

Raising societal awareness: The role of bioeconomy narratives

Executive summary

Citation: *You will stir up little controversy by asserting that human beings are story-telling animals.....We are thus, in a sense, homo narrans, and there is something about story-or-narrative that feels uniquely human*

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Why is there today a rather broad public awareness for CLIMATE CHANGE (the problem) but relatively little awareness for BIOECONOMY, a potential remedy to mitigate climate change (i.e. [part of] a solution)?

With this workshop, the graduate program BBW ForWerts (launched in 2014) has pursued its goal to turn its interdisciplinarily trained graduate students into ambassadors for bioeconomy. The goal is to expand their individual, specialized expertise towards a broader perspectives, reflecting the complexity of a profound socioeconomic transition towards a sustainable bioeconomy.

During this workshop, an experienced science journalist, Dagmar Röhrlich has explored the question “How is *bioeconomy* perceived in today’s media?” Thereafter, Dr. Alexandru Giurca, a staff scientist at Freiburg University working on bioeconomy issues of forestry, addressed the question how different storylines shape the bioeconomy discourse in today’s forestry. Finally, Prof. Dr. Jale Tosun, a political scientist from Heidelberg University presented her results of an exploratory study on how bioeconomy enters (or not) the rural world. Her talk focused on regional and state-based differentiation and the way key stakeholders of agriculture (e.g. farmer associations) address (or not) their role in bioeconomy implementation in the public discourse.

Dagmar Röhrlich gave different examples of public media discourse on bioeconomy, where she could demonstrate that the involved actors (stakeholders) generally assume a lot of prior knowledge, make extensive use of buzz words, and thereby leave the topic bioeconomy as a rather vague and ill-defined concept. Here, the BMBF-launched Science Year BIOECONOMY 2020/21 has as yet not made a big difference. Obviously, communicating the concept of bioeconomy poses a number of challenges. Importantly, concept focus largely depends on whether bioeconomy is regarded as a strategy for sustainable development or as a new paradigm for economic growth when fossil resources are running out. Thus, in the business pages of today’s media bioeconomy is often communicated as a mixture of innovative biotechnology and successful start-up companies. In her presentation, Dagmar Röhrlich emphasized two aspects for successfully increasing public acceptance: First, the need to further clarify “What we talk about when we talk about bioeconomy”, and second, the need to use creative language, including easy to grasp analogies and metaphors, when aiming to wake the public interest. In particular, the element of surprise may have strong impact.

In the following discussion, Jale Tosun challenged the need for broad societal acceptance of the bioeconomy concept, emphasizing that rather consumer acceptance of bioeconomy-based products is of higher importance. She argued that after top-down setting of a bioeconomy agenda, working on its societal acceptance is of lesser importance. This point was critically discussed and other participants insisted on the need for acceptance of sustainability-based values by the consumers, as “products” are mostly not “neutral” but also associated with values.

In the subsequent talk, Dr. Alexandru Giurca gave an illuminating overview on sequential societal meta discourses during the past 60 years, i.e. from modernity (“60ties”) to limits of growth, from ecological modernization to sustainable development (today). While emphasizing bioeconomy not primarily as a techno-scientific but rather as a political project, he then addressed social science-related issues like conflicting interests and power struggle, eventually yielding winners and losers of the anticipated socio-economic transition. With respect to different concepts of bioeconomy, Dr. Giurca described three different types: Bioeconomy as i) an ecological economy as proposed by the economist Georgescu-Roegen in in 70ties, ii) a science-based economy driven by industrial biotechnology (OECD, 2009, 2017), and iii) a biomass-based economy (EC, 2012, 2018). He then quoted from the recent book of Kate Raworth (Doughnut Economics, 2018) to explain the possible need for re-framing the economy, i.e. “choosing or creating [an economy] that best serves our purpose, reflecting today’s context, the values we hold and the aims we have”. In the second part of his talk, Dr. Giurca described the network and perspectives (and story lines) of different actors in today’s forestry and current concepts for a forest-based bioeconomy. In particular, he exposed differing objectives and angles of understanding: Forest-based, wood-based or lignocellulose-based.

The subsequent discussion addressed the complexity of stakeholders involved in forest-based bioeconomy and the requirement for their proper alignment for bioeconomy implementation. Also, motivated by raising the issue of winners and losers, the impact of vested economic/financial interests was brought up, causing preference for different story lines among different actor groups. Finally, the aspect of sustainability came again under scrutiny (short/mid/long term sustainability).

In the final talk, Prof. Dr. Jale Tosun presented a work-in-progress study on a rural perspective on bioeconomy. The focus was on regional differentiation with respect to today’s German bioeconomy strategies in the different states. The need for this region-specific approach was substantiated by qualitative assessments of numbers and sizes of farms at regional level. Only the state of Baden-Württemberg has already explicit research and political strategies for implementing bioeconomy, whereas in Bavaria it is still in preparation. Prof. Tosun then presented her current perception of the role and activities of regional farmer associations with respect to bioeconomy. It appears that while acting as potent lobby groups at regional, state and federal level, farmer associations do at present little to address the relevance of bioeconomy implementation in public. Apparently, bioeconomy has not yet “arrived” in their public discourse, however, that does not exclude that during “silent” lobby work this topic is already on the agenda.

In the discussion, the question was raised how EU agricultural subsidy policy impacts on regional implementation of bioeconomy. While the EU has been trying to reform its agricultural policy for years, the most recent decisions indicate that it remains a most contentious issue, with member states, lobby groups and environmentalists all trying to sway the debate. Thus, current EU policy is not (yet) an effective lever for promoting bioeconomy among German farmer associations.

In the subsequent group work, PhD students of the bioeconomy graduate program BBW ForWerts developed their own ideas for initiatives to raise the awareness for bioeconomy in the broader public.

One of the proposals aimed to promote the **UNDERSTANDING THE BIOECONOMY**. This group argued that at present “Bioeconomy” is – and is perceived as – a top-down government-driven project, without clear definition of the fundamental concept, and often appears out-of-context with respect to people’s daily life. Boundaries of its concept have often remained fuzzy. Thus, advertised explanations sound like a panacea: Promised are climate change mitigation, sustainable development, rural development, protection of biodiversity, and societal transformation. This student group proposed to understand bioeconomy rather as a **BRIDGING FUNCTION**: Not single activities like agriculture, forestry or aquaculture *per se*, but understanding bioeconomy as a strategy to link between these branches: The goal should be to develop priorities based on a set of principles (e.g. regeneration of renewable natural goods, substitution of non-renewable natural goods, release of materials not exceeding adaptability of ecosystems). The students argued, that the concept of bioeconomy needs to be sharpened *via* a multi-stakeholder consultation process, taking into account regional/national priorities. Ideally, this exchange between stakeholders should result in co-creation processes. The proposed communication concept – running under the title UNDERSTANDING THE BIOECONOMY - aims to promote the dialogue with the general public by including non-academic stakeholders (such as biomass producers, processing industries and consumers) and by deliberately choosing a non-technical language. This concept should be implemented on-site, should set context-dependent priorities and lead to co-creation of a concept tailored to clearly defined needs.

A second group emphasized the **role of consumers** under the motto **BIOECONOMY? NEEDS YOU!** Consumers should be initially shocked with a visual demonstration of where our globe is heading if we do not change path (wake-up call). With this starting point, bioeconomy should then be presented as (contributing to) a **SOLUTION**, via explaining recycling concepts, use of renewable resources and zero-waste production. Concrete examples should be given to communicate the basic concept. Bioeconomy should be explained as a transformation process, involving “cool” innovation and usage of untapped potentials. While it is admitted that there still is a long way to go, the consumers are motivated to lead the way and choose the path. It was postulated that without pull from the consumers, industry and politics will not go ahead. The students argued that it is the **consumer choices** which **shape markets and promote innovation**, and thereby the future. Communication should particularly address the younger generation (education is key!), using a broad set of media.

The third group developed a bioeconomy narrative dedicated to the **farming sector**, with a focus on **presently unused agricultural residues/waste streams**. Based on an easy-to-communicate data (e.g. 4.6 billion tons agricultural residues/year, no competition for food or feed!), this group phrased a convincing rationale for making smart use of these untapped resources. Proposed are not only the **conversion to syngas, bio-oil and bio-char**, but also **valorization** of these residues towards new materials via **biorefineries**, including bacterial/biochemical conversion.

The fourth group developed a communication concept for primary school teachers with a specific focus on the **concept of WASTE**. Starting from the assessment that children at school usually learn that waste is bad for the environment and that its sorting is required for recycling, a **changed** (presently “utopian”) **WASTE NARRATIVE** is proposed: Waste is not bad, it is a part of nature...if you produce it the right way! Thus, the belief that waste is something bad should be changed, it should be demonstrated that life is more comfortable with biodegradable products making waste collection and treatment much easier. This group developed the idea of a **banana ice cream camp** (excursion format): From fruit collection to ice cream preparation, to enjoying ice cream, and ending with composting biodegradable cups and spoons for gardening.

In summary, for improving societal communication and discourse on bioeconomy, the group work emphasized the need to

- use non-technical language
- provide context *via* regional focus
- promote broad stakeholder involvement (co–creation)
- involve with high priority the consumers
- address individual target groups, starting at youngest age.

In general, it was felt that the Science Year 2020/2021 on Bioeconomy has not yet lived up to its promises.

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