University of Stuttgart
Institute for Social Sciences
Sociology of Technology and Environment

Paradoxical Attitudes towards Bioeconomy in the German TechnikRadar Survey 2020

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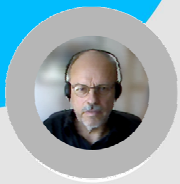


What is Bioeconomy?

- Bioeconomy is a promising comprehensive strategy to solve urgent problems

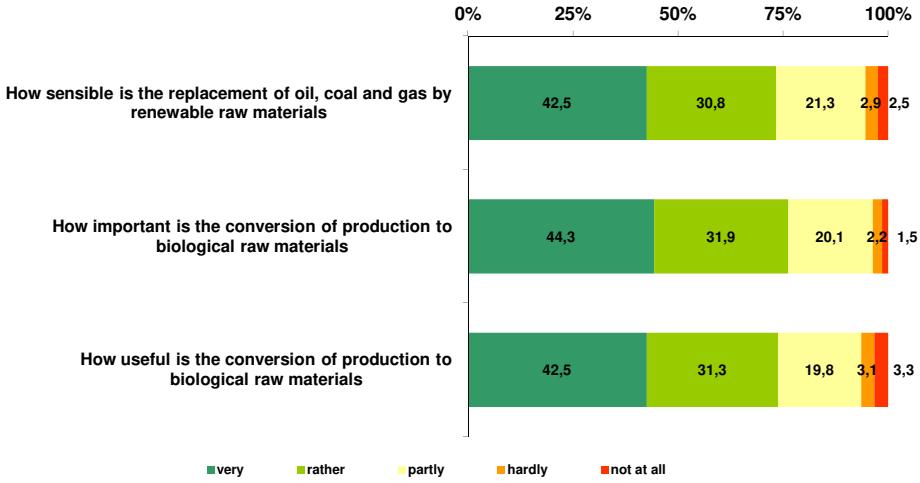
1. Besides closed material cycles and a cascade use of products, its main concern is to replace fossil resources – oil, gas, coal – with renewable, biological raw materials to make energy supply and production sustainable, to counteract resource depletion and the climate change.
2. By use of biological knowledge (esp. genetic engineering) it promises the solution of agricultural – e.g. plant breeding –, nutritional – e.g. synthetic meat – or medical problems – e.g. genetic therapy; xenotransplantation; synthetic organs.

Bioeconomy

- “What does the German public think about bioeconomy in general and its applications?”
- Main issue of the TechnikRadar 2020, a representative opinion poll of the German resident population over 16 years of age (n = 2.006)
- Presentation of some key findings, particularly attitudes towards general principles and actual applications of bioeconomy, using examples of bioplastics and biofuels (2nd gen.)

Report (in German) available at:
www.koerber-stiftung.de/technikradar/2020

Replacement of Fossil by Biological Resources

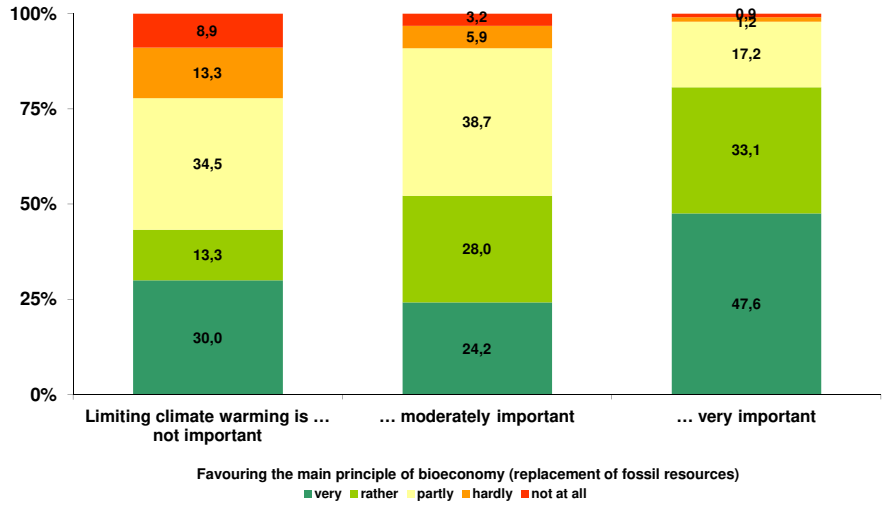


TechnikRadar 2020 (N = 2.006)

Strong Support for the main Strategy of Bioeconomy

- More than 70% of the Germans consider the use of biological instead of fossil raw materials to be sensible, important and useful
- The vast majority of Germans favours the main strategy of the bioeconomy
- The preference to replace fossil with biological resources varies almost not with socio-demographic or socio-economic characteristics but considerably with an environmental value orientation (→ next chart)
- The importance of limiting climate change is considerably associated with the preference for the bioeconomy

Replacement of Fossil by Biological Resources



TechnikRadar 2020 (N = 2.006; Gamma = 0,47***)

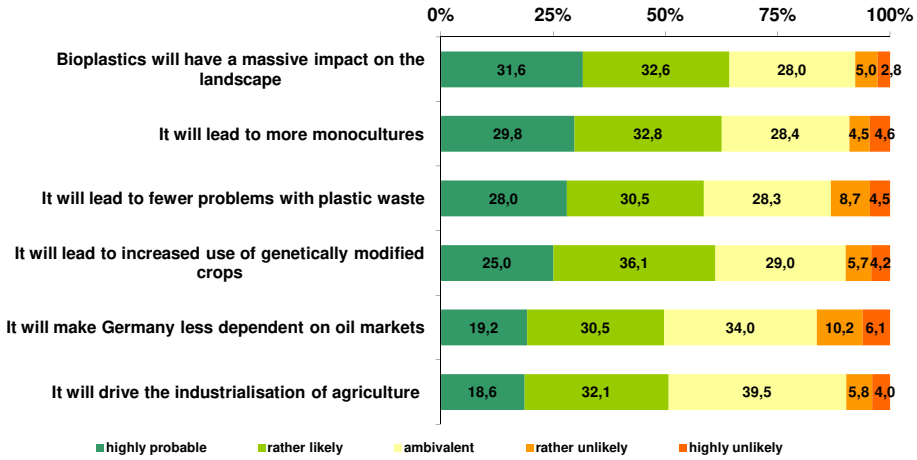
Applications of Bioeconomy: Bioplastics

- Question in the TechnikRadar Survey:

  "For the production of plastics, renewable raw materials are increasingly being used instead of oil, for example from corn or wood. How likely do you think the impacts mentioned below are to occur during the production of such bioplastics?“ (→ next chart)

- Instead of enthusiasm, we find highly ambivalent expectations: weak optimism and the fear of serious side effects

The Assessment of Bioplastics and its Impacts



TechnikRadar 2020 (N = 2.006)

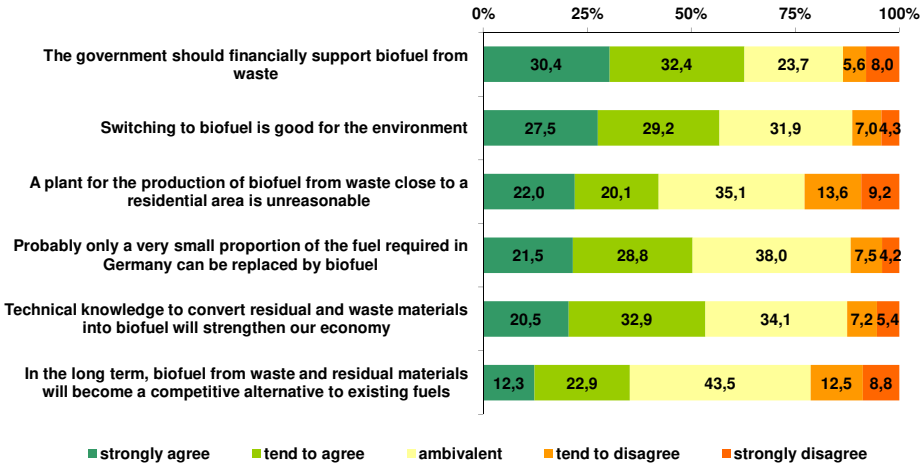
Applications of Bioeconomy: Biofuels (2nd gen.)

- Question in the TechnikRadar Survey:

  "Politicians intend to partially replace crude oil-based fuels with biological fuels, so-called biofuels. These biofuels of the second generation can be produced from residual and waste materials such as liquid manure, waste wood, compost or even waste from the catering industry. Please tell me to what extent you agree or disagree to the following statements".
  (→ next chart)

- In theory, this is considered a good thing worth promoting, but its use in practice is viewed with scepticism, because in Germany it will fail due to a lack of raw materials and competitiveness.

The Assessment of Biofuels (2nd gen.) and its Impacts



TechnikRadar 2020 (N = 2.006)

Perception and Valuation of Bioeconomy – an Interim Conclusion

1. When new technologies appear, industry, politics and the mass media often communicate the over-optimistic image of a patent solution to certain problems – as in the case of the bioeconomy.

   Thus, it is hardly surprising that global judgements about technology differ significantly from the multi-item-scale questioning of specific applications and naming specific properties and consequences of technology.

   From a **methodological** perspective, multi-item-scales evoke more nuanced judgments, but may frame the corresponding technology in a certain way.

   Technology, by its very nature, is ambiguous: Political decisions on technology must not be based on global judgements in opinion polls – they require objective and project-related discourse and the participation of people particularly affected by the different consequences.

Perception and Valuation of Bioeconomy – an Interim Conclusion

2. From a **theoretical** point of view, ideas of nature and environment might influence the valuation of bioeconomy on one hand and its applications on the other hand.

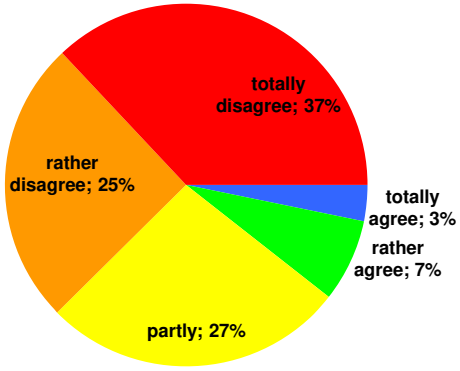
   Regarding environment-related projects – e.g. water or wind power plants, nature reserves – in Germany we experience hard conflicts between people who favour untouched *nature* and those who prefer *environment* understood as a resource to be managed sustainably (e.g. Kropp 2002; Gill 2003)

   The TechnikRadar shows that a broad majority of Germans prefer untouched nature and only a minority supports its use as a resource.

   The bioeconomy aims at the consistent and comprehensive transformation of nature into a societal resource. We therefore expect the acceptability of their applications to be greater among people with environmental preferences than among people who favour pristine nature.

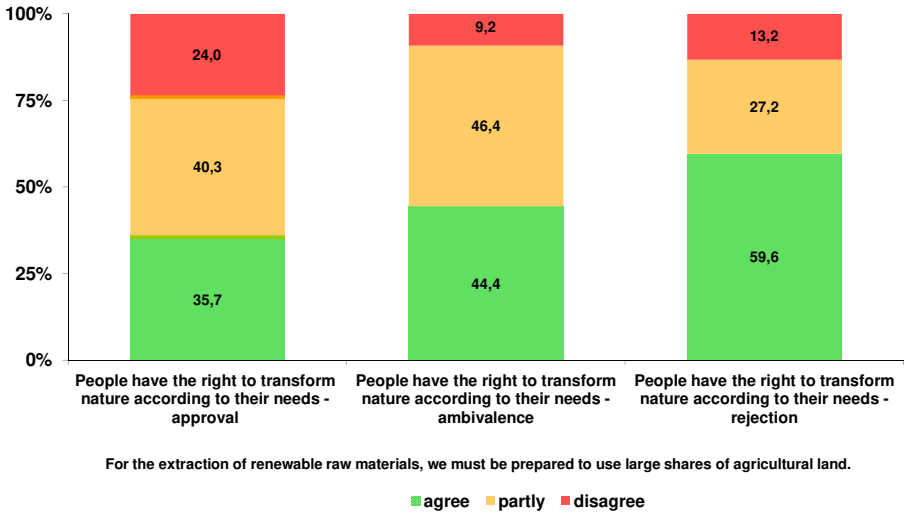
Preferences for Nature or Environment?

"People have the right to reshape nature according to their needs"



TechnikRadar 2020 (N = 2.006)

Valuation of Bioeconomy by Images of Nature



TechnikRadar 2020 (N = 2.006; Gamma = 0,28***)

Perception and Valuation of Bioeconomy – Conclusion

In the German public there is little agreement to the transformation of nature into a resource according to societal needs.

The acceptability of bioeconomy is limited by an understanding of nature that is potentially specific for the German public.

Appendix

Download

A free copy of the TechnikRadar 2020 report (in German) may be downloaded from:
http://www.koerber-stiftung.de/technikradar/2020

This presentation can be downloaded from: http://michaelmzwick.de/lectured.htm

References

Gill, B. 2003: Streitfall Natur. Weltbilder in Technik- und Umweltkonflikten, Wiesbaden.

Kropp, C. 2002: Natur, Opladen.

Pictures

Chart no. 2: Nilov: https://www.pexels.com/de-de/foto/mann-person-menschen-frau-8851720/ / (free license)

Chart no. 3: Körber-Stiftung & acatech; photo: Zwick

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Chart no. 12: Zwick

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„Thank you for your interest"

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