified in WP6). There is no single strategy that works with all your audiences with equal result.

## 3.3.  Key messages

The development of the bioeconomy needs to be driven by the desire to meet several of the big societal challenges of our time. The EU bioeconomy should be sustainable in terms of people (jobs, inclusiveness), planet (limits to resources, biodiversity, ecological balance and climate) and profit (resource efficiency, competitiveness). Given the growing needs of the growing population these societal challenges will become even more imminent. [2] BLOOM's communication is based on quality-assured and quality-controlled data and information. The challenge of communicating often complex and inter-linked issues of a bio-based economy can be tackled by framing information within the context of overarching key narratives:

- **The environment and climate are at the core of all societal and economic issues.** We all rely on resources or services provided by the natural world. By integrating environmental and climate concerns into a wider range of areas of policy, it is possible to find solutions that are economically, socially and environmentally sustainable.

- **There is an urgent need to improve ecological resilience.** Many aspects of the natural world are now changing at a faster rate than modern society has ever experienced. We must ensure that actions avoid lock-in into unsustainable systems of consumption and production and instead open pathways to the sustainable use of resources and ecosystem services.

- **To introduce and implement biobased economy's innovations, a society-wide increase of awareness of opportunities is needed.** Access to information, communications and informative events about the bioeconomy (events, public discussions, discussions in the media etc.) and its products as well as the involvement of civil society and other stakeholders in decision-making processes (public consultations etc) are needed to enable society to follow ongoing developments in industry and research.

- **Closing the information and knowledge gap between stakeholders.** Research and the application of its results are often disconnected due to information and knowledge gaps and institutional and conceptual barriers between researchers, innovators, industry, educational institutes, policy-makers and the civil society. Knowledge transfer has to be facilitated through co-creation with and for stakeholders.

- **Improving the biobased economy requires better implementation of policies.** To meet this goal, it is needed to gain better knowledge on the state of the innovation, measures taken and the expected effects of policies. BLOOM's hubs are well-placed to provide this information.

- **Solutions are achieved at local, regional and global levels.** Through creativity, networking and action, local and regional frontrunners can improve quality of life and help implementing bioeconomic innovations, processes and products. At the same time,

governments and the international community need to step up their commitment and efforts in improving a bio-based economy.

These broad narratives will have to be specified at the level of individual, hub-related, bio-economic themes and outputs.

## 3.4. Bloom Communication methods, techniques, channels and tools

The way society consumes and creates information is rapidly changing and BLOOM will try to adapt to these developments. Thus BLOOM tries to achieve more impact in communications using resources efficiently to provide access to bioeconomy knowledge and to deliver project messages to target audiences at the right time. BLOOM's communication is committed to the following priority areas of work:

### Digital channel and products

As BLOOM is intensively focusing on outreach and awareness raising on bioeconomy, social media and online presence is crucial for the project. BLOOM data will be made open access to be reached via the project website. Individuals and organisations making use of the website will be encouraged to add their experiences, and to connect with each other. The website is the main platform for communicating BLOOM knowledge. Additionally, BLOOM is collaborating with other bioeconomy projects such as the BioWatch platform of the BioWays project. BLOOM is also using social media channels (Twitter, Facebook, Instagram and Youtube) for the dissemination of information on bioeconomy and project outcomes. Twitter and Facebook are the main channels for awareness raising and positioning BLOOM in the European discourse on bioeconomy as well as spreading BLOOM activities.

### Understanding audience needs

BLOOM will build an increasingly nuanced understanding of who our stakeholders are, their working processes, information needs and concerns. This work will include using tailor-made dissemination services, information, and debate monitoring to ensure that BLOOM knowledge consistently reaches target audiences at the right time and best contributes to awareness raising and knowledge creation.

### Creating outputs that match audience needs

BLOOM will produce communication products and teaching units that are appropriate to the way the targeted audience digests information, including shorter publications, digital and audio-visual products. This will help facilitate greater accessibility and engagement with information about biobased economy.

### Using communication channels

All partners will continuously use, adapt and improve communication channels for communication and dissemination actions, including their websites, newsletters, blogs, social media platforms (Facebook, Youtube, Twitter, Pinterest, Instagram), videos and public speaker events. By developing coherent sets of messages and deploying them in

appropriate forms throughout different channels, BLOOM will ensure consistency and efficiency in its communication.

Partners will engage and participate in direct interactions, face-to-face meetings, conferences, workshops and dialogue activities. These are all crucial ways to reach key audiences and stakeholders. This will involve supporting stakeholders' capacities to work with BLOOM through shared events, data and information, and methodologies.

## 3.5.    Challenges for BLOOM reaching out to target audiences

Besides addressing the fact that among civil society there is only little knowledge about bio-based economy and low excitement, because of a lack of current context. A specific challenge addressed by BLOOM is to foster involvement and regular dialogue during the different stages of the innovation process in order to build strong involvement for meaningful co-innovation.

Another major obstacle is the fact that education is mostly disconnected from scientific, societal or innovation issues and challenges.

The renewed European Union agenda for higher education set out by the European Commission in May 2017 notes that 'research is not exploited enough as input for teaching while undergraduates are often not involved in research. This limits students' opportunities to explore contemporary issues and develop their research skills ' [11] [12]

Approaches to change from a subject orientated teaching to interdisciplinary or even transdisciplinary learning are rather slow and hardly implemented in Europe. At the level of universities and higher education institutes, educational programmes, courses, departments dealing with the bioeconomy are gradually being developed. Yet, the Bioeconomy in school education needs more attention.

**Targeting awareness**
Climate Change, Food Insecurity and other significant challenges that a bioeconomy addresses, will be featured topics during the hub activities and their impact on everyday life will be highlighted.

By applying a co-creation approach on different interactive events in public space and convergence of media channels awareness, knowledge and commitment will be created, tailored with and for the different target groups. Qualitative workshops and quantitative surveys to identify the information needs of each of the segments within the target groups will allow updating and reshaping provided information but also feed into education and training.

**Targeting Education and Training**
Numerous projects on bioeconomy topics have been supported by the European Commission, not only in Horizon 2020. For instance, the Bio-based Industries Consortium gives an overview on funded Coordination Support Actions of which many also addressed awareness raising and educational measures. [13] Existing educational tools will be collected and structure in the following way:

- Target groups: to describe the target groups of users that will be chosen and addressed for the collection of the material to be further developed into the educational tools

- Contents and source of material: this part refers to the topics and issues related to bio-based products and the bio-based economy for which material has been collected

- Educational tools: to briefly outlines the tools that have already been developed and what is planned for the future

Bloom then will provide teachers with a set of bioeconomy educational resources that will cover a variety of subjects, from food production to chemistry. These resources will appeal to different students, depending on their background and experiences thus providing teachers with points of references and possibilities to open dialogues within diverse classrooms and bridge possible social gaps. Bloom will also ensure that teachers are either trained or have access to local support that will help them implement them.

**Targeting network extension**

Through its Hubs BLOOM seeks collaboration with regional Bio Economy Networks, local partners in the education sector, training institutions, stakeholders that work on policy formulation as well as industry experts and as such will expand existing networks. BLOOM will also link with ongoing and finished bioeconomy projects and their project partners through contributing to their previously established platforms as well as through inviting project key persons to workshops and events to share previous experiences on education and training or communication and outreach.

## 3.6.   Exploration of suitable approaches

In preparation for the Global Bioeconomy Summit 2018 in Berlin, the German Bioeconomy Council decided to commission a survey exploring the key topics of concern to experts around the world. The report provides relevant information for all bioeconomy players. The study might have implications for public policy measures and confirms the important role of future international collaboration, especially for research and capacity building in the bioeconomy.

The report published April 2018 states: "Courses at universities for undergraduates and graduates (43%) and "teach the teacher" programmes (35%) were scored by respondents as the education measures thought to have the greatest effect. Open learning platforms were thought to have the least effect (13%). … Comments underline the importance of vocational training courses in general and also for important actors, such as journalists or executives, not affiliated to bioeconomy. Best practice examples may also serve as an appropriate education measure. Further remarks included temporary studies and cooperative schemes."

Regarding Desirable communication measures the same report states: "Attempts to communicate the concept of bioeconomy or how it could improve quality of life without using up the world's natural resources could be key to its further development. According to this global survey, respondents would use 10 to 20 percent of the total government funding for bioeconomy for public communication and/or citizen engagement, depending on the

country. The more developed the cluster is, the lower the amount spent: HighTechs[1] (10%), BasicPrims[2] (20%).

However, passive communication measures, such as campaigns using traditional media channels (35%) or social media (32%), are preferred. Active dialogues with citizens (23%) and nongovernmental organizations (21%) take a middle position. Exhibitions (12%) seem less important as communication tools maybe because of their smaller outreach and the greater effort required. A closer look reveals interesting preferences between the different clusters. International respondents clearly viewed traditional media as most important. In contrast, European officials viewed communication campaigns using traditional or social media as less important. One reason might be firmly established communication channels within Europe. Instead, they preferred dialogues with citizens. Interestingly, this is not a view reflected by the HighTech cluster. It is worth noting that communication campaigns via social media are viewed as least important by the BasicPrim cluster. This observation might reflect the status of Internet accessibility within these countries. Comparing the clusters with regard to dialogues with citizens and NGOs, the picture is mixed. This observation might reflect regional aspects or attitudes."[14]

### To a targeted approach

Bloom will arrive to a targeted approach in the regions by activities of work package 3 and deliver a description of the problem (Task 3.1 Mapping of stakeholder, needs, drivers and barriers), the concepts (3.2 Setting up of five innovative BLOOM hubs and Deliverable 1.1 Bioeconomy Mapping Report) and the framework (3.3 Selecting innovative Dialogue formats to bioeconomy outreach activity needs).

For BLOOM interviews with stakeholders as well as with experts both in science communication and bioeconomy in the different hubs will add to this global picture. The scope of the interviews will also focus on the assessment of potential collaboration with BLOOM (co-creation workshops, events, dissemination activities, educational/training activities, networking), on the identification of publishable outputs of interest to be promoted through BLOOM and on valuable insights for the development of the information material and educational material to be promoted through BLOOM (case studies on practical solutions, fact sheets, presentations, promotional videos, etc. based on experienced barriers and drivers. The interview questions are closely connected to those asked by the Bioways project [15] to get a broader data base and receive comparable results. Five summarizing interviews with the hub coordinators and reporting of the findings to partners and stakeholders will contribute to the review and update of the communication framework and hub based activities.

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[1] High-Tech Bioeconomies (HighTech): Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Japan, Netherlands, New Zealand, Norway, Russia, Sweden, United Kingdom, USA

[2] Basic Primary Sector Based Bioeconomies (BasicPrim): Kenya, Mali, Nigeria, Senegal, Tanzania, Uganda

## 3.7. Evaluation and Learnings

This framework will be kept under review and is meant to inspire and guide BLOOM's communication activities and will be reviewed on an annual basis. Key activities and key issues to be evaluated and reported by the Hub leaders (in connection to WP6) will be

- What are the main problems in communicating bioeconomy concepts and innovations?

- Who are the main communicators, mediators and multipliers?

- Who are the regional and the national audience, who joins and who leaves?

- How has the communication strategy been adapted?

Findings, review and updates will be made available through reports which will be published on the Bloom platform.

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# 5.    Appendix 1: Guiding Questions for interviews with stakeholders, experts and hub coordinators

Interviews with stakeholders as well as with experts both in science communication and bioeconomy in the different hubs shall add to the global picture of awareness problems regarding the concepts and needed dialogue formats in bioeconomy.

The scope of the interviews shall also focus on the assessment of potential collaboration with BLOOM, on the identification of publishable outputs of interest and on valuable insights for the development of the information material and educational material to be promoted through BLOOM The interview questions are closely connected to those asked by the Bioways project [15] to get a broader data base and receive comparable results.

The interviews shall be conducted prioritizing: 1) in-person interview, 2) telephone, 3) e-mail. The interviewees shall get explained which are the benefits of their collaboration (fulfilment of networking and dissemination commitments in their projects, dissemination of their project through the BLOOM platform, publication of an article on the BLOOM website, etc). Answers will contribute to the review and update of hub based activities.

The questions below are not comprehensive. They are meant to be guiding questions and do not have to be answered completely. Other questions not listed here but might be of importance for the hub activities can be added and should be shared with the other hubs.

Please ask for informed consent before starting the interviews. An informed consent form is provided in deliverable D7.2 "Project Handbook &Data Management Plan".

## General Questions

- Which are the application areas/market segments related to your bio-based products/technology/service/outputs (PTSO).
- Do these application areas include teaching, training and dissemination materials?
- How is the current situation of the market potential and penetration of new and innovative PTSO?
- Which are the benefits and opportunities of these PTSO?
- Which are the barriers, risks and concerns of these PTSO?
- Your opinion on potential hurdles on the new PTSO or new functionality:
  - low public, private or industrial demand (in terms of procurement and application)
  - resistance from established industrial sectors
  - unfavourable public perception of bio-based products and applications
- Do you expect including new PTSO in public, 'green', pre-commercial' innovation procurement?

## Legislation and policy framework

- What would you consider to be the gaps and the barriers in the existing legislation affecting your PTSO? Which is your opinion on the policy and regulatory requirements

affecting the new PTSO or new functionality (standards, safety aspects, labels and certification and REACH legislation)

- Describe the broader exploitation potential of your results in terms of affecting/contributing to policy making and/or uptake
- Have you planned interaction activities or communication and dissemination actions with policy - makers?

## The user's perspective

- Which are the consumers' needs, concerns and perceptions about the PTSO and its application? How do users respond to this market area? Are they familiar with the categories of products? What you think could help raise their awareness and acceptance about them?
- Have you planned interaction activities or communication and dissemination actions with consumer representatives?
- Have you identified any ethical issues regarding the development of the PBB PO? B4. Impact, visibility and exploitation potential of the project/outputs
- Which are the expected impacts of the PTSO on key socio-economic and environmental challenges faced by Europe and its citizens (slow growth, unemployment, low competitiveness, climate change, resource scarcity, etc)? Which are their benefits in terms of sustainability?
- In your opinion, which is the short to medium term impact of your research work?
- Which are the activities taken/planned to increase visibility of your findings? Which are your main dissemination and communication means and activities?
- Which is your target audience beyond project implementation?

## Potential networking activities

- Would you like to be informed in BLOOM collaborative activities (workshops, thematic focus groups, barcamps, etc)? Would you like to take part in any of them?
- Do you give your consent to use this interview as a source of information in our deliverables? Do you agree in including your project in our Bio - Watch platform and other dissemination tools as social media, website, etc?
- How can BLOOM collaborate in the dissemination of your activities and outputs? Do you have any public promotional document (factsheet, leaflet, presentation, video, article, educational or training material, etc) y ou would like to be disseminated through BIOWAYS tools and platform?
- Is there any other project, initiative or representative case study you would like us to be aware of?