



Promoting stakeholder engagement and public awareness
for a participative governance of the European bioeconomy



Proceedings of the BioSTEP Conference

Effective stakeholder and public engagement in the bioeconomy: Good practices, lessons learned and recommendations for future research

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1 Introduction

Over a period of three years, BioSTEP has designed and implemented a wide range of participatory tools to engage citizens and various stakeholder groups in discussions about the future development of Europe's bioeconomy. These tools covered different modes of participation, ranging from education and information activities to intensive stakeholder dialogues and the co-creation of regional bioeconomy roadmaps. The objectives of this [conference](#) were to:

- Present and discuss [practical lessons learned](#) from the application of BioSTEP's participatory tools.
- Discuss how the lessons learned from BioSTEP can inform ongoing and future activities of the EU Bioeconomy Stakeholders Panel and the update of the EU Bioeconomy Strategy and its Action Plan.
- Present and discuss [recommendations for future research](#) that emerged from the application of BioSTEP's participatory tools.

The conference was attended approx. [80 bioeconomy stakeholders](#), including industry representatives, representatives of regional bioeconomy clusters, representatives of non-governmental and civil society organisations, policy-makers, researchers, and consultants. Overall, stakeholders from 17 different Member States participated in the conference; stakeholders from Belgium (as the official seat of many European associations and institutions), Germany and the Netherlands represented the majority of the participants. This conference was the final event of the BioSTEP project.

2 After the review: What's next for the EU Bioeconomy Strategy?

In his [presentation](#), Waldemar Kütt (DG Research & Innovation, European Commission) informed the conference participants about the recently published Roadmap on the update of 2012 Bioeconomy Strategy. The development of the Roadmap has been coordinated by the Secretariat General of the European Commission, whereby DG R&I was responsible for the overall process and other DGs, such as DG AGRI, DG ENV and DG MARE, contributed. The roadmap builds on the review of the Bioeconomy Strategy and aims to step up action to ensure that the bioeconomy provides a long-term balance of social, environmental and economic gains. In particular, it sets up actions to:

- Support strategic research and innovation through the EU.
- Strengthen support for education and training.
- Strengthen and upscale bio-based sectors.
- Mobilise investments.
- Support the creation of markets for novel, innovative and more sustainable and circular bioeconomy products and processes.
- Develop better performance monitoring and assessment frameworks with SMART indicators ("Specific, Measurable, Achievable, Realistic, Timely").
- Encourage the adoption, update and coherence of national and regional Bioeconomy Strategies throughout Europe.
- Strengthen the understanding and resilience of land and sea ecosystems.

According to Waldemar Kütt, the updated strategy will reflect a system-wide approach, which goes beyond research and innovation, addresses trade-offs between the different sectors and aims to enhance circularity and sustainability. The new updated strategy is expected to enter into force by the end of 2018 and will be presented and discussed at a conference on 22 October 2018.

3 Stakeholder and public engagement in the bioeconomy: Messages from the European Bioeconomy Stakeholders Manifesto

In this session, the Chair of the EU Bioeconomy Stakeholders Panel, Joanna Dupont-Inglis (EuropaBio), presented the European Bioeconomy Stakeholders Manifesto. In her talk, she stated that the process of the manifesto was developed by 29 members, from industry, NGO, regional organisations, trade unions, academia and technology platforms. The manifesto was based on building blocks from the 4th Bioeconomy Stakeholders Conference in Utrecht, the Netherlands, under the auspices of the Dutch Presidency. It was developed in a participatory manner by involving a variety of stakeholders through expert interviews, stakeholder meetings, an email consultation and focus groups.

Today, the manifesto is used as a benchmark of current areas of consensus (with reference to the Stakeholder Panel). It lays down guiding principles toward a sustainable bioeconomy, actions to be taken and provides recommendation for EU policy makers and Member States. The paper also outlines opportunities and challenges of developing the bioeconomy further and provides other input and stimuli for Member States and other interested parties.

In addition, Joanna Dupont-Inglis gave some insights into the process of developing the manifesto, which showed the high heterogeneity of views on the priorities of the transition towards the bioeconomy. Different stakeholders see it as either a potential threat or as a potential opportunity (or both). There was considerable debate among the panel members about whether biomass should be considered a limited resource and about the degree to which the Common Agricultural Policy needs to be reformed, modernised or simplified. 26 out of 29 panel members have signed the final version of the manifesto. She concluded the presentation by highlighting that training and dialogue are essential for transforming society.

4 Effective stakeholder and public engagement in the bioeconomy: Lessons learned from BioSTEP

In this session, the lessons learned from BioSTEP were presented along three overarching categories: 'Education and information', 'Stakeholder dialogue' and 'Co-production of knowledge'. Kate Millar (University of Nottingham) from the BioSTEP consortium moderated and chaired this session, while providing some context for the single topics.

4.1 Education and Information

Laura Griestop (BIOCOM) presented the public engagement activities of the project, namely the exhibition of bio-based products and informational material in the Glasgow Science Centre (~ 1,000 visitors), AmbienteParco in Brescia, Italy (~ 1,900 visitors), Fenice Green Energy Park in Padua, Italy (~ 1,040 visitors) and the Historical Museum or Stara Zagora, Bulgaria (~ 200 visitors). These exhibitions gave an opportunity to interact with the broader public and discuss the bioeconomy, which is a difficult policy field to communicate about. The exhibition's visitors valued the "hand-on" approach; the bioeconomy became "tangible".

Social media and the virtual exhibition were also successful in reaching and interacting with both the broader public and experts. In the following discussion, a participant commented that it would be useful to focus on the impacts of the bioeconomy, without using the actual term. This was also the approach of the BioSTEP exhibitions; namely, showing the products and potential beneficial impacts, without diving too deep into the discussion about climate change et cetera in the beginning. Joanna Dupont-Inglis (EuropaBio, Chair of the EU Bioeconomy Stakeholders Panel) highlighted the positive impacts of the exhibitions, before mentioning that in her experience many visitors wanted to buy the presented products immediately. Often, however, these products were still in the pilot stage. Laura Griestop then explained the product mix of the exhibitions, where prototypes from start-ups were combined with products already available in supermarkets.

4.2 Stakeholder dialogue

Zoritz Kiresiewa (Ecologic Institute) presented the process and the results of BioSTEP's stakeholder dialogue, which consisted of an in-depth analysis of participatory processes supporting national and regional strategies, an EU-wide online stakeholder consultation, three regional policy workshops at the European, national and regional level, and a stakeholder conference (BioSTEP Forum). Eighty-five expert interviews, a citizen survey and a series of regional validation meetings were undertaken.

This assessment led to the following conclusions:

- An online survey can be an effective tool to engage with stakeholders, especially with researchers and business associations, and to a lesser extent with NGOs/CSOs.
- Consultations conducted in the early stages of a project can produce stakeholder interest that results in further involvement in the project's later stages.
- The local "culture of participation" matters and should be taken into account in the development and application of engagement tools.
- Successful stakeholder engagement requires tailoring engagement activities to the national/regional context, e.g. to existing policy debates or strategies.
- It is crucial to show the added value of participatory activities for stakeholders, e.g. by ensuring the policy relevance of events (workshops, conferences).
- It is challenging to engage with CSOs/NGOs and individual businesses. Thus, there is a need for strong and targeted mobilisation efforts (e.g. direct invitations, cost takeover).
- Formal evaluation processes (e.g. forms) of events do not always produce useful information; discussing informally with participants can sometimes yield more useful feedback.

The discussion afterwards focused on the role of the media as a key stakeholder. In BioSTEP, the media was not targeted as a stakeholder, but was engaged by the project's communication efforts. It was further mentioned that the aim of a consultation should be made clear, as well as the personal benefits that participants stand to gain from the consultation process. Regarding the involvement of civil society (organisations) in debates about the future development of the bioeconomy, Holger Gerdes (Ecologic Institute) pointed out that many actors – beyond environmental NGOs – at the regional level in particular do not yet know that they, too, have a stake in the discussion. This raises important questions with regard to the design and implementation of a stakeholder mapping exercise that precedes any stakeholder engagement activity.

4.3 Co-production of knowledge

Filippo Mazzariol (Unioncamere Veneto) described the organisation and outcomes of the BioSTEP living labs, which were undertaken in Veneto (Italy) and Stara Zagora (Bulgaria). These living labs joined very heterogeneous actors to co-create knowledge in various phases, such as brainstorming, concept mapping, nominal group techniques, strategic community planning, pilot action, and developing drafts of strategic policies. In total, almost 100 participants from different sectors (food, pharmaceuticals, energy, etc.) attended 14 individual living lab meetings in the two regions.

The BioSTEP experience showed that the living lab approach allows for the organisation of an effective bottom-up process to develop regional strategies, such as bioeconomy strategies. The process is time and resource intensive. However, the upside is that once the output is finalised (such as a regional strategy), the new relationships between the different actors are more established than they would have been after a one-time consultation.

During the discussion, one conference participant highlighted the importance of green public procurement as a way to promote bio-based products. It was also highlighted that it may be good to link processes, such as living labs, to industry, since it has the means to support such initiatives. It is also necessary to transfer knowledge between the different regional communities.

Martin Stoyanov (Bulgarian Industrial Association) gave some insights into the living lab process in Bulgaria and concluded that living labs are a useful tool to develop bottom-up approaches. In the case of Stara Zagora, however, the regional authority did not attend the relevant meetings. This lack of

commitment could have been avoided by raising awareness about the bioeconomy and its regional potentials before the start of the living lab process (e.g. by organising the BioSTEP exhibition with bio-based products at a slightly earlier stage).

Concluding remarks

Holger Gerdes (Ecologic Institute) concluded the session by pointing out that a strict differentiation between the three modes of participation (education & information, stakeholder dialogue, co-production of knowledge) might be difficult in practice, particularly as concerns the latter two modes of participation. He highlighted that in order to qualify for “co-production of knowledge”, two aspects should be taken into account: that stakeholders are part of a medium to long-term participatory process consisting of numerous consecutive meetings, and that there is continuous involvement and commitment of a key stakeholder (e.g. a public agency or cluster organisation) who is willing and able to implement the formulated actions or strategies.

5 The future research & innovation agenda: Priorities of the EU Bioeconomy Stakeholders Panel

In her [presentation](#), Christine Bunthof (Wageningen UR, Member of the EU Bioeconomy Stakeholders Panel) stated that the panel process was undertaken with the help of open calls for members in 2013 and 2016. Besides the development of the manifesto, the panel formed action groups on the circular economy, awareness raising, regions and education & training. Christine Bunthof highlighted that R&I are cornerstones for transition and that there is a need for new concepts, processes and products. She pointed out that research and innovation priorities should focus on the potential of natural resources, the impact on ecosystems and societal transition; these areas have also been translated into key guiding principles in the manifesto. According to Christine Bunthof, new business models as well as new community models need to be developed to enable the transition to a bio-based economy.

6 Effective stakeholder and public engagement in the bioeconomy: BioSTEP’s recommendations for future research

Rainer Janssen (WIP Renewable Energies) opened the final part of the BioSTEP conference by highlighting the importance of concepts such as the bioeconomy for building a better future, and moderated the session in which the following recommendations were [presented](#):

6.1 Recommendation 1: Integrating priorities of civil society into bioeconomy research agendas

Elaborating research agendas jointly with civil society organisations (CSOs) potentially fosters the inclusion of societal knowledge, democratizing research programs and enhanced engagement with actors from civil society.

Greet Overbeck (Wageningen UR) explained how mission-driven CSOs can be included more effectively into R&I policymaking by involving them in significant roles (e.g. agenda setting or proposal evaluation), emphasizing the societal impacts of the program and funding smaller projects (to reduce entry barriers). Hence, not all of the recommended actions require significant resources.

6.2 Recommendation 2: Developing and testing models for co-creation in the bioeconomy

The importance of public engagement is increasingly recognised. However, many engagement strategies focus on the “lower steps” of the engagement ladder, such as dissemination activities and dialogue

formats. These are important, but only as a foundation to organize co-creation processes, where stakeholders and the public are embedded, empowered and involved to a significant extent. This co-creation potentially goes beyond awareness raising to enhance public ownership and socially robust product development as well as a greater understanding of the bioscience innovation process.

Kate Millar (University of Nottingham) explained how such co-creation could be fostered. In order to integrate society's knowledge and to co-develop new ideas, it is necessary to "leave" the laboratories and other formal research and development spaces. Besides building the tools that are necessary for co-creation, it is crucial to also provide (physical) spaces where people can meet, connect and build. These spaces could be supported, and the required tools could be catalogued, preferably on an open-access platform.

6.3 Recommendation 3: Communicating complex topics about the bioeconomy to the general public

Public awareness and knowledge about bio-based products is still very limited. In order to inform the public as consumers, enhance their decision making, and facilitate their engagement with a broader public in the bioeconomy, communication is crucial.

With respect to the challenge of communicating complex concepts like the bioeconomy, Boris Mannhardt (BIOCOM) highlighted the success of the exhibitions, which were able to reach a total of 4,000 people. Thus, the addressed audience did interact but limited in its number – considering that there are 500 million European citizens. In order to reach more people and more spheres of the public, new communication tools are needed. These should be prototyped and evaluated in order to identify the best communication tool for the respective communication goal.

6.4 Recommendation 4: Analysing the regional transition to the bioeconomy

The growth of the bioeconomy varies significantly within and across European countries, which can be partly explained by an increasing disparity in productivity within the OECD countries. In order to accelerate the respective local transitions to a sustainable bioeconomy, building networks on the foundation of relationships is crucial. These relationships are, for example, necessary to build new bio-based value chains or coordinate the joint efforts of a regional community.

Sara Davies (EPRC) explained that one challenge of building bioeconomy networks is bringing actors who previously had no need or opportunity to communicate into contact. In the end, building these linkages could improve evidence-based policy making (e.g. cohesion policy and EU rural development policy), regional strategies, and the allocation of funding to and development of marginalized regions.

6.5 Recommendation 5: Ensuring responsible research & inclusive innovation in the bioeconomy

Today, policymakers are increasingly discussing the need to define responsibility in bioeconomy innovation processes. Sustainability assessments and mapping tools are available. However, more information is needed on the scope, tools and approaches to integrate this knowledge. At the same time, science and innovation policy needs to meet public expectations with respect to the uptake of societal knowledge and the way in which science itself is conducted.

Kate Millar (University of Nottingham) explained the Responsible Research and Innovation (RRI) concept. The European Commission H2020 RRI strategy defines several key themes, such as engagement, policy, gender equality, science education, open access, ethics and governance. New funding schemes and research processes should embed these RRI key themes in the development and implementation stages.

Integrating these RRI core themes has the potential to enhance the understanding of social, economic and environmental impacts and knowledge about uncertainty. Embedding the RRI principles can also enhance transparency in bio-based technology assessments and democratize science. The understanding of social, environmental and economic impacts would thereby be improved, which could lead to a socially robust development of products and ethically informed investments into the bioeconomy.

Voting

After the presentation of the five research recommendations, the conference participants were invited to vote on what they consider the most important and the second most important research recommendation. The results are displayed below:

- Voting round #1 - Please choose your most important Research Recommendation

	Responses	
	Percent	Count
Integrating priorities of civil society into bioeconomy research agendas	29,41%	15
Developing and testing models for co-creation in the bioeconomy	3,92%	2
Communicating complex topics of the bio-economy to the general public	39,22%	20
Analysing the regional transition to the bioeconomy	23,53%	12
Ensuring responsible research and inclusive innovation in the bioeconomy	3,92%	2
Total	100%	51

- Voting round #2 - Please choose your 2nd most important Research Recommendation

	Responses	
	Percent	Count
Integrating priorities of civil society into bioeconomy research agendas	16,67%	9
Developing and testing models for co-creation in the bioeconomy	12,96%	7
Communicating complex topics of the bio-economy to the general public	22,22%	12
Analysing the regional transition to the bioeconomy	24,07%	13
Ensuring responsible research and inclusive innovation in the bioeconomy	24,07%	13
Total	100%	54

Open discussion

One conference participant highlighted the increasing importance of services in the creation of value in today's economy, a trend called 'servicification' by the OECD. This participant suspected that many services related to the bioeconomy could be integrated into bioeconomy research and strategies.

Another participant highlighted that participatory approaches are suitable for reaching a narrow target group; to reach more people, however, mass media would be needed. At the same time, it seems that media outlets are not interested in regional and small projects, but in national approaches where credible sources for data can be found. Within the BioSTEP project, the media were not defined as single stakeholder group. Rather, the media were addressed within all the actions that targeted broader publics. Kate Millar (University of Nottingham) also highlighted that there are many different levels and business models in the media landscape. For some of them, regional or local lighthouse projects also are interesting. Holger Gerdes (Ecologic Institute) added that regional case studies might very well have an impact beyond their regional boundaries; however, it needs to be ensured that the knowledge generated is summarized and prepared in a way that facilitates take-up elsewhere.

7 Closing remarks

Picking up on the previous discussion, Joanna Dupont-Inglis (EuropaBio) mentioned that media is an important stakeholder but that we should also take new communication channels into account, as the younger generation rarely reads newspapers or magazines. Thus, there is a need to use more innovative, new channels for communication in order to reach out to a large number of stakeholders and citizens. She concluded that she will summarize the outcomes of the BioSTEP conference at the regular meeting of the EU Bioeconomy Stakeholders Panel on the following day and that the panel will take up BioSTEP's results in the further development of the manifesto. Georgios Kastrinos (DG Research & Innovation, European Commission) stated that BioSTEP came at a perfect time with regard to the bioeconomy strategy development process. BioSTEP and this conference showed that it is challenging but feasible to bring diverging interests together. Holger Gerdes and Zoritzia Kiresiewa (Ecologic Institute) thanked all participants for sharing their experiences and for the fruitful discussion. They expressed special thanks to Georgios Kastrinos and Gabriela Hausmann, who supported the organization of this conference.