Open-BIO
Survey Results on the acceptance of bio-based products

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Open-BIO

Opening bio-based markets via standards, labelling and procurement

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WP9: Social Acceptance
2-stage research approach on three target groups

Acceptance of bio-based products

- Business
  - Expert Survey Delphi Approach Round 1
  - Expert Survey Delphi Approach Round 2

- Procurement
  - Expert Survey Delphi Approach Round 1
  - Expert Survey Delphi Approach Round 2

- Consumers
  - Qualitative research Consumer focus groups
  - Quantitative research Consumer survey
Outline

**Market Drivers and Barriers**
- Business expert survey results
- Country differences
- Summary / Discussion

**Labelling and Public Procurement**
- Business expert opinions on labelling
- Procurement expert survey results
- Summary / Discussion
Business expert survey

324 respondents, mainly business representatives from 17 EU member states

In which country do you work?

- FR 33%
- DE 28%
- IT 6%
- NL 9%
- BE 6%
- Other EU member state 14%
- Non-EU 1%
- No answer 3%

~1/3 France, ~1/3 Germany, ~1/3 other countries

What kind of organization do you work for?

- Business 51%
- University or research institute 25%
- Government / Public organization 8%
- Industry association 6%
- NGO 2%
- Other 8%
Type of bio-based product

Different product groups covered, but particular focus on bio-plastics

Which **type of bio-based product** does your organization produce or buy?

- Bio-plastics: 106
- Wood-based materials: 54
- Bio-surfactants: 50
- Bio-lubricants: 50
- Bio-solvents: 39
- Other bio-based products or materials: 77

33%
Business activities
60% active in production or purchase of bio-based products

Which of the following activities does your organization engage in?

- Production of intermediate bio-based products or materials: 63
- Production of bio-based end-products: 52
- Purchase of intermediate bio-based products or materials: 72
- Purchase of bio-based end-products: 21
- Trade of bio-based products or materials: 11
- None of the above: 125

**share of bioplastics >50%**
Reliance on bio-based sources

Responding bioplastic businesses strongly rely on bio-based sources

To what extent does your organization already rely on bio-based sources (estimated)?

- ~30%
- ~50%
- 0 - 5%
- 5 - 10%
- 10 - 50%
- >50%
- not applicable
- no answer

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Expertise
Strong expertise in bio-based products and in labelling and certification

Do you consider yourself an expert in the field of bio-based products?

- Yes: respondents that engage in bioplastics = 73, other respondents = 107
- Somewhat: respondents that engage in bioplastics = 61, other respondents = 35
- No: respondents that engage in bioplastics = 37

How would you rate your professional experience in the area of product labelling and certification?

- I have advanced professional experience: respondents that engage in bioplastics = 111, other respondents = 79
- I have some professional experience: respondents that engage in bioplastics = 51, other respondents = 27
- I have no professional experience: respondents that engage in bioplastics = 41, other respondents = 24

Bioplastics overrepresented among high-level experts (~50%)

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### Market Drivers

How would you rate the importance of the following factors as **drivers of the future development** of the B2B market for bio-based products? (1 = very low, 5 = very high)

<table>
<thead>
<tr>
<th>Market Driver</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive public image</td>
<td>4.14</td>
</tr>
<tr>
<td>Independence from fossil fuels</td>
<td>4.12</td>
</tr>
<tr>
<td>Savings in CO2 emissions</td>
<td>3.98</td>
</tr>
<tr>
<td>Compliance with environmental regulation</td>
<td>3.93</td>
</tr>
<tr>
<td>Reduced human toxicity</td>
<td>3.93</td>
</tr>
<tr>
<td>Utilization of waste products</td>
<td>3.85</td>
</tr>
<tr>
<td>New or added functionality</td>
<td>3.80</td>
</tr>
<tr>
<td>Recyclability</td>
<td>3.79</td>
</tr>
<tr>
<td>Potential to source feedstock locally</td>
<td>3.78</td>
</tr>
<tr>
<td>Improved performance</td>
<td>3.77</td>
</tr>
<tr>
<td>Potential to attract new customers</td>
<td>3.77</td>
</tr>
<tr>
<td>Reducing the production of environmental pollutants (other than CO2)</td>
<td>3.77</td>
</tr>
<tr>
<td>Energy savings during production</td>
<td>3.77</td>
</tr>
<tr>
<td>Lower production cost</td>
<td>3.77</td>
</tr>
<tr>
<td>Biodegradability / compostability</td>
<td>3.77</td>
</tr>
<tr>
<td>Savings for buyers (from purchase to disposal)</td>
<td>3.77</td>
</tr>
<tr>
<td>Willingness to pay green premium</td>
<td>3.77</td>
</tr>
</tbody>
</table>

The ranking is almost the same for the subgroup of respondents with a background in **bioplastics**.

### Notes
- **Positive public image** is the most important market driver, followed by **independence of fossil sources**.
- The following four items relate to **environmental issues**, most importantly climate change.
- **Performance-related aspects** are more important as drivers than **cost-related aspects**.
- **Biodegradability and compostability** are relatively unimportant.
- **Willingness to pay green premium** is the least important driver.
Country differences
Statistical significance depends on respondent group sizes and observed variance

How would you rate the importance of the following factors as drivers of the future development of the B2B market for bio-based products? (1 = very low, 5 = very high)

**Bio-degradability and compostability** is the second most important driver for Italian experts.

**Recyclability** is the third most important driver for Italian experts.

► **Italia:** B2B market is strongly linked to discussions on **end-of-life options**.
Country differences
Statistical significance depends on respondent group sizes and observed variance

How would you rate the importance of the following factors as drivers of the future development of the B2B market for bio-based products? (1 = very low, 5 = very high)

French experts put particular importance on potential to source feedstock locally.

Independence from fossil resources is the most important driver for French experts.

► Italia: B2B market is strongly linked to discussions on end-of-life options.

► France: independence from foreign fossil resources and to develop domestic supply chains.
Country differences

Statistical significance depends on respondent group sizes and observed variance

How would you rate the importance of the following factors as drivers of the future development of the B2B market for bio-based products? (1 = very low, 5 = very high)

Dutch experts place lower level of importance to a number of environment-related items.

Performance and functionality-related items ranked relatively high among Dutch experts.

- Italia: B2B market is strongly linked to discussions on end-of-life options.
- France: independence from foreign fossil resources and to develop domestic supply chains.
- The Netherlands: bio-based economy is more strongly driven by (low carbon) technology development.
Market Barriers

How would you rate the importance of the following factors as barriers to the future development of the B2B market for bio-based products? (1 = very low, 5 = very high)

- **Higher production cost** is the most important market barrier.
- Items related to regulation and public support are among the most important barriers.
- **Lack of public awareness** ranks relatively high.
- Items related to environmental benefits are relatively unimportant.
- Social impacts of feedstock production is the least important barrier.

- Higher production cost
- Higher cost of production
- Uncertainty about future regulation
- Unsuitable regulatory environment
- Performance or uncertainty regarding performance
- Volatility of feedstock prices
- Unsuitable or uncertain feedstock quantity and quality
- Lack of public awareness about bio-based products
- Arrangements or high replacement costs from purchase to disposal
- Difficulty in communicating environmental benefits
- Limited local feedstock availability
- Environmental impacts of feedstock production
- Incompatibility with existing recycling schemes
- Concerns regarding GMOs in feedstock production
- Uncertainty about available feedstock quantity and quality
- Socio-economic impacts of feedstock production

The ranking slightly differs for the subgroup of respondents with a background in bioplastics.

- **Higher production cost** is the most important market barrier.
- Items related to regulation and public support are among the most important barriers.
- **Lack of public awareness** about bio-based products moves up to rank 3.
- Difficulty in communicating environmental benefits moves up to rank 5.
- Volatility of feedstock prices drops to rank 10.
- Lack of public awareness ranks relatively high.

Items related to regulation and public support are among the most important barriers.

Environmental impacts of feedstock production is the least important barrier.

Items related to environmental benefits are relatively unimportant.

Social impacts of feedstock production is the least important barrier.

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Discussion of drivers and barriers

- Bio-based seem to appreciate a positive public image, but at the same time the lack of public awareness is considered as an important market barrier.
- Social impacts of feedstock production seem not to pose an important barrier.
- Higher production costs are considered to be the main barrier for the future development of the B2B market for bio-based products.
- The willingness to pay a green premium does not seem to be sufficiently strong to compensate for higher production cost across the whole industry.
- Europe’s bio-based economy has a variety of country-specific drivers.
A European label for bio-based products?
A European label for bio-based products?

The creation of a European label for bio-based products is important for promoting the market uptake of bio-based products.

A European label for bio-based products should also require compliance with key environmental criteria (in addition to criteria on bio-based content). Only bio-based products which comply with the defined environmental criteria should be able to carry the label.

A European label for bio-based products should also require compliance with sustainability criteria related to the feedstock used. Only bio-based products which comply with these sustainability criteria should be able to carry the label.

A European label for bio-based products should only require compliance with criteria on bio-based content. Other criteria – if included – should be optional.

A European label for bio-based products should be integrated within the existing EU Ecolabel.

Open-Bio: Opening bio-based markets via standards, labelling and procurement
A European label for bio-based products should offer optional icons and label features to indicate...

- **Sustainable feedstock production** finds the highest level of support – closely followed by recyclability.

- **GMO-free feedstock** finds the lowest level of support – but still over 50 percent!
A European label for bio-based products should offer optional icons and label features to indicate...

- Sustainable feedstock production: 15% strongly disagree, 17% disagree, 51% neutral, 116% agree, 121% strongly agree.

- Recyclability: 19% strongly disagree, 20% disagree, 50% neutral, 118% agree, 112% strongly agree.

- Biodegradability: 27% strongly disagree, 23% disagree, 60% neutral, 113% agree, 96% strongly agree.

- Compostability: 29% strongly disagree, 33% disagree, 72% neutral, 101% agree, 84% strongly agree.

- The use of GMO-free feedstock: 57% strongly disagree, 27% disagree, 76% neutral, 78% agree, 79% strongly agree.

Optional label features

- Italian respondents place particular emphasis on „compostability“.
Key findings

- The majority of experts favors a European bio-based label with additional requirements regarding the sustainability of feedstock and other environmental issues.

- There is a large degree of uncertainty regarding the possibility of integrating a bio-based label in the EU Ecolabel.
Survey on public procurement and bio-based products
Who answered the survey?

- 171 completed questionnaires
- Ca. 2/3 of respondents are directly involved in public procurement
- Well-balanced section across geographic / administrative levels:
  - Dominance of German respondents (45%), followed by Italy (12%), France (8%), Netherlands (6%)

At which geographic / administrative level does your organization primarily operate?

- Municipal / Local level: 30%
- Regional / Provincial level: 33%
- National level: 23%
- European level: 4%
- Other: 4%
- No answer: 6%

In which country do you work?

- DE: 45%
- IT: 12%
- FR: 8%
- NL: 6%
- Other EU member states: 13%
- Non-EU: 4%
- No answer: 12%
- Other: 4%
Who answered the survey?

- More than 40% of the respondents are not sure about the meaning of “bio-based products”:
- More than a third of respondents claim to be experts in the field of green public procurement (GPP)
- In contrast, there is little expertise in the field of innovation-oriented public procurement (IPP)
Green public procurement and innovation-oriented public procurement

- Green public procurement practices are far more institutionalized than innovation-oriented public procurement practices
Bio-based content in public procurement practices

- Only 36% of organizations allow for specifications on bio-based content
- Where possible, this can usually be justified within the context of GPP (88%) or innovation-oriented public procurement (72%)
The following item represents an important issue for consideration in the current practice of green public procurement.

**Importance of environmental aspects in green public procurement**

- Savings in CO2 and energy-efficiency represent the most important issues.
- Bio-based content does not represent an important environmental aspect in green public procurement.
Measures to support the procurement of bio-based products

- Better guidance on how to compare bio-based and conventional products is considered important
- A new label for bio-based products receives relatively little support

Respondents were asked to select up to four items from a list of 13 measures. The graph above represents the number of votes per item.
Key findings

- Bio-based content alone is not considered a valid criteria within in most green public procurement schemes.

- Demonstrating the overall environmental benefits – in particular regarding CO₂ savings - of bio-based products vis-à-vis conventional products represents a possible avenue for boosting the uptake of bio-based products in green public procurement.

- The integration of criteria on bio-based content appears to be useful but not crucial for promoting the uptake of bio-based products in green public procurement.

- A special label for bio-based products is not viewed as an important measure for promoting the uptake of bio-based products in green public procurement.