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Deconstructing the policy discourse: Contending visions of the bio-based economy

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Background

- Increasing interest in innovation studies towards grand challenges and transitions (i.e. from internal system dynamics to system shift) (Geels 2002)
- System transformations a) open ended, b) constantly redefined and renegotiated c) across many stakeholders (Kuhlmann & Rip 2014)
- Need for “opening up” decision-making processes (Stirling, 2008)
- System transformation and directionality (Weber & Rohracher 2012)
- Research gap: improve the understanding of the politics and policies of transitions (Markard, Raven & Truffer 2012)

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Research aims:

- Improve our understanding of diverse rationales in system change by exploring its inherent and diverse interests
- Reveal different visions and contending rationales of diverse actors engaged in the emerging policy discourse on the bioeconomy
- Use three different bioeconomy visions to distinguish the:
  - a) actors involved in shaping the direction of the new bio-based economy and
  - b) to analyse their positions towards this emerging field

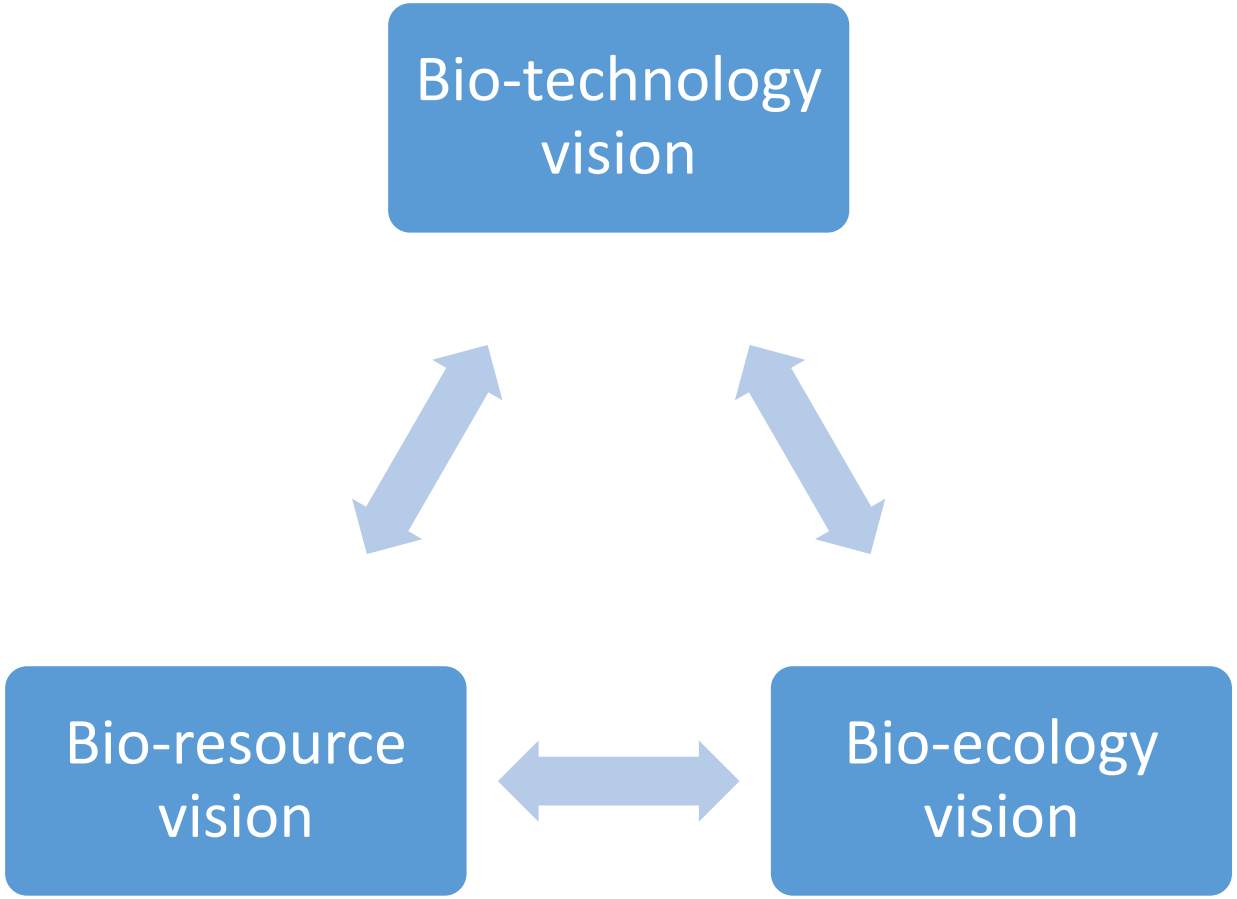
Research design and data

Discourse analysis:

- Recent national public inquiry process for a bioeconomy strategy in Norway
- The public inquiry was initiated by the Ministry of Trade, Industry and Fisheries and the Ministry of Food and Agriculture in 2015
- Aim of the strategy “to identify overall priorities for a national strategy for the bioeconomy and formulate goals and instruments in a long term perspective”
- The public inquiry material comprise 41 written submissions from different types of stakeholders
- The submissions were categorised by actor groups and sectors and coded according to predefined ideal bioeconomy visions (Bugge, Hansen, Klitkou, 2016) and a corresponding set of sub-topics

Three interrelated visions of the bioeconomy

(Bugge, Hansen and Klitkou, 2016)



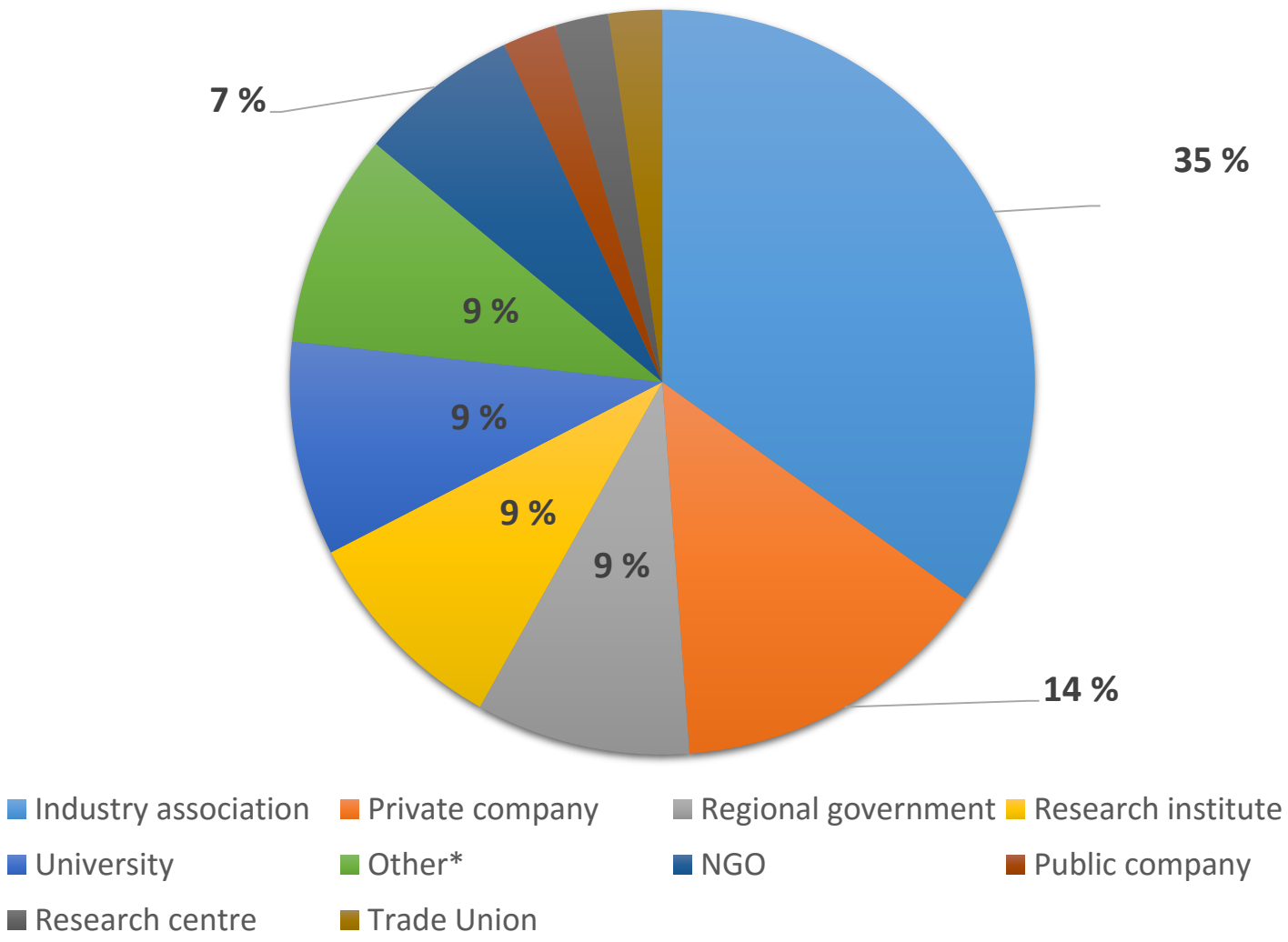
Category system used in the discourse analysis

Category	Sub-topics
Bio-technology vision	• Biotechnology research • Life sciences • Skills and competences • Commercialisation of R&D
Bio-resource vision	• RD&D related to agriculture, forestry, bioenergy and new biobased materials • Establishment of new value chains • Resource management • Waste management • Conversion technologies
Bio-ecology vision	• Sustainability • Resource preservation • Ecosystem services • Recycling

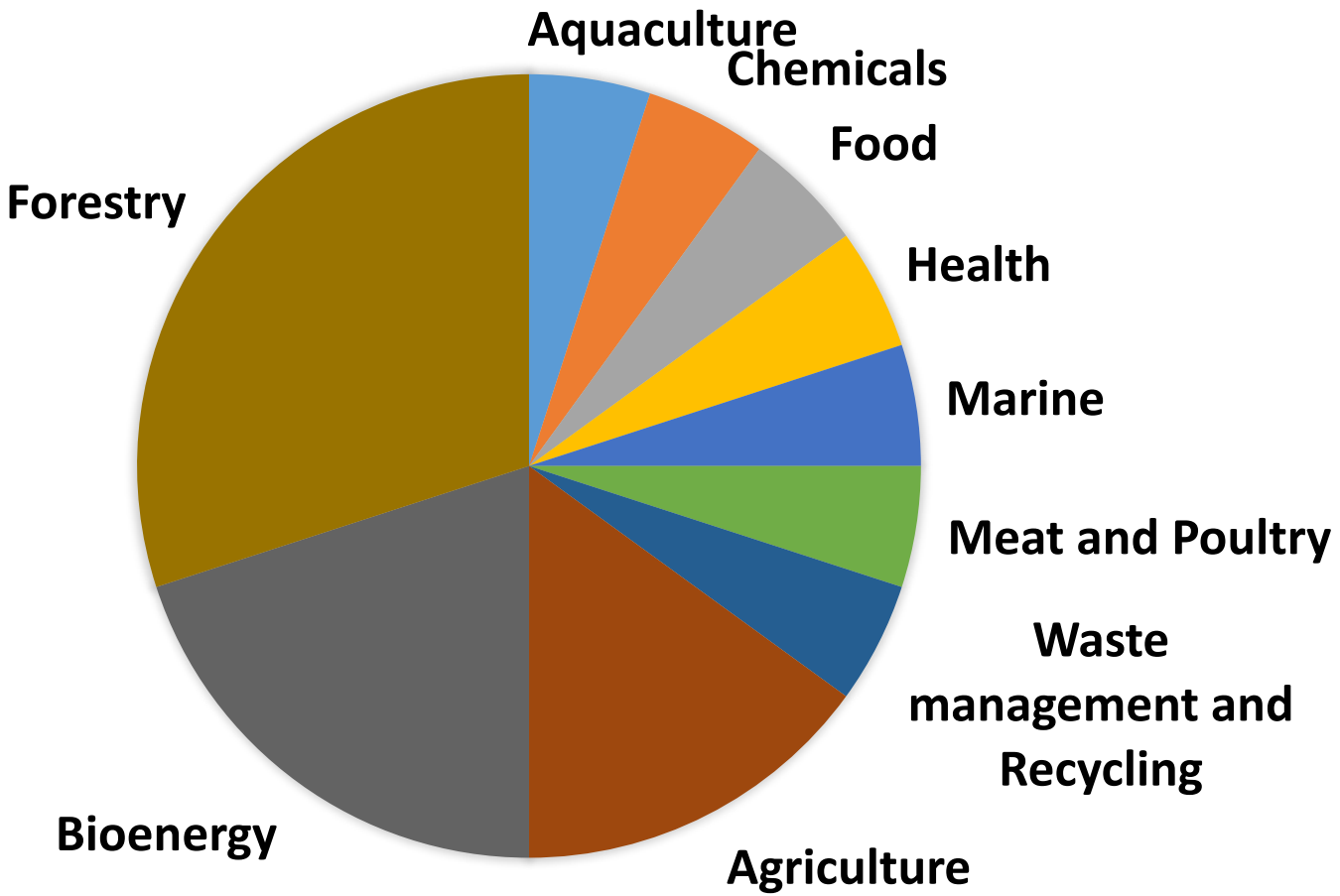
Norway, a strong resource-based economy

- Resource-based industries account for 80-90 % of exports (petroleum, aquaculture and forestry)
- Sea-food the largest bio-based export product
- Forestry has lost most of its market share
- Agricultural products for domestic market protected from foreign import
- Dynamic interplay between enabling sectors and the natural resource industries define the working of the Norwegian bio-economy
- The natural resource industries and enabling sectors can be described as the prime carriers and promoters of the three bioeconomy visions described above
- They comprise the core of the Norwegian bioeconomy and the policy positions they advocate largely reflect their position within the wider Norwegian economy

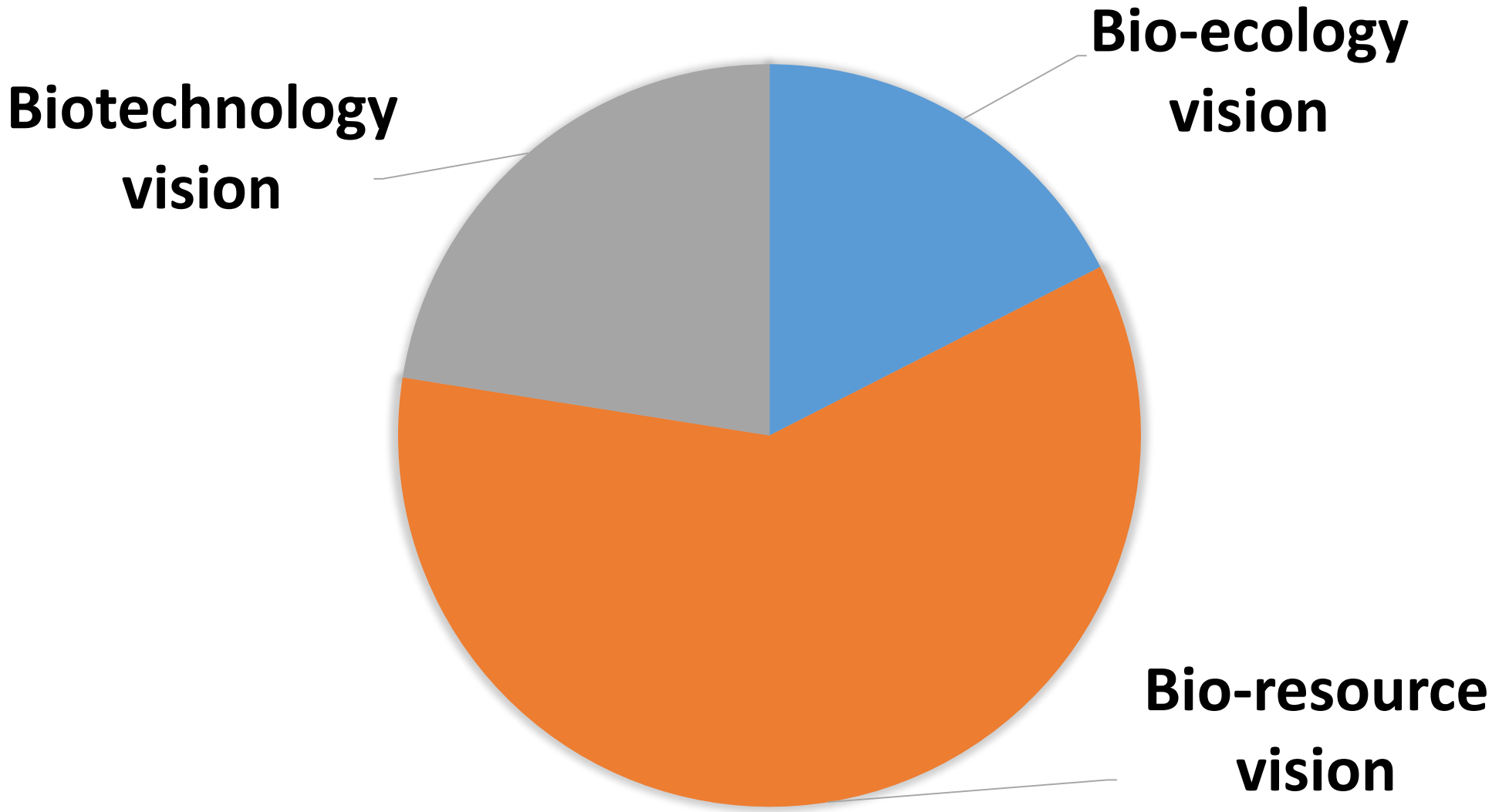
Empirical material: 41 submissions to public inquiry, 2015



Large heterogeneity of industrial sectors



Discourse dominated by the bio-resource vision



Exemplary quotes on the biotechnology vision

“Medical and health related biotechnology need to be a part of the national bioeconomy strategy. New technology based on gen and biotechnology has the potential to bring us large opportunities for treatment and prevention of diseases, and at the same time create new business opportunities”. […] “The market for biotechnology products is large and will become even larger in the years to come” (Industry Association)

Exemplary quotes on the biotechnology vision

“microbal biotechnology is a decisive research field if Norway is to develop economically sustainable and competitive bioprocesses based on Norwegian biomass in the future. Such investment will contribute to increased industrial activity and create new jobs within the bioeconomy” (University).

Exemplary quotes on the bio-resource vision

“Bioenergy will be part of the bioeconomy. It is important that stationary bioenergy and 2G biofuels are amongst the building blocks in a Norwegian bioeconomy strategy.”… “ forest resources are the best raw material for biofuels”… “Biofuels will increase the value creation from the forest by inverting the export of timber and will strengthening the wood manufacturing industry in general” (Energy company).

Exemplary quotes on the bio-resource vision

“There is enormous potential to produce food and products from the sea…”[…] “ We need to find alternative products that can exploit forest resources”.[…] “ The solutions build on combining known technologies, but the challenges are related to both technology and profitability”. (Industry Association)

Exemplary quotes on the bio-ecology vision

“There are several opportunities for R&D and business development within an increased investment in the bioeconomy, but it requires a holistic perspective on the limitations that exist with regards to the exploitation of raw materials, the quantity of accessible raw material, the need to stop the loss of biodiversity, preservation of landscape qualities, recreational life and other interests in the same areas, and the reel consequences of climate change” (NGO)

Exemplary quotes on the bio-ecology vision

“If the forest is to contribute with biomass resources to more than a small part of the potential application areas, much more needs to be harvested than just the forest waste (GROT). And this fact must make us listen to the alarm signals: What implications will this have on biodiversity and recreation? What are the implications for the climate and carbon storage function of the forest?” …”

Summary of empirical findings

- Diversity of actors, interests and logics (potential conflicts and tentions)
- Predominant focus on exploitation of bio-resources: Policy discourse thus reflecting the features of the national economy
- Discourse dominated by private actors within forestry and bioenergy (challenge: fragmented value chains and industry in decline)
- Strong linkages between bio-technology and bio-resource visions
- Bio-ecology vision represents a contending alternative, brings in the issues of sustainability into the bioeconomy discourse

Conclusions

- The contending visions observed illustrate how socio-technical transitions often comprise negotiations and power struggles
- Policy strategy on the bio-economy needs to balance the relationship between bioeconomy and sustainability (environmental and social)
- Such balance between visions may hamper directionality in system change

Thank you for your attention!

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