Ref. Ares(2018)4041700 - 31/07/2018

BIOWAYS
Bio-based economy: network, innovate, communicate

D2.4 Public perception of bio-based products – societal needs and concerns (updated version)

DOCUMENT ID	D2.4
DUE DATE	31/07/2018
DELIVERY DATE	31/07/2018
DISSEMINATION LEVEL	Public
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DOCUMENT VERSION	2.0

GRANT AGREEEMENT Nº	720762
CONTRACT START DATE	1st October 2016
CONTRACT DURATION	24 Months

BIO-BASED INDUSTRIES Public-Private Partnership
Bio-based Industries Consortium
Horizon 2020 European Union funding for Research & Innovation

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 720762

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REVISION HISTORY			
Version	Date	Reviewer	Modifications
1.0	25/07/2018	E. Tsagaraki (Q-PLAN)	First complete version
2.0	31/7/2018	Iakovos Delioglanis (Q-PLAN)	Final version incorporating partners' comments

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1. Executive Summary

BIOWAYS is a two-year research project, started in October 2016 and funded by Horizon 2020 and the BBI-JU. The project aims to raise public awareness about the potential of bio-based products, promote their applications and benefits to society at large and provide the means for anyone with an interest in this domain to be able to follow ongoing developments in the industry and research. By providing a wide range of integrated, high-level activities, communication techniques and educational tools and materials, the project intends to increase public confidence in the bio-based industry in order to reinforce its market uptake, which in turn will positively impact on society, the economy and the environment.

During the first year of project's implementation an EU-wide online survey was carried out with the aim of collecting data about the public perception of bio-based products in order to assist BIOWAYS partners in fine-tuning the project's communication strategy and to help with the development of targeted information and training materials that would address the specific needs and concerns of the EU public.

A second version of the aforementioned EU-wide online survey was launched during this last phase of the project with the aim of helping with the ongoing development and improvement of recommendations and best practices with updated information. This version of the structured questionnaire was even simpler than the first version, more attractive and so easier to complete. It including five groups of questions about the public's:

- level of awareness of and engagement with bio-based products;
- confidence of and level of engagement with bio-based products;
- perception of the benefits of using bio-based products;
- perception of the barriers that prevent a greater use of bio-based products;
- general comments and demographic information.

The questionnaire was **translated into seven European languages** (English, Portuguese, Greek, Italian, Spanish, Slovak and Estonian) and was **launched on the web using the Google Forms tool on 28th May 2018**. The online questionnaire **remained live until 8th July 2018** and was promoted through BIOWAYS' official website (www.bioways.eu), partners' personal and business networks, social media, EU consumer networks and citizens associations. A promotional campaign was conducted on Facebook, using news feeds that had a reach of about 6.000 people located mainly in, by order of impact: Greece, Portugal, Italy, Spain, Slovakia, Estonia and UK.

The collected sample consisted of **530 respondents from various EU countries who were aged mainly between 25 and 65 years old**.

Of these respondents, **24,2% believe they have sufficient knowledge of bio-based products**, 24,2% stated they don't and 37,7% stated "Neutral/I don't know".

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A percentage of **39,1% believe that their awareness has changed over the last two years (2016-2018) and 53% feel that bio-based products are getting more visibility.**

The respondents were able to identify that products such as **paper** (81,9%) **packaging material** (79,2%), **biofuels** (76,6%), **textiles** (72,3%), **pellets and combustible materials** (68,9%), **cosmetics** (68,1%), **household cleaning products** (55,7%) and **building materials** (52,8%) can have bio-based content, which implies that consumers can easily recognize the bio-based products that find application in their daily lives. However, when the respondents were asked to name examples of bio-based products that they use, **in some cases it appears that the term "bio-based products" can be associated incorrectly with the term "organic products".**

More than 45% of the respondents indicated that information about the benefits of bio-based products is readily available. However, at least 31,7% and 36,4% need more information about their performance, origin and production process respectively.

The vast majority (82,3%) have a positive perception of bio-based products. A percentage of around 36,4% believe that bio-based products are "trustworthy" as far as their bio-based **content and environmental benefits** are concerned but they seemed unable to answer with certainty regarding the **origin and production process** (39,6%) and the **labelling** (35,5%) of these products.

In addition, **50,2% believe that bio-based products are just as good as the conventional ones** and **40,8% seem willing to pay more for a bio-based product of the same functionality and properties as a fossil-fuel derived one**. On the other hand, **37,5% of the respondents** stated that they **cannot easily find bio-based products in the market**.

Regarding the benefits that derive from the use of bio-based products, more than the half of the sample is aware of the perceived environmental benefits and **64,2% agree that the use of bio-based products contributes to the creation of sustainable economic growth and new jobs**.

Finally, a high rate of respondents (more than 30% on average) didn't feel confident in assessing the possible barrier scenarios (neutral/I don't know). However, it is clear that **many (>45%) believe that high prices and limited availability restrain consumers from selecting bio-based products**.

The results of the 2nd online questionnaire survey helped with the analysis of public opinion about bio-based products and thus with the development of policy recommendations and key messages. Furthermore, the knowledge gained will also feed the activities of WP5 "Impact assessment and recommendations".

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2. INTRODUCTION

The current report (D2.4) constitutes the updated version of the one elaborated under BIOWAYS project in May 2017 (D2.2) in order to identify and analyse the level of public awareness and acceptance of bio-based products.

During the first year of project's implementation (spring 2017), an EU-wide online survey was carried out which aimed to collect qualitative and quantitate data regarding the public perception of bio-based products. The ultimate goal of that first survey was to assist BIOWAYS partners in fine-tuning the project's communication strategy and in helping with the development of targeted information and training materials that address the specific needs and concerns of the EU public.

Note: the results of the survey are presented in the report D2.2 "Public perception of bio-based products societal needs and concerns" which is publicly available at: www.bioways.eu/download.php?f=243&l=en&key=faf3e6f477c8183036b6eb591863b6e8

A second version of the aforementioned EU-wide online survey was launched during this last phase of the project (spring 2018) with the aim of helping with the ongoing development of improved recommendations and best practices using updated information. To this extent, the current report aims to present the statistical and content analysis of the 2nd round of the EU-wide online survey conducted to collect the insights of EU citizens into:

- their level of awareness and acceptance of bio-based products;
- how they perceive the benefits of bio-based products and the implications of their use;
- how they perceive the barriers that inhibit the use of bio-based products.

The report is structured as follows:

- **Chapter 4** presents the methodology followed;
- **Chapter 5** summarizes the outcomes of the 1st BIOWAYS survey;
- **Chapter 6** outlines the results of the 2nd BIOWAYS survey; and
- **Chapter 7** includes the conclusions.

Finally, **Annexes I and II** include:

- the template of the 2nd round of the EU-wide online questionnaire;
- the results of the survey per country.

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3. Definitions

Bio-based products: products derived wholly or partly from biomass, such as plants, trees or animals. The biomass may have undergone physical, chemical or biological treatments.

Biomass: material of biological origin excluding material embedded in geological formations and/ or fossilized. Examples: (whole or parts of) plants, trees, algae, marine organisms, micro-organisms, animals etc.[1].

Bioeconomy: an economy using biological resources from the land and sea (– such as crops, forests, fish, animals and micro-organisms), as well as waste, as inputs to food and feed, industrial and energy production. It also covers the use of bio-based processes for sustainable industries.[2]

[1] CEN, 2014. "European Standard EN 16575:2014 'Bio-based products – Vocabulary'. ftp://ftp.cen.eu/CEN/Sectors/List/bio_basedproducts/DefinitionsEN16575.pdf
[2] https://ec.europa.eu/research/bioeconomy/index.cfm

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4. METHODOLOGY

The aim of the 2nd round of the survey that is described in this report was to identify and analyse the level of public awareness about bio-based products and the public perception of their value. This analysis is and continues to be valuable in the ongoing development of improved recommendations and best practises being devised by BIOWAYS. In implementing this task a simplified version of the BIOWAYS questionnaire used for the 1st round of the survey was developed.

This 2nd version of the structured questionnaire was even simpler than the first version and more attractive so it was easier to complete. It included five groups of questions about the public's:

- level of awareness of and engagement with bio-based products;
- confidence and level of engagement with bio-based products;
- perception of the benefits of using bio-based products;
- perception of the barriers that prevent a greater use of bio-based products;
- general comments and demographic information.

In addition, some questions were added for monitoring and assessment purposes with the aim of assisting with the activities taking place in of WP5 "Impact assessment and recommendations".

Similarly to the 1st round of BIOWAYS survey, the questionnaire targeted the total EU population and was available online via a GoogleForms tool in seven European languages (English, Portuguese, Greek, Italian, Spanish, Slovak and Estonian). This 2nd round of the survey was launched on May 28th, 2018 and remained available online until July 8th, 2018.

The survey was actively promoted through the BIOWAYS official website (www.bioways.eu), as well as through partners' personal and business networks (personal and corporate social media accounts, webpages, personal contacts, etc). The questionnaire was also disseminated through EU consumer networks, citizens associations and the BBI-JU. A campaign was also conducted on Facebook by using news feeds that had a reach of about 6.000 people located mainly in, by order of impact: Greece, Portugal, Italy, Spain, Slovakia, Estonia and UK.

The survey does not provide a fully quantitative picture of the level of awareness and acceptance of bio-based products in EU society, as there were not enough respondents to provide that truly representative statistical sample. However, it does provide valuable information for BIOWAYS partners for the development of well-targeted recommendations at the end of the project.

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5. Review of the 1st round of BIOWAYS EU-wide online survey on public perception of bio-based products

During the first year of project's implementation, part of BIOWAYS activities aimed at identifying the public perception of bio-based products. Within this concept, a **1st round of an EU-wide online survey was launched in April 2017** with the aim of collecting qualitative and quantitate data regarding the public perception of bio-based products, as well as to explore the general public's opinions and perceptions of the bio-economy. The ultimate scope of that first survey was to use the results to inform the design of targeted communications, awareness-raising activities and events.

The collected sample consisted of **452 respondents from various EU countries** who were aged mainly between 25 and 65 years old.

The analysis of the results revealed that even if there was a certain degree of interest, the level of public knowledge of and engagement with the bioeconomy was low. It was noted that consumers seemed to lack a full understanding of the term "bio-based" which led to misconceptions about the products found in the market. It was also clear that although consumers had a positive impression of bio-based products, they actually needed access to more information about them.

Specifically, in almost all questions, a significant number of respondents was not able to answer with certainty, preferring the response "Neutral/I don't know". The majority of respondents indicated that they couldn't easily find enough information about bio-based products and they hadn't been engaged in relevant informative actions. Moreover, the public incorrectly associated the term "bio-based products" with "organic products" and there was confusion amongst the consumers about their ability to recognize a bio-based product in the market from its label.

Despite that lack of awareness, lack of available information and unclear labelling, the survey indicated that consumers, given the choice, seemed to prefer bio-based products over their conventional equivalents, based mainly on the environmental benefits of their use. It should also be noted, however, that the high cost, the limited availability and the lack of guarantees/labelling of bio-based products discouraged people from using them.

Furthermore, although respondents appeared to be aware of the perceived environmental benefits of using bio-based products, many had doubts about the economic and societal benefits of their use and the contribution the bio-economy is making to the creation of sustainable economic growth and new jobs.

To conclude, it was clearly stated by the whole of the sample, that for the bioeconomy to reach its full potential, activities and measures should be taken that:

- offer incentives to consumers to buy sustainable, bio-based products;
- establish a clear certification and labelling regulation framework for bio-based products and packaging;

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- develop educational material about bio-based products to inform citizens, in particular young people;
- support new bio-based industries and the greening of traditional industries;
- generate or reinforce informative online resources and online portals where information can be exchanged about bio-based products and their applications and information about producers is also available.

The results of the 1st round online questionnaire survey are presented in detail in the report D2.2 "Public perception of bio-based products"[3].

[3] The report D2.2 "Public perception of bio-based products" is publicly available through the project's official website: www.bioways.eu

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6. 2nd ROUND OF BIOWAYS EU-WIDE ONLINE SURVEY – ANALYSIS OF THE RESULTS

6.1. DESCRIPTION OF THE SAMPLE

The **2nd round of the BIOWAYS survey gathered 530 responses in total**. As the survey targeted the total EU population, the participants were from various EU countries (**Figure 1**), covering several age groups. The greater numbers of answers were collected in the countries where the questionnaire was available in the national language. The majority of participants were 25-40 and 40-65 years old (**Figure 2**) holding a university degree (**Figure 3**). This age range of the sample could be further explained by the fact that the survey was available online and thus not easily accessible for the elderly or for people not familiar with the web.

Moreover, 54,72% of the respondents participated in at least one BIOWAYS activity or event or have benefited from the BIOWAYS educational toolkit (factsheets, serious games, BIOW@TCH platform) produced within the project (**Figure 4**).

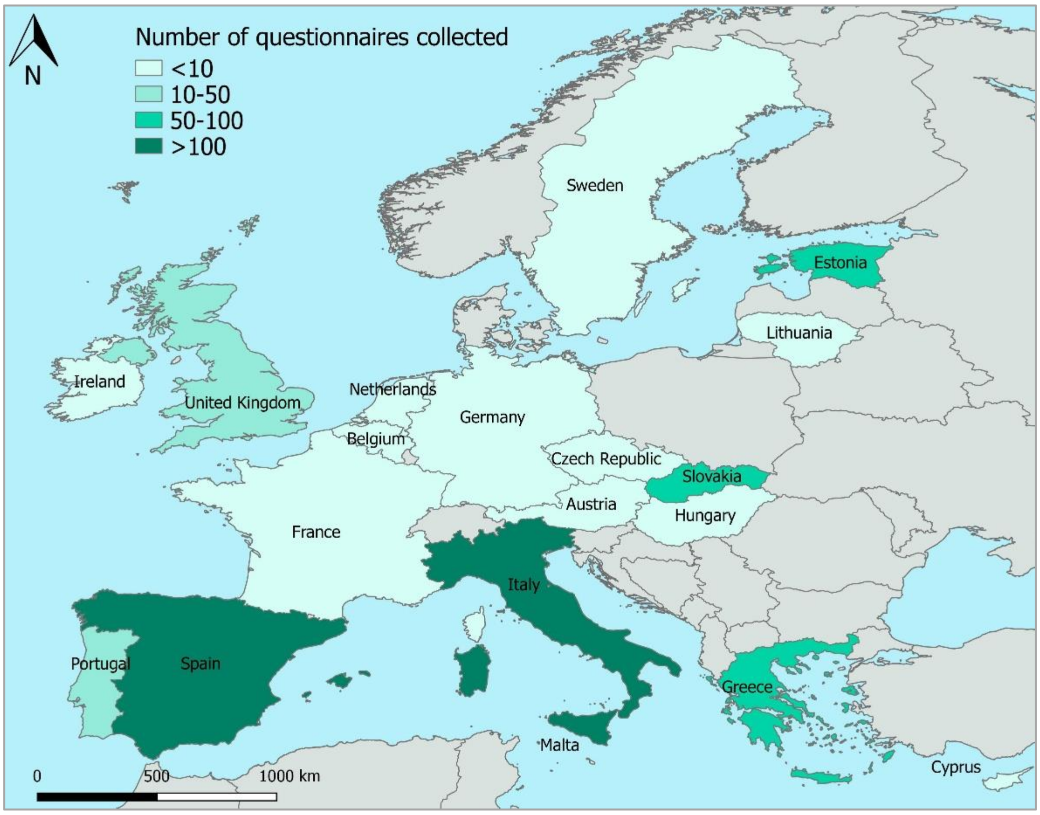

Figure 1: Collected questionnaires per country (total number: 530)

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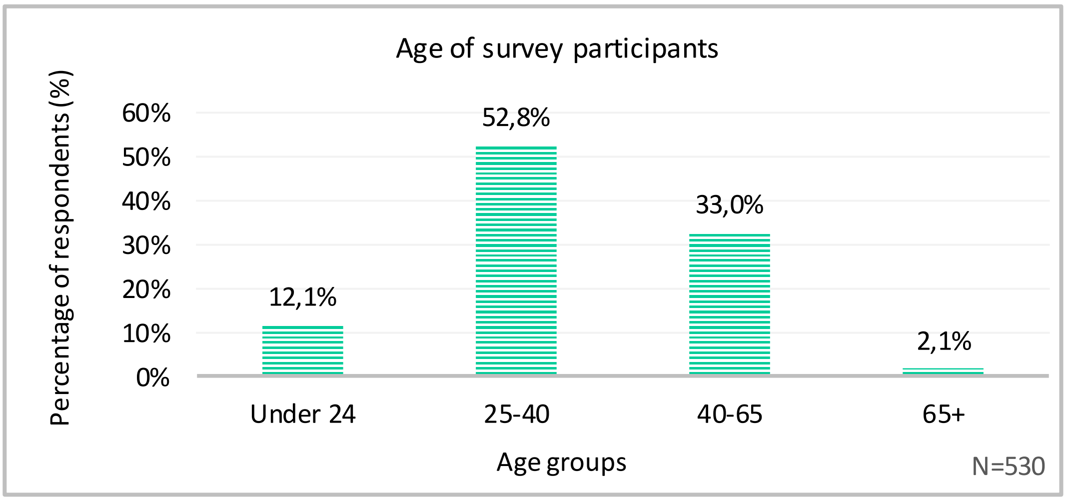

Figure 2: Age of the survey participants (% of respondents)

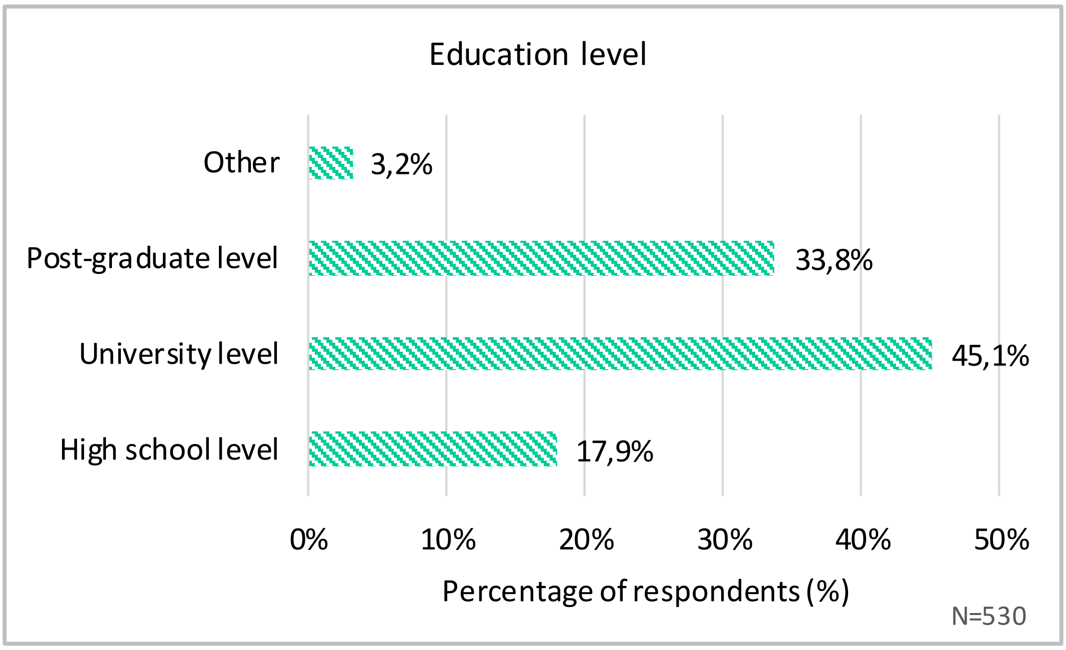

Figure 3: Level of education (% of respondents)

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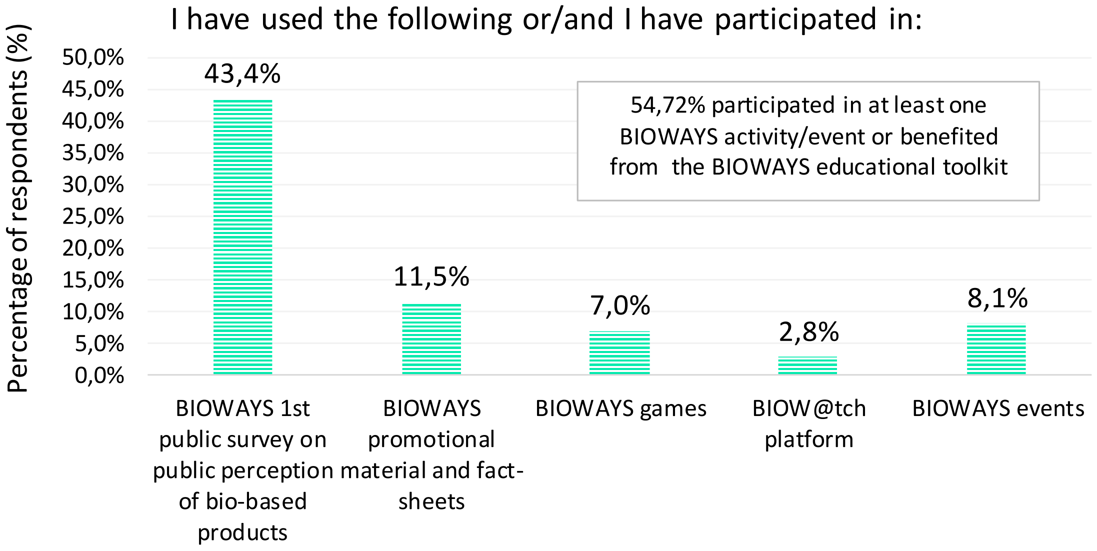

Figure 4: Participation in BIOWAYS activities and use of BIOWAYS material (% of respondents)

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6.2. LEVEL OF AWARENESS IN AND ENGAGEMENT WITH BIO-BASED PRODUCTS

The first section of the survey included questions, which aimed to identify the public's level of awareness of bio-based products and their engagement with them.

In general, a significant confusion among the consumers appears to exist regarding their perceived knowledge of bio-based products. As **Figure 5** depicts, 37,7% of the respondents couldn't estimate their level of awareness (answering "Neutral/ I don't know"), indicating uncertainty and a possible misunderstanding of the term "bio-based".

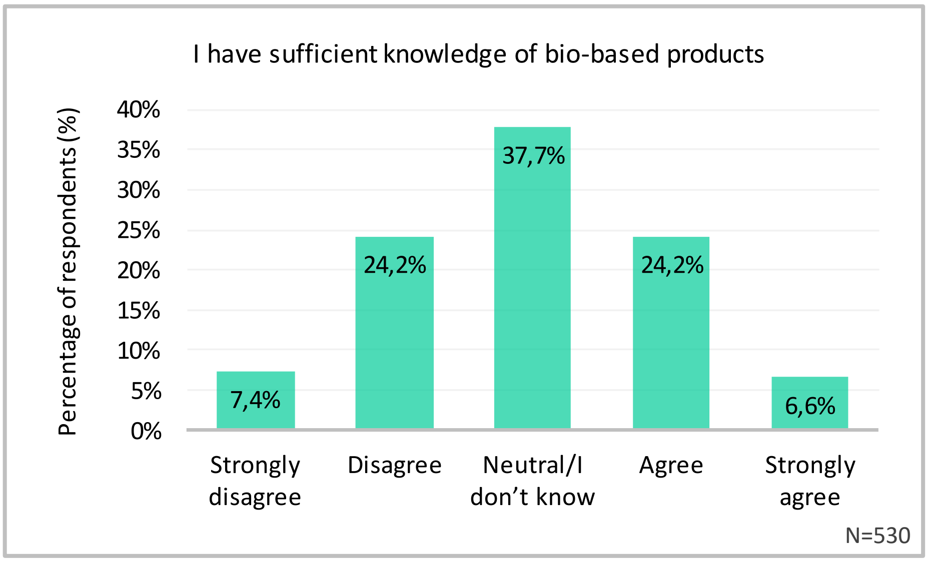

Figure 5: Answers to survey question "I have sufficient knowledge of bio-based products" (% of respondents)

To this extent, it is worth mentioning that the same pattern had been observed in the 1st BIOWAYS survey held in spring 2017 (**Figure 6**).

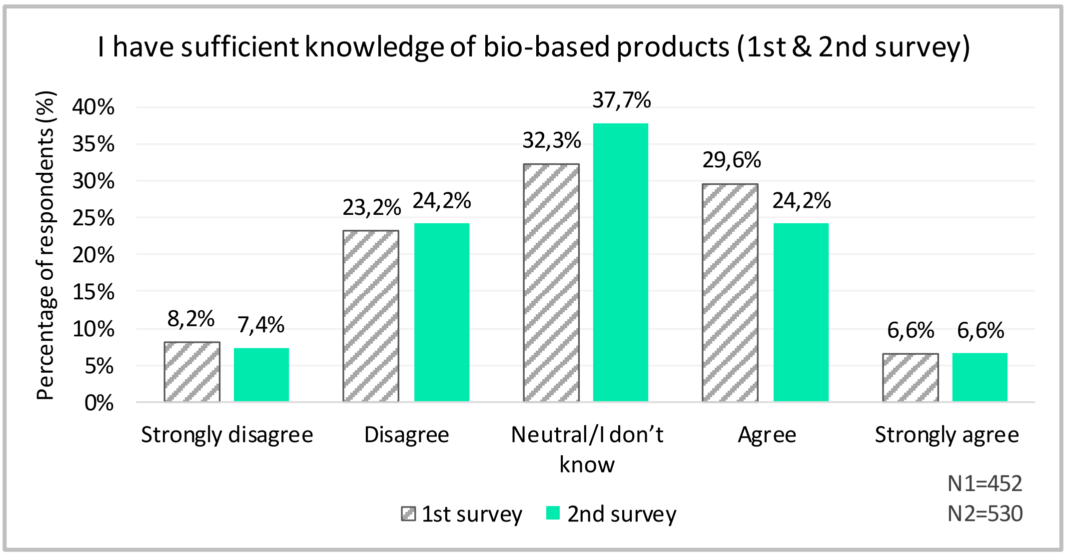

Figure 6: Level of awareness of bio-based products – results of the two BIOWAYS surveys (1st survey in spring 2017, 2nd survey in summer 2018) (% of respondents).

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The respondents were then provided with a list of products and asked to identify which of them can be produced using bio-based materials. Around 80% of the participants seem to be aware that paper products and packaging material (beverage bottles, food packaging etc.) can be made using bio-based materials. Biofuels (bioethanol, biodiesel, etc.) and textiles, were identified by 76.6% and 72,3% of the respondents respectively. More than 68% of the answers included the choice of cosmetics (68,1%) and pellets, wood and combustible materials (68,9%). Products for household cleaning were identified by the 55,7% of the sample and building materials by 52,8% (**Figure 7**). Overall, it seems that consumers can easily recognize the bio-based products that find application in their daily life while they are unfamiliar with the applications of bio-based products in the industry/business sector or related to intermediate products and processes.

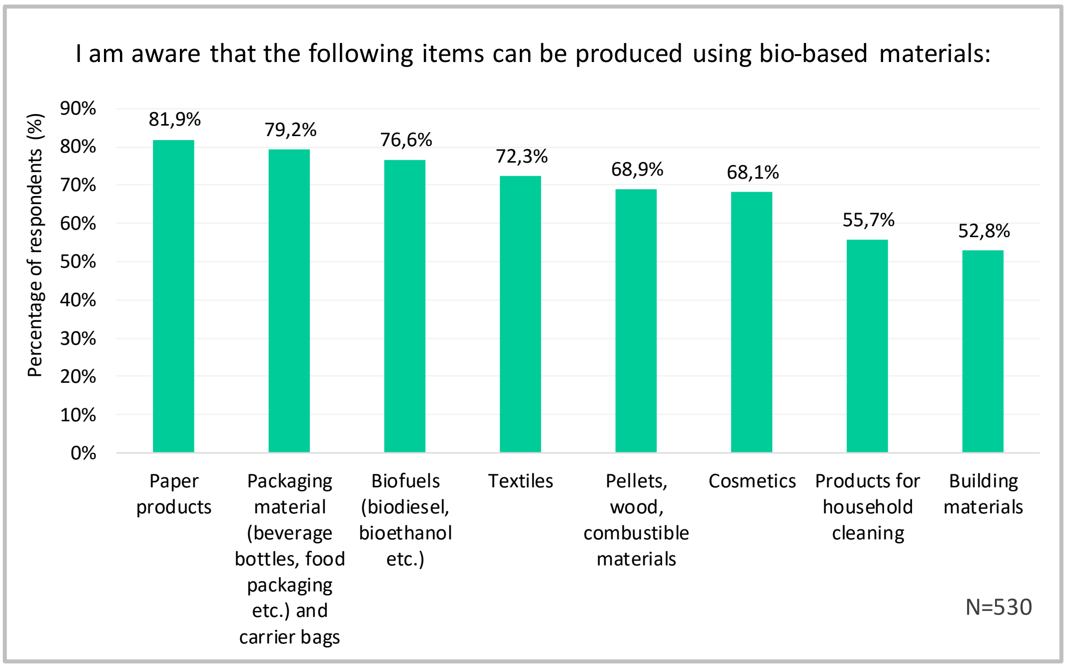

Figure 7: Answers to survey question "I am aware that the following items can be produced using bio-based materials" (% of respondents)

On the other hand, some respondents named in their comments "food" as bio-based product incorrectly associating the term "bio-based" with "organic". This misconception had also been noted in the 1st BIOWAYS survey and could be linked with the fact that in some countries the term "bio" is also used to describe organic products, generating that way concerns and confusion among the consumers.

Regarding the sufficiency of the available information about bio-based products, more than 45% of the respondents state that information about the benefits of bio-based products is readily available. However, it seems that more information about their performance, origin and production process would be welcome as well (**Figure 8**).

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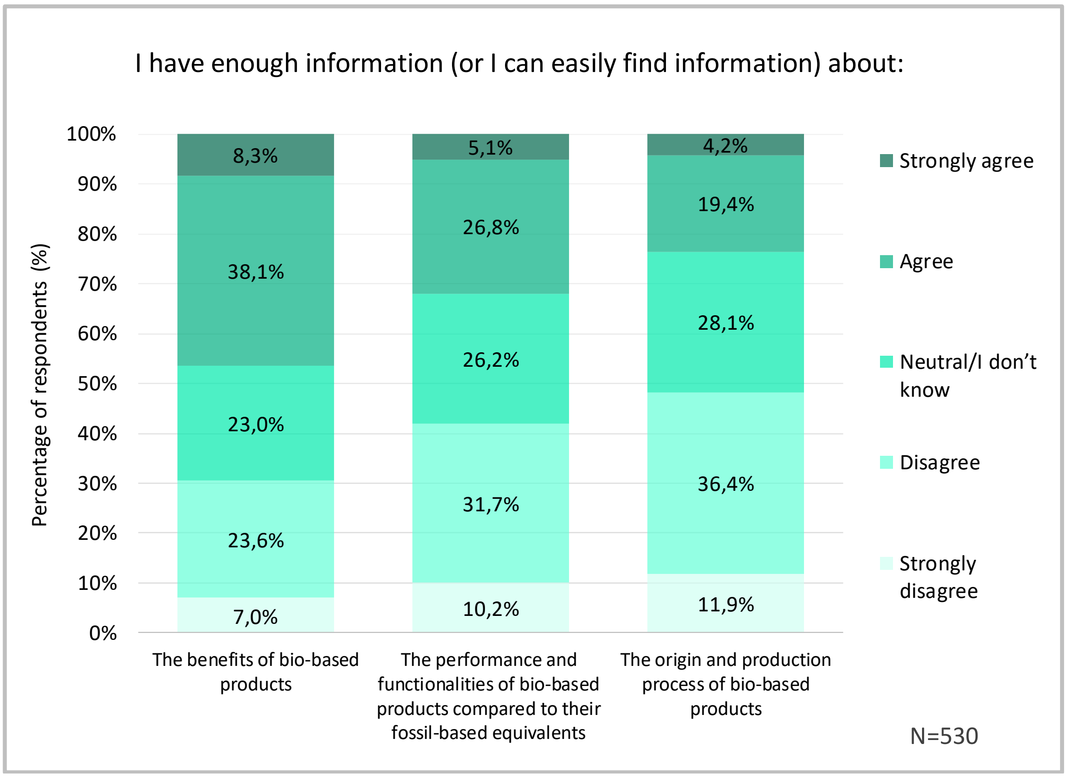

Figure 8: Answers about available information about bio-based products (% of respondents)

Despite the implication of the survey's results that there is a need to increase consumer access to information about bio-based products, it is encouraging to note that the majority of the sample (>60%) feel that the visibility of bio-based products has increased (**Figure 9**) in the last two years (2016-2018). It is also encouraging to note that this same percentage of respondents say that their awareness of bio-based products has also changed (**Figure 10**) over the same period of time.

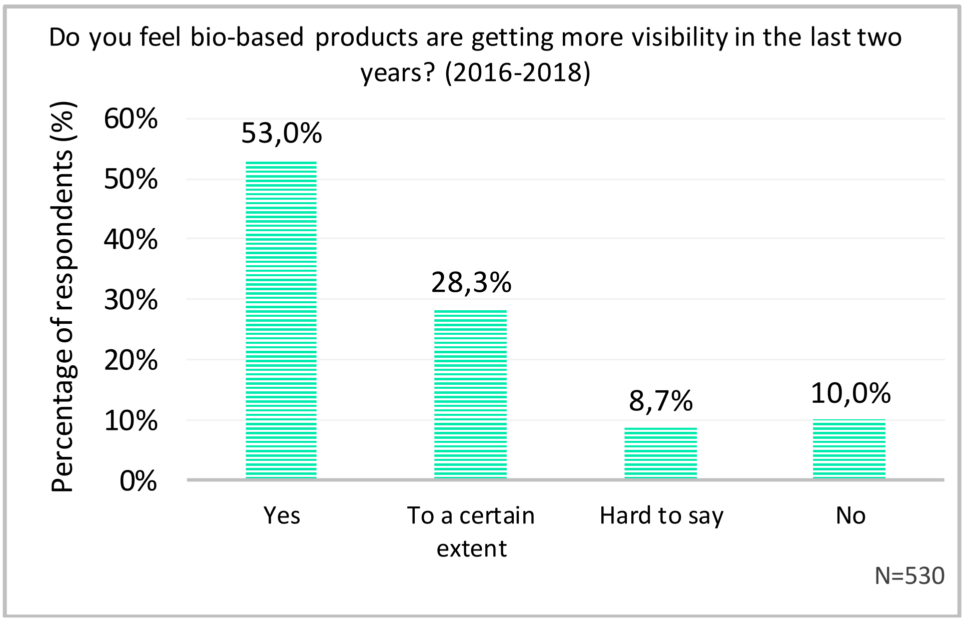

Figure 9: Answers about the visibility of bio-based products in the last two years (2016-2018) (% of respondents)

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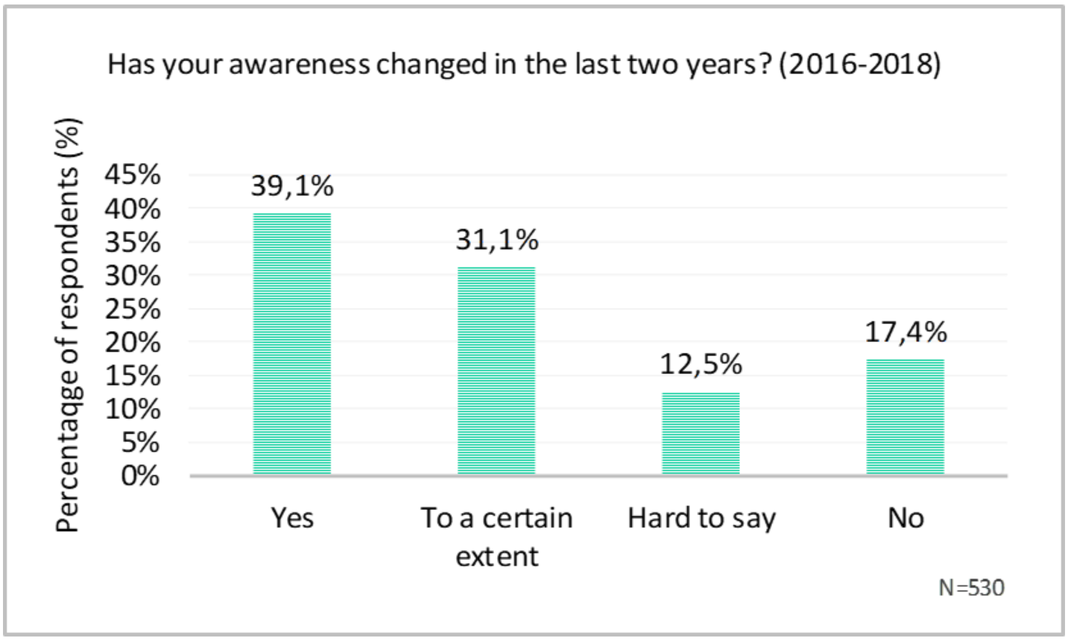

Figure 10: Answers about change in awareness about bio-based products in the last two years (2016-2018) (% of respondents)

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6.3. CONFIDENCE AND LEVEL OF ENGAGEMENT IN BIO-BASED PRODUCTS

The objective of this section of the 2nd BIOWAYS online survey was to identify the level of public confidence there is in bio-based products and to assess whether these products are accepted or rejected and the associated reasons why.

As **Figure 11** presents, the vast majority of the respondents (71,1%) answered that they never use bio-based products. Despite this rather limited use, however, it seems bio-based products are accepted in a positive way by consumers. In fact, more than 40% of the respondents recognize the positive impact that the use of bio-based products may have on the environment and they seem willing to pay more for a bio-based product that is as good as its fossil-fuel derived equivalent. In fact, around 50,2% of the respondents believe that bio-based products are just as good as conventional products (36,4% agree and 13,8% strongly agree) (**Figure 12**).

Contrary to this overall positive impression of bio-based products the survey highlights the low market availability of them with as more than 40% of the respondents stating that they cannot easily find bio-based products in the market and 29% unable to answer with any certainty whether they could or not. (**Figure 12**).

As regards the public opinion about the reliability of bio-based products found in the market, consumers seem to believe that bio-based products are trustworthy as far as their bio-based content and their environmental benefits are concerned (>50%), but the majority of them didn't have a clear opinion regarding their labelling, origin and production process (**Figure 13**). Overall, most of the respondents feel that their trust in bio-based products has changed in the last two years (2016-2018) (**Figure 14**).

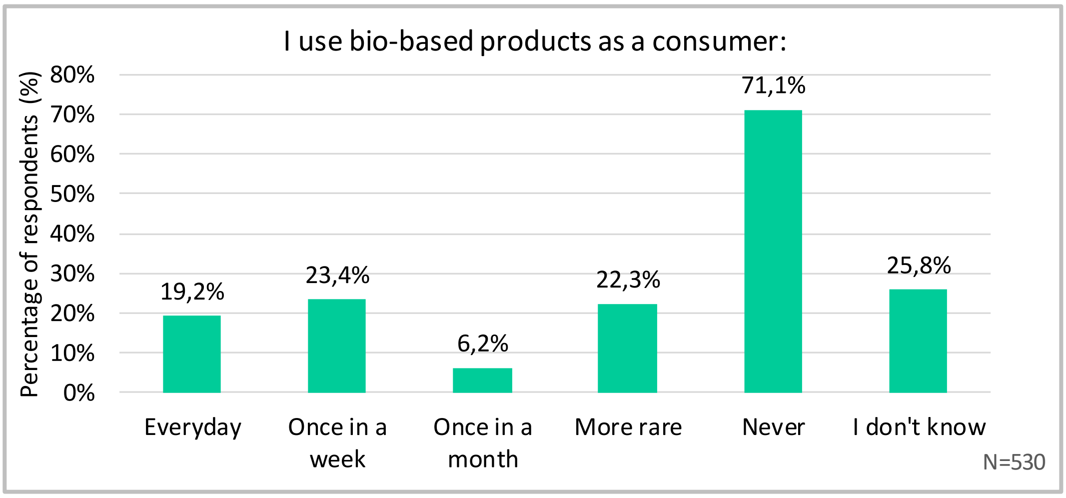

Figure 11: Frequency of use of bio-based products by the consumers (% of respondents)

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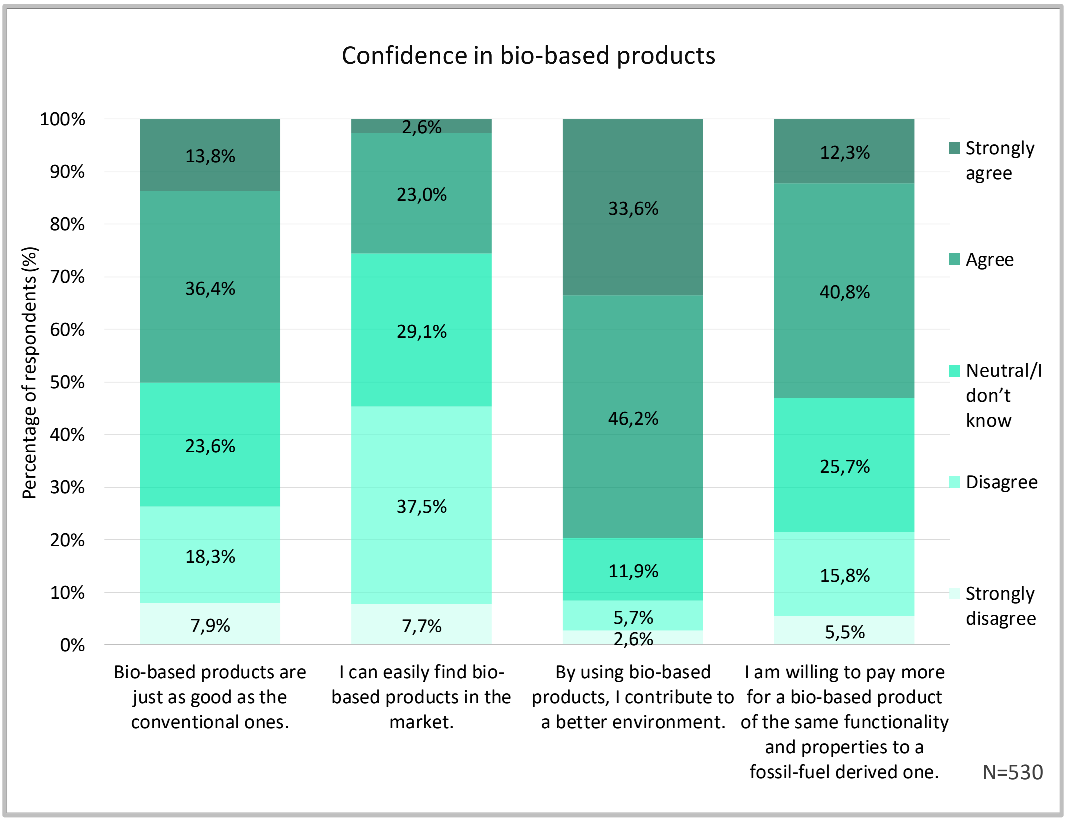

Figure 12: Confidence in bio-based products (% of respondents)

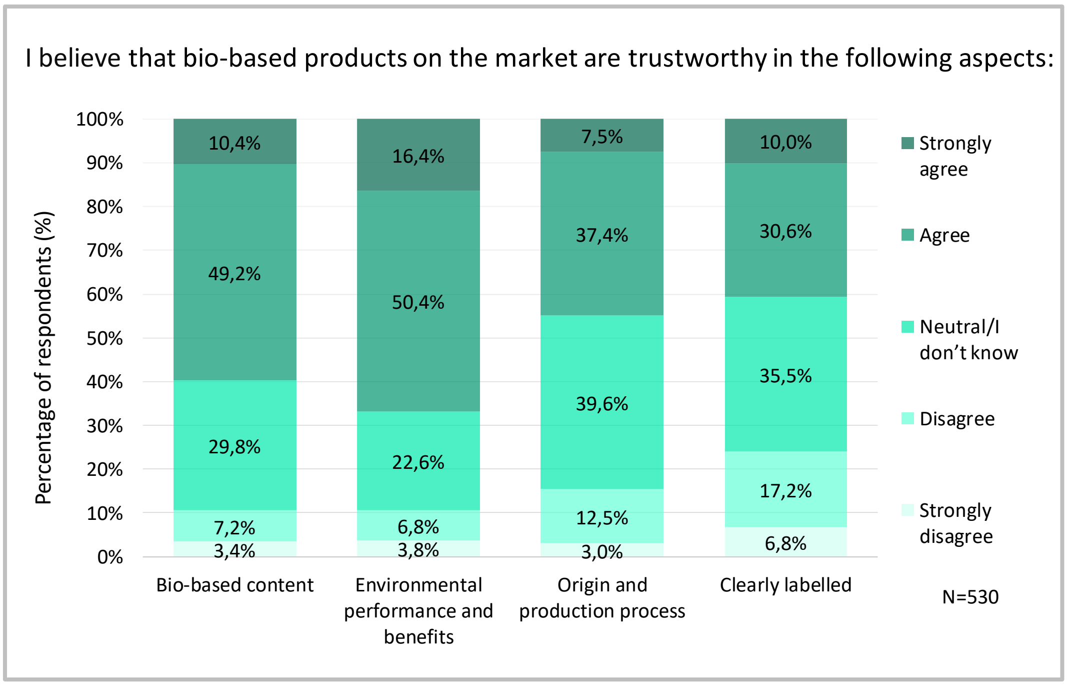

Figure 13: The aspects of bio-based products on the market which people find trustworthy (% of respondents)

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Q-PLAN International Advisors (Coordinator), LOBA, FVA New Media Design, IPL Insight Publishers, PEDAL Consulting, University of Bologna, CIVITTA, AINIA

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 720762

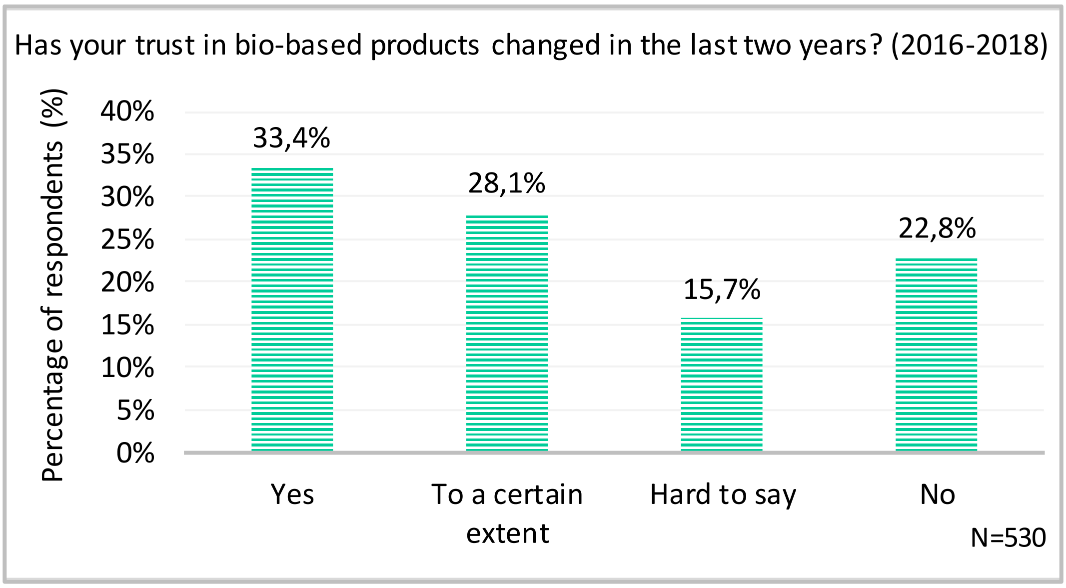

Figure 14: Answers to the question about whether consumers' trust in bio-based products has changed over the last two years (2016-2018) or not (% of respondents)

PARTNERS
Q-PLAN International Advisors (Coordinator), LOBA, FVA New Media Design, IPL Insight Publishers, PEDAL Consulting, University of Bologna, CIVITTA, AINIA

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6.4. The perceived benefits that derive from the use of bio-based products

This section of the survey aimed to identify what the public perceive to be the benefits of using bio-based products.

Specifically, more than the half of the sample perceive some environmental benefits in terms of land, water, biodiversity and climate change and they believe that the use of bio-based products could lead to (**Figure 15**):

- less use of fossil fuels (74,7%: 47,5% agrees and 27,2% strongly agrees);
- less waste produced (70,9%: 46,4% agrees and 24,5% strongly agrees); and
- less greenhouse gasses produced (64,7%: 43,8% agrees and 20,9% strongly agrees);

In addition, a significant number of respondents (64,2%) is confident that the use of bio-based products contributes to the creation of sustainable economic growth and new jobs (**Figure 15**). At this point, it is worth highlighting that in the 1st survey around 40% of the respondents seemed to disagree with this statement, while, as **Figure 15** shows, in the current survey only 8,1% disagree (4,5%) or strongly disagree (3,6%) with it. This change in perception about the sustainable economic viability of bio-based products may well be linked to the fact that a significant percentage of respondents feel that their perception of these products in general has changed over the last two years (62,3% in total - 34,9% stating "yes changed" and 27,4% answering "to a certain extent" - **Figure 16**). Overall, the vast majority (82,3%) clearly expressed that the their perception of bio-based products is positive (**Figure 17**).

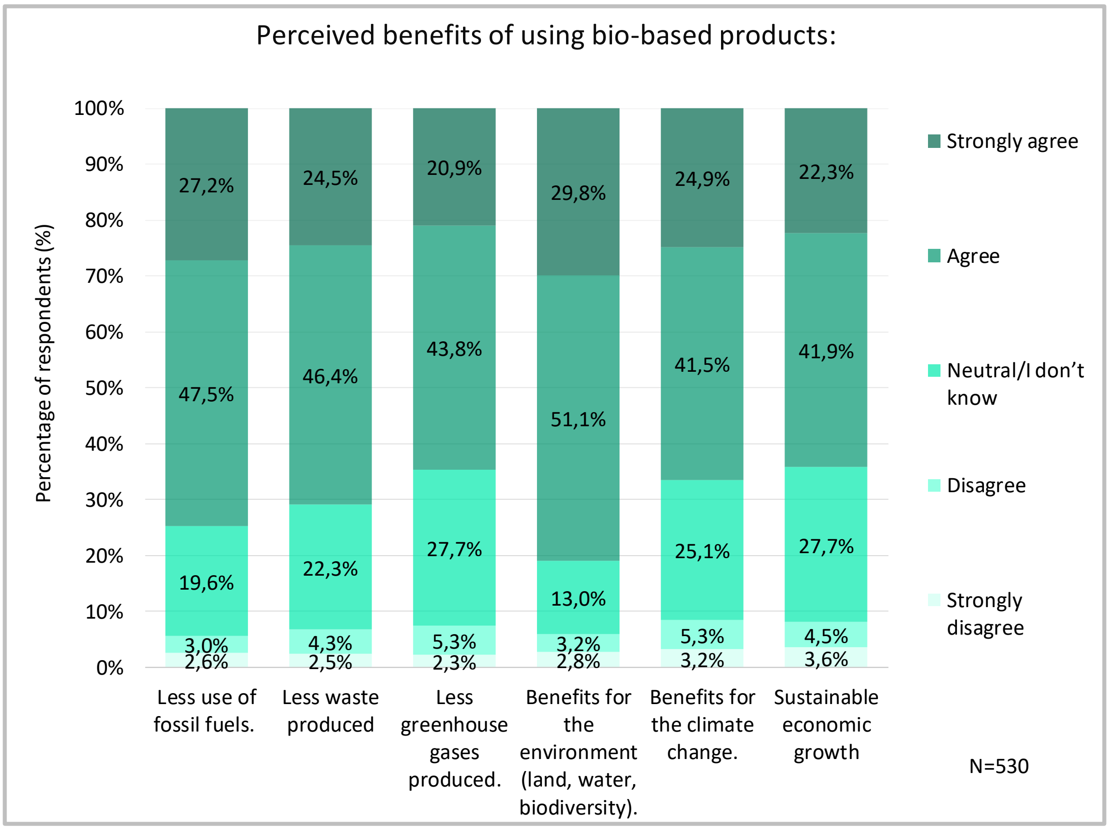

Figure 15: Perceived benefits of using bio-based products (% of respondents)

PARTNERS
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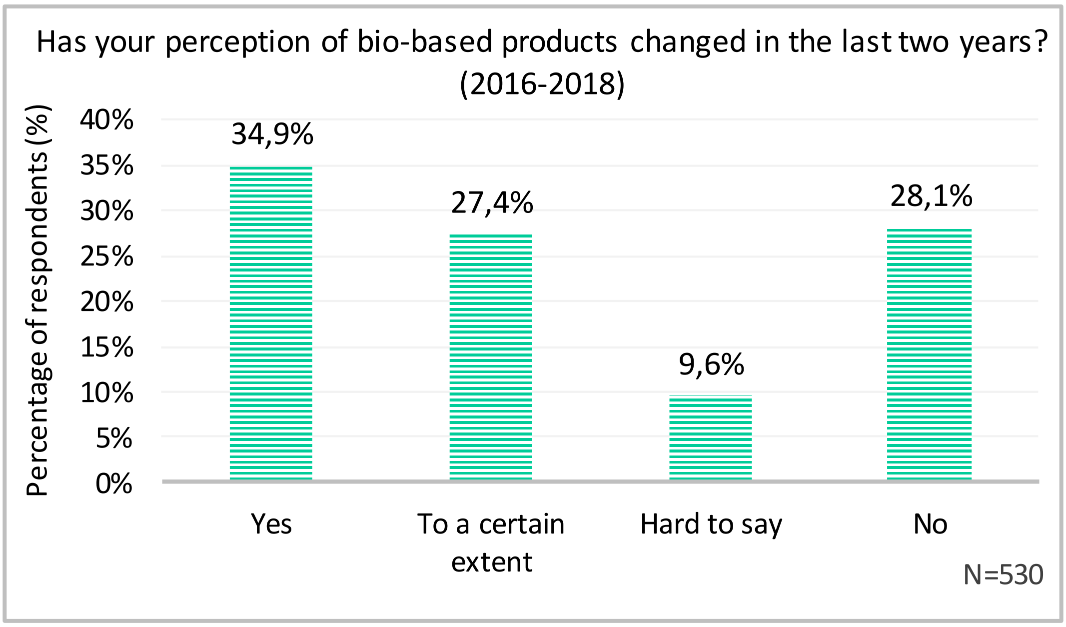

Figure 16: Change in the perception of bio-based products during the last two years (2016-2018) (% of respondents)

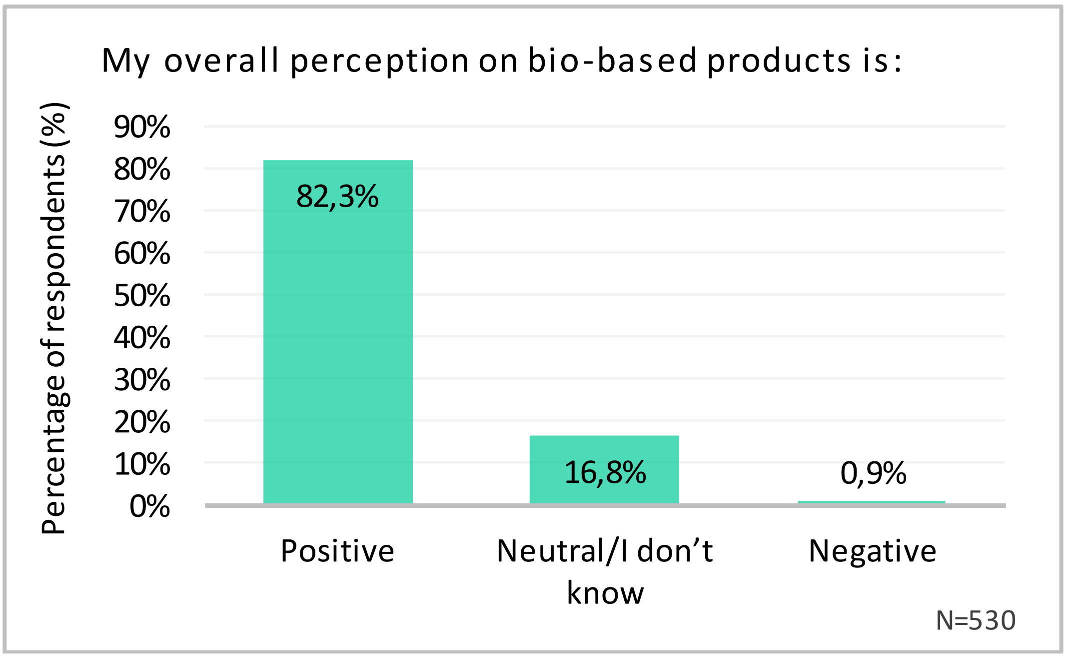

Figure 17: Overall perception of bio-based products (% of respondents)

PARTNERS
Q-PLAN International Advisors (Coordinator), LOBA, FVA New Media Design, IPL Insight Publishers, PEDAL Consulting, University of Bologna, CIVITTA, AINIA

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6.5. The perceived barriers that prevent a greater use of bio-based products

In the survey, the respondents were asked to assess possible barriers that may exist that prevent a greater use of bio-based products.

In general, it appears that consumers do not feel confident in assessing whether or not the production of bio-based products may lead to the overexploitation of natural resources or to increased deforestation and decreasing biodiversity. In fact, most of them (31,9% and 42,6% respectively) answered "neutral/I don't know" (**Figure 18**) to these scenarios. Similarly, 37,4% of the respondents were not able to answer with certainty whether or not the use of fertilizers and other chemicals to maintain an increase in the production of some bio-based products would lead to increased agricultural pollution (**Figure 18**). Moreover, a significantly high percentage (44,3%) do not seem confident in expressing an opinion about a low performance of bio-based products compared to their fossil-based equivalents being an inhibitor or not (**Figure 18**).

Diversely, more than the 40% of the consumers agree that the limited market availability and the high prices of bio-based products - in comparison to conventional ones – do inhibit their wider use (**Figure 18**).

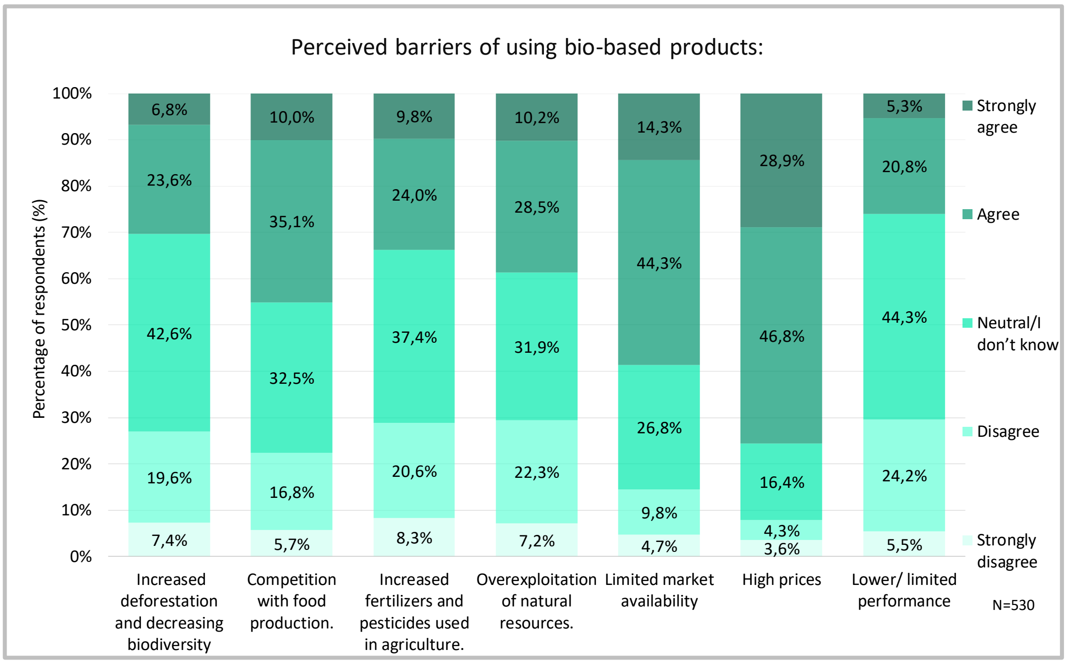

Figure 18: Public perception of the barriers that are preventing a greater use of bio-based products (% of respondents)

PARTNERS
Q-PLAN International Advisors (Coordinator), LOBA, FVA New Media Design, IPL Insight Publishers, PEDAL Consulting, University of Bologna, CIVITTA, AINIA

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7. Conclusions

The 1st BIOWAYS online survey (held in April 2017) revealed that public awareness of bio-based products was low and that there was lack of information or informative activities about them. Moreover, during the analysis of the 1st survey it became clear that the public incorrectly associated the term “bio-based products” with “organic products” and that the high cost, the limited availability and the lack of guarantees/labelling of bio-based products discouraged people from using them. On the other hand, the survey indicated that consumers, given the choice, seem to prefer bio-based products over their conventional equivalents, based mainly on the perceived environmental benefits of their use. The BIOWAYS project used these results to develop well-targeted educational material about the bioeconomy and fine-tune its communication activities.

In June 2018 a 2nd BIOWAYS online survey was carried out so the project could enhance the development of its recommendations and advice about best practice using valuable updated information. The analysis of this 2nd survey reveals that there is still uncertainty and confusion among consumers regarding bio-based products. Indeed, most respondents clearly stated that they do not use bio-based products, in spite of the fact that they feel that their visibility has increased over the last two years.

Interestingly, it appears that despite the fact that some people still incorrectly associate the term “bio-based” with “organic”, consumers can easily recognize bio-based products that are used in everyday life, such us paper products, packaging, cleaning materials and cosmetics, for example. Meanwhile, however, the public seems to be unfamiliar with the bio-based applications used by industry and business and has a lack of understanding about the production processes involved in developing them.

Although respondents appear to be well informed about the benefits of bio-based products, many expressed that they lack access to information about their performance, origin and production process.

In general, it is observed that the public have a positive attitude towards and interest in bio-based products. Consumers find them trustworthy in terms of their content, they recognize the potentially positive environmental impact they have and are willing to pay more for a bio-based product of the same functionality and properties to a fossil-fuel derived one. Nevertheless, the survey does indicate that limited market availability and high prices are important factors that inhibit the wider use of bio-based products.

To conclude, both surveys suggest that despite the positive impression that consumers have about bio-based products they still lack awareness of them and have difficulty using more of them because of their low market availability. It is encouraging, however, that over the last two years, bio-based products are becoming more visible to the consumer, more information about them is readily available and people are becoming more aware about the bio-based applications that already exist in their daily lives.

PARTNERS
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ANNEX I: ON-LINE QUESTIONNAIRE

Public perception of bio-based products

Dear Madam/Sir,

We are conducting a survey to find out what people actually know about bio-based products and how much is generally understood about the bioeconomy. What are bio-based products, for example, and what positive impact do you think they have on society, the economy and the environment? Your views will help us to assess our project impact on raising awareness of bio-based products and to highlight good practices and recommendations for future projects. Completing this questionnaire will take less than 10 minutes **and all the information you provide will be kept in strictest confidence and be used only for statistical purposes**.

What are bio-based products?

Bio-based products are products derived wholly or partly from biological resources such as plants, trees or animals, algae and waste after suitable physical, chemical or biological treatments.

Two common misconceptions about bio-based products:

- ***Misconception 1:*** "***Bio-based products are biodegradable"*** *This is not necessarily true. If a product is biodegradable*, it can be decomposed by the actions of micro-organisms. This property does not depend on the resource basis of a material but on its chemical structure. In other words, some bio-based products are biodegradable, some are not.
- ***Misconception 2: "Bio-based products are organic"***. This is not necessarily true. Organic products are produced without the use of chemically-formulated fertilizers, growth stimulants, antibiotics, or pesticides. Again, some bio-based products are organic and some are not.

About BIOWAYS project

This survey is being conducted by the **BIOWAYS project (**www.bioways.eu**)**, which is funded by Bio-based Industries Joint Undertaking (BBI-JU) under the EU's Horizon 2020 Framework Programme (Grant Agreement No 760762). The objectives are:

- To understand the characteristics and potential of bio-based products and applications
- To enhance the visibility of bio-based products and applications
- To encourage discussion about the potential of the bio-economy for society and
- To increase awareness and knowledge of how bio-based products are used
- To raise the interest of young students in the bio-based economy at large

Thank you for your participation

PARTNERS
Q-PLAN International Advisors (Coordinator), LOBA, FVA New Media Design, IPL Insight Publishers, PEDAL Consulting, University of Bologna, CIVITTA, AINIA

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<table>
<tr><th colspan="7">A. Your level of awareness in and engagement with bio-based products</th></tr>
<tr><td rowspan="2">1</td><td rowspan="2">I have sufficient knowledge of bio-based products.</td><td colspan="5">Click on your choice number below
(1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>2</td><td>I am aware that the following items can be produced using bio-based materials:</td><td colspan="5">Click on those product categories that are familiar to you</td></tr>
<tr><td></td><td>• Packaging material (beverage bottles, food packaging etc.) and carrier bags</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• Paper products</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• Textiles</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• Products for household cleaning</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• Cosmetics</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• Pellets, wood, combustible materials</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• Building materials</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• Biofuels (biodiesel, bioethanol etc.)</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• Other (please specify)</td><td colspan="5">[ ]</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Has your awareness changed in the last two years?</td><td colspan="5">Click on your choice below</td></tr>
<tr><td>Yes</td><td>No</td><td colspan="2">To a certain extent</td><td>Hard to say</td></tr>
<tr><td>4</td><td>I have enough information (or I can easily find information) about:</td><td colspan="5">Click on your choice number below
(1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)</td></tr>
<tr><td></td><td>• The benefits of bio-based products</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td></td><td>• The performance and functionalities of bio-based products compared to their fossil-based equivalents</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td></td><td>• The origin and production process of bio-based products</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Do you feel bio-based products are getting more visibility in the last two years?</td><td colspan="5">Click on your choice below</td></tr>
<tr><td>Yes</td><td>No</td><td colspan="2">To a certain extent</td><td>Hard to say</td></tr>
<tr><td>6</td><td>I have used the following or/and I have participated in</td><td colspan="5">Click on your choice below</td></tr>
<tr><td></td><td>• BIOWAYS 1st public survey on public perception of bio-based products</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• BIOWAYS promotional material and fact-sheets</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• BIOWAYS games</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• BIOWATCH platform</td><td colspan="5">[ ]</td></tr>
<tr><td></td><td>• BIOWAYS events</td><td colspan="5">[ ]</td></tr>
</table>

PARTNERS
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B. Your confidence and level of engagement in bio-based products						
1	My overall perception on bio-based products is:	Click on your choice below				
		Positive	Negative	Neutral/ I don't know		
2	Has your perception on bio-based products changed in the last two years?	Click on your choice below				
		Yes	No	To a certain extent	Hard to say	
3	Please state how you agree or disagree with the following statements:	Click on your choice number below (1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)				
	• Bio-based products are just as good as the conventional ones.	1	2	3	4	5
	• I can easily find bio-based products in the market.	1	2	3	4	5
	• By using bio-based products, I contribute to a better environment.	1	2	3	4	5
	• I am willing to pay more for a bio-based product of the same functionality and properties to a fossil-fuel derived one.	1	2	3	4	5
4	I believe that bio-based products on the market are trustworthy in the following aspects:	Click on your choice number below (1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)				
	• Bio-based content	1	2	3	4	5
	• Environmental performance and benefits	1	2	3	4	5
	• Origin and production process	1	2	3	4	5
	• Clearly labelled	1	2	3	4	5
5	Has your trust in bio-based products changed in the last two years?	Click on your choice below				
		Yes	No	To a certain extent	Hard to say	
6	I use bio-based products as a consumer:	Click on the frequency that you use bio-based products				
	• Everyday	[ ]				
	• Once in a week	[ ]				
	• Once in a month	[ ]				
	• More rare	[ ]				
	• Never	[ ]				
	• I don't know	[ ]				
7	Could you please name some bio-based products that you use and the frequency that you use them?					

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C. Your perception of the benefits of using bio-based products						
1	What are your perceived benefits of using bio-based products:	Click on your choice number below (1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)				
	• Less use of fossil fuels.	1	2	3	4	5
	• Less waste produced	1	2	3	4	5
	• Less greenhouse gases produced.	1	2	3	4	5
	• Benefits for the environment (land, water, biodiversity).	1	2	3	4	5
	• Benefits for the climate change.	1	2	3	5	5
	• Sustainable economic growth	1	2	3	4	5
	• Other perceived benefits: Please specify					

D. Your perception of the barriers of using bio-based products						
1	What are your perceived barriers in using bio-based products.	Click on your choice number below (1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)				
	• Increased deforestation and decreasing biodiversity	1	2	3	4	5
	• Competition with food production.	1	2	3	4	5
	• Increased fertilizers and pesticides used in agriculture.	1	2	3	4	5
	• Overexploitation of natural resources.	1	2	3	4	5
	• Limited market availability	1	2	3	4	5
	• High prices	1	2	3	4	5
	• Lower/ limited performance	1	2	3	4	5
	• Other perceived barriers: Please specify	1	2	3	4	5

E. Is there anything else you would like to add about bio-based products and bioeconomy in general?

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Some information about you					
1	Your age			Click on your age group below.	
	• Under 24			[ ]	
	• 25-40			[ ]	
	• 40-65			[ ]	
	• 65 or older			[ ]	
2	In which country do you live?			Click on the country where you live below	
	Austria Belgium Bulgaria Cyprus Czech Republic	Denmark Estonia Finland Greece Hungary	Ireland Italy Latvia Lithuania Luxembourg	Malta Netherlands Poland Portugal Romania	Slovakia Slovenia Spain Sweden UK
3	Your education level			Click on your education level below	
	• High school level			[ ]	
	• University level			[ ]	
	• Post-graduate level			[ ]	
4	Do you work, research, teach etc. in the field of bioeconomy and bio-based products?			Click on your choice below	
				Yes	No

You can find out more about BIOWAYS at www.bioways.eu, where you can also keep up to date with all the latest bioeconomy news and research on the exciting BIOW@TCH PLATFORM

PARTNERS
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ANNEX II: RESULTS PER COUNTRY

Translated version of the questionnaire	GR	UK	EE	ES	IT	PT	SK	TOTAL
Number of completed questionnaires	75	32	89	124	104	49	57	530

A. YOUR LEVEL OF AWARENESS IN AND ENGAGEMENT WITH BIO-BASED PRODUCTS

A1. I Have sufficient knowledge of bio-based products

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	10,7%	6,3%	7,9%	12,1%	4,8%	4,1%	0,0%	7,4%
Disagree	25,3%	9,4%	33,7%	25,8%	21,2%	20,4%	21,1%	24,2%
Neutral/I don't know	37,3%	37,5%	27,0%	33,9%	42,3%	38,8%	54,4%	37,7%
Agree	22,7%	31,3%	28,1%	19,4%	26,0%	32,7%	15,8%	24,2%
Strongly agree	4,0%	15,6%	3,4%	8,9%	5,8%	4,1%	8,8%	6,6%

A2. I am aware that the following items can be produced using bio-based materials:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Packaging material (beverage bottles, food packaging etc.) and carrier bags	72,0%	90,6%	83,1%	77,0%	91,3%	71,4%	63,2%	79,2%
Paper products	80,0%	87,5%	96,6%	79,4%	84,6%	63,3%	71,9%	81,9%
Textiles	73,3%	81,3%	86,5%	77,0%	56,7%	49,0%	78,9%	72,3%
Products for household cleaning	52,0%	78,1%	70,8%	54,0%	43,3%	30,6%	70,2%	55,7%
Cosmetics	68,0%	78,1%	73,0%	76,2%	38,5%	69,4%	87,7%	68,1%
Pellets, wood, combustible materials	69,3%	68,8%	89,9%	68,3%	71,2%	38,8%	56,1%	68,9%
Building materials	52,0%	59,4%	85,4%	48,4%	47,1%	24,5%	42,1%	52,8%
Biofuels (biodiesel, bioethanol etc.)	74,7%	87,5%	88,8%	70,6%	76,0%	69,4%	71,9%	76,6%

A3. Has your awareness changed in the last two years?

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Yes	25,3%	59,4%	32,6%	43,5%	45,2%	55,1%	21,1%	39,1%
No	33,3%	12,5%	16,9%	15,3%	9,6%	16,3%	19,3%	17,4%
To a certain extent	24,0%	18,8%	43,8%	31,5%	30,8%	18,4%	38,6%	31,1%
Hard to say	17,3%	9,4%	6,7%	9,7%	14,4%	10,2%	21,1%	12,5%

PARTNERS
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A4. I have enough information (or I can easily find information) about:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
The benefits of bio-based products								
Strongly disagree	4,0%	12,5%	5,6%	12,1%	7,7%	0,0%	3,5%	7,0%
Disagree	22,7%	15,6%	30,3%	33,1%	17,3%	10,2%	21,1%	23,6%
Neutral/I don't know	28,0%	15,6%	21,3%	18,5%	26,9%	22,4%	26,3%	23,0%
Agree	40,0%	50,0%	34,8%	33,9%	33,7%	51,0%	40,4%	38,1%
Strongly agree	5,3%	6,3%	7,9%	2,4%	14,4%	16,3%	8,8%	8,3%
The performance and functionalities of bio-based products compared to their fossil-based equivalents								
Strongly disagree	5,3%	9,4%	6,7%	17,7%	12,5%	2,0%	8,8%	10,2%
Disagree	33,3%	37,5%	34,8%	35,5%	33,7%	16,3%	22,8%	31,7%
Neutral/I don't know	34,7%	9,4%	22,5%	16,9%	26,0%	36,7%	42,1%	26,2%
Agree	22,7%	37,5%	30,3%	26,6%	20,2%	36,7%	24,6%	26,8%
Strongly agree	4,0%	6,3%	5,6%	3,2%	7,7%	8,2%	1,8%	5,1%
The origin and production process of bio-based products								
Strongly disagree	8,0%	15,6%	10,1%	14,5%	16,3%	6,1%	8,8%	11,9%
Disagree	33,3%	18,8%	49,4%	43,5%	34,6%	22,4%	29,8%	36,4%
Neutral/I don't know	32,0%	25,0%	24,7%	20,2%	26,9%	36,7%	42,1%	28,1%
Agree	24,0%	31,3%	14,6%	20,2%	12,5%	28,6%	17,5%	19,4%
Strongly agree	2,7%	9,4%	1,1%	1,6%	9,6%	6,1%	1,8%	4,2%

A5. Do you feel bio-based products are getting more visibility in the last two years?

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Yes	36,0%	46,9%	48,3%	50,0%	57,7%	73,5%	66,7%	53,0%
No	17,3%	12,5%	6,7%	10,5%	11,5%	2,0%	7,0%	10,0%
To a certain extent	33,3%	31,3%	37,1%	33,1%	20,2%	14,3%	22,8%	28,3%
Hard to say	13,3%	9,4%	7,9%	6,5%	10,6%	10,2%	3,5%	8,7%

A6. I have used the following or/and I have participated in:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
BIOWAYS 1st public survey on public perception of bio-based products	26,7%	18,8%	23,6%	60,5%	58,7%	26,5%	59,6%	43,4%
BIOWAYS promotional material and fact-sheets	16,0%	12,5%	4,5%	2,4%	28,8%	14,3%	1,8%	11,5%
BIOWAYS games	9,3%	12,5%	9,0%	0,8%	11,5%	8,2%	1,8%	7,0%
BIOW@tch platform	6,7%	3,1%	1,1%	2,4%	1,9%	6,1%	0,0%	2,8%
BIOWAYS events	6,7%	9,4%	6,7%	0,8%	25,0%	2,0%	1,8%	8,1%

PARTNERS
Q-PLAN International Advisors (Coordinator), LOBA, FVA New Media Design, IPL Insight Publishers, PEDAL Consulting, University of Bologna, CIVITTA, AINIA

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B. Your confidence and level of engagement in bio-based products

B1. My overall perception on bio-based products is:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Positive	76,0%	96,9%	80,9%	79,8%	89,4%	87,8%	71,9%	82,3%
Negative	1,3%	0,0%	1,1%	0,8%	1,0%	0,0%	1,8%	0,9%
Neutral/I don't know	22,7%	3,1%	18,0%	19,4%	9,6%	12,2%	26,3%	16,8%

B2. Has your perception on bio-based products changed in the last two years?

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Yes	17,3%	43,8%	16,9%	35,5%	44,2%	69,4%	33,3%	34,9%
No	40,0%	25,0%	49,4%	21,8%	22,1%	10,2%	21,1%	28,1%
To a certain extent	33,3%	21,9%	27,0%	33,9%	22,1%	8,2%	35,1%	27,4%
Hard to say	9,3%	9,4%	6,7%	8,9%	11,5%	12,2%	10,5%	9,6%

B3. Please state how you agree or disagree with the following statements:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Bio-based products are just as good as the conventional ones.								
Strongly disagree	5,3%	0,0%	2,2%	7,3%	20,2%	2,0%	8,8%	7,9%
Disagree	14,7%	28,1%	13,5%	20,2%	20,2%	12,2%	22,8%	18,3%
Neutral/I don't know	34,7%	37,5%	11,2%	19,4%	24,0%	24,5%	28,1%	23,6%
Agree	34,7%	21,9%	49,4%	36,3%	27,9%	44,9%	35,1%	36,4%
Strongly agree	10,7%	12,5%	23,6%	16,9%	7,7%	16,3%	5,3%	13,8%
I can easily find bio-based products in the market.								
Strongly disagree	6,7%	9,4%	4,5%	9,7%	11,5%	2,0%	7,0%	7,7%
Disagree	32,0%	37,5%	58,4%	42,7%	25,0%	40,8%	21,1%	37,5%
Neutral/I don't know	42,7%	21,9%	23,6%	26,6%	39,4%	22,4%	15,8%	29,1%
Agree	16,0%	21,9%	12,4%	19,4%	21,2%	28,6%	56,1%	23,0%
Strongly agree	2,7%	9,4%	1,1%	1,6%	2,9%	6,1%	0,0%	2,6%
By using bio-based products, I contribute to a better environment.								
Strongly disagree	0,0%	0,0%	1,1%	5,6%	1,9%	0,0%	7,0%	2,6%
Disagree	2,7%	0,0%	9,0%	8,1%	5,8%	4,1%	3,5%	5,7%
Neutral/I don't know	9,3%	21,9%	12,4%	14,5%	9,6%	6,1%	12,3%	11,9%
Agree	45,3%	53,1%	55,1%	40,3%	40,4%	42,9%	56,1%	46,2%
Strongly agree	42,7%	25,0%	22,5%	31,5%	42,3%	46,9%	21,1%	33,6%
I am willing to pay more for a bio-based product of the same functionality and properties to a fossil-fuel derived one.								
Strongly disagree	4,0%	3,1%	4,5%	9,7%	5,8%	2,0%	3,5%	5,5%
Disagree	17,3%	9,4%	14,6%	18,5%	15,4%	4,1%	24,6%	15,8%
Neutral/I don't know	17,3%	31,3%	21,3%	25,8%	28,8%	38,8%	22,8%	25,7%
Agree	49,3%	50,0%	47,2%	40,3%	30,8%	32,7%	40,4%	40,8%
Strongly agree	12,0%	6,3%	12,4%	5,6%	19,2%	22,4%	8,8%	12,3%

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B4. I believe that bio-based products on the market are trustworthy in the following aspects:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Bio-based content								
Strongly disagree	0,0%	0,0%	1,1%	6,5%	5,8%	0,0%	5,3%	3,4%
Disagree	10,7%	12,5%	3,4%	6,5%	5,8%	6,1%	10,5%	7,2%
Neutral/I don't know	60,0%	31,3%	14,6%	26,6%	26,9%	20,4%	33,3%	29,8%
Agree	25,3%	50,0%	75,3%	51,6%	44,2%	49,0%	43,9%	49,2%
Strongly agree	4,0%	6,3%	5,6%	8,9%	17,3%	24,5%	7,0%	10,4%
Environmental performance and benefits								
Strongly disagree	1,3%	3,1%	2,2%	7,3%	4,8%	0,0%	3,5%	3,8%
Disagree	4,0%	9,4%	9,0%	8,9%	5,8%	4,1%	5,3%	6,8%
Neutral/I don't know	36,0%	28,1%	23,6%	20,2%	18,3%	20,4%	15,8%	22,6%
Agree	50,7%	46,9%	56,2%	49,2%	40,4%	46,9%	66,7%	50,4%
Strongly agree	8,0%	12,5%	9,0%	14,5%	30,8%	28,6%	8,8%	16,4%
Origin and production process								
Strongly disagree	1,3%	3,1%	1,1%	5,6%	3,8%	0,0%	3,5%	3,0%
Disagree	8,0%	9,4%	22,5%	13,7%	10,6%	8,2%	8,8%	12,5%
Neutral/I don't know	52,0%	40,6%	36,0%	33,9%	43,3%	34,7%	38,6%	39,6%
Agree	36,0%	43,8%	38,2%	41,1%	29,8%	32,7%	43,9%	37,4%
Strongly agree	2,7%	3,1%	2,2%	5,6%	12,5%	24,5%	5,3%	7,5%
Clearly labelled								
Strongly disagree	8,0%	6,3%	2,2%	8,1%	14,4%	0,0%	1,8%	6,8%
Disagree	9,3%	21,9%	22,5%	20,2%	22,1%	12,2%	5,3%	17,2%
Neutral/I don't know	40,0%	43,8%	36,0%	38,7%	34,6%	36,7%	17,5%	35,5%
Agree	40,0%	18,8%	31,5%	24,2%	17,3%	30,6%	61,4%	30,6%
Strongly agree	2,7%	9,4%	7,9%	8,9%	11,5%	20,4%	14,0%	10,0%

B5. Has your trust in bio-based products changed in the last two years?

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Yes	17,3%	34,4%	27,0%	40,3%	33,7%	61,2%	24,6%	33,4%
No	30,7%	34,4%	30,3%	14,5%	24,0%	10,2%	21,1%	22,8%
To a certain extent	28,0%	18,8%	19,1%	33,1%	29,8%	20,4%	40,4%	28,1%
Hard to say	24,0%	12,5%	23,6%	12,1%	12,5%	8,2%	14,0%	15,7%

B6. I use bio-based products as a consumer:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Everyday	10,7%	28,1%	32,6%	16,1%	16,3%	12,2%	22,8%	19,2%
Once in a week	13,3%	40,6%	20,2%	20,2%	31,7%	18,4%	28,1%	23,4%
Once in a month	5,3%	0,0%	6,7%	5,6%	4,8%	14,3%	7,0%	6,2%
More rare	29,3%	15,6%	9,0%	16,9%	23,1%	32,7%	38,6%	22,3%
Never	2,7%	0,0%	0,0%	3,2%	7,7%	4,1%	0,0%	71,1%
I don't know	38,7%	15,6%	31,5%	37,9%	16,3%	18,4%	3,5%	25,8%

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C. Your perception of the benefits of using bio-based products

C1. What are your perceived benefits of using bio-based products:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Less use of fossil fuels								
Strongly disagree	1,3%	0,0%	0,0%	6,5%	2,9%	0,0%	3,5%	2,6%
Disagree	1,3%	3,1%	5,6%	3,2%	4,8%	0,0%	0,0%	3,0%
Neutral/I don't know	10,7%	9,4%	15,7%	25,0%	18,3%	8,2%	43,9%	19,6%
Agree	62,7%	46,9%	44,9%	47,6%	33,7%	63,3%	43,9%	47,5%
Strongly agree	24,0%	40,6%	33,7%	17,7%	40,4%	28,6%	8,8%	27,2%
Less waste produced								
Strongly disagree	1,3%	3,1%	1,1%	6,5%	1,0%	0,0%	1,8%	2,5%
Disagree	1,3%	3,1%	4,5%	6,5%	6,7%	0,0%	3,5%	4,3%
Neutral/I don't know	18,7%	31,3%	24,7%	20,2%	24,0%	26,5%	15,8%	22,3%
Agree	54,7%	37,5%	50,6%	45,2%	33,7%	46,9%	59,6%	46,4%
Strongly agree	24,0%	25,0%	19,1%	21,8%	34,6%	26,5%	19,3%	24,5%
Less greenhouse gases produced								
Strongly disagree	1,3%	0,0%	0,0%	6,5%	1,9%	0,0%	1,8%	2,3%
Disagree	1,3%	3,1%	10,1%	4,8%	6,7%	2,0%	5,3%	5,3%
Neutral/I don't know	32,0%	28,1%	32,6%	20,2%	34,6%	16,3%	28,1%	27,7%
Agree	48,0%	43,8%	42,7%	46,8%	32,7%	46,9%	50,9%	43,8%
Strongly agree	17,3%	25,0%	14,6%	21,8%	24,0%	34,7%	14,0%	20,9%
Benefits for the environment (land, water, biodiversity)								
Strongly disagree	1,3%	0,0%	0,0%	8,1%	1,9%	0,0%	3,5%	2,8%
Disagree	2,7%	6,3%	7,9%	2,4%	1,9%	0,0%	1,8%	3,2%
Neutral/I don't know	10,7%	15,6%	14,6%	11,3%	16,3%	8,2%	14,0%	13,0%
Agree	50,7%	43,8%	62,9%	51,6%	42,3%	51,0%	52,6%	51,1%
Strongly agree	34,7%	34,4%	14,6%	26,6%	37,5%	40,8%	28,1%	29,8%
Benefits for the climate change								
Strongly disagree	1,3%	0,0%	0,0%	6,5%	1,9%	0,0%	1,8%	2,3%
Disagree	1,3%	3,1%	10,1%	4,8%	6,7%	2,0%	5,3%	5,3%
Neutral/I don't know	32,0%	28,1%	32,6%	20,2%	34,6%	16,3%	28,1%	27,7%
Agree	48,0%	43,8%	42,7%	46,8%	32,7%	46,9%	50,9%	43,8%
Strongly agree	17,3%	25,0%	14,6%	21,8%	24,0%	34,7%	14,0%	20,9%
Sustainable economic growth								
Strongly disagree	2,7%	0,0%	0,0%	8,1%	3,8%	0,0%	5,3%	3,6%
Disagree	0,0%	3,1%	3,4%	4,0%	4,8%	4,1%	14,0%	4,5%
Neutral/I don't know	20,0%	25,0%	31,5%	21,0%	27,9%	26,5%	49,1%	27,7%
Agree	54,7%	40,6%	49,4%	44,4%	33,7%	40,8%	24,6%	41,9%
Strongly agree	22,7%	31,3%	15,7%	22,6%	29,8%	28,6%	7,0%	22,3%

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D. YOUR PERCEPTION OF THE BARRIERS OF USING BIO-BASED PRODUCTS

D1. What are your perceived barriers in using bio-based products:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Increased deforestation and decreasing biodiversity								
Strongly disagree	2,7%	3,1%	2,2%	12,9%	13,5%	4,1%	3,5%	7,4%
Disagree	12,0%	15,6%	15,7%	25,8%	23,1%	20,4%	17,5%	19,6%
Neutral/I don't know	49,3%	46,9%	30,3%	36,3%	40,4%	40,8%	70,2%	42,6%
Agree	28,0%	25,0%	33,7%	22,6%	15,4%	34,7%	8,8%	23,6%
Strongly agree	8,0%	9,4%	18,0%	2,4%	7,7%	0,0%	0,0%	6,8%
Competition with food production								
Strongly disagree	2,7%	0,0%	3,4%	7,3%	10,6%	4,1%	5,3%	5,7%
Disagree	5,3%	31,3%	11,2%	19,4%	16,3%	32,7%	14,0%	16,8%
Neutral/I don't know	33,3%	21,9%	23,6%	37,1%	38,5%	28,6%	33,3%	32,5%
Agree	41,3%	28,1%	49,4%	30,6%	25,0%	28,6%	42,1%	35,1%
Strongly agree	17,3%	18,8%	12,4%	5,6%	9,6%	6,1%	5,3%	10,0%
Increased fertilizers and pesticides used in agriculture								
Strongly disagree	2,7%	6,3%	2,2%	10,5%	15,4%	12,2%	5,3%	8,3%
Disagree	5,3%	15,6%	13,5%	31,5%	24,0%	30,6%	15,8%	20,6%
Neutral/I don't know	30,7%	28,1%	33,7%	41,1%	37,5%	34,7%	50,9%	37,4%
Agree	44,0%	37,5%	34,8%	16,1%	12,5%	16,3%	17,5%	24,0%
Strongly agree	17,3%	12,5%	15,7%	0,8%	10,6%	6,1%	10,5%	9,8%
Overexploitation of natural resources								
Strongly disagree	2,7%	6,3%	1,1%	10,5%	14,4%	4,1%	5,3%	7,2%
Disagree	10,7%	21,9%	18,0%	33,1%	28,8%	16,3%	14,0%	22,3%
Neutral/I don't know	25,3%	18,8%	21,3%	35,5%	26,9%	51,0%	49,1%	31,9%
Agree	40,0%	40,6%	47,2%	20,2%	17,3%	18,4%	24,6%	28,5%
Strongly agree	21,3%	12,5%	12,4%	0,8%	12,5%	10,2%	7,0%	10,2%
Limited market availability								
Strongly disagree	4,0%	0,0%	0,0%	11,3%	5,8%	0,0%	3,5%	4,7%
Disagree	4,0%	12,5%	12,4%	8,1%	11,5%	14,3%	8,8%	9,8%
Neutral/I don't know	26,7%	18,8%	21,3%	27,4%	25,0%	40,8%	29,8%	26,8%
Agree	45,3%	43,8%	47,2%	42,7%	42,3%	36,7%	52,6%	44,3%
Strongly agree	20,0%	25,0%	19,1%	10,5%	15,4%	8,2%	5,3%	14,3%
High prices								
Strongly disagree	2,7%	0,0%	0,0%	8,9%	1,9%	4,1%	3,5%	3,6%
Disagree	1,3%	3,1%	3,4%	4,8%	6,7%	6,1%	3,5%	4,3%
Neutral/I don't know	25,3%	15,6%	10,1%	15,3%	20,2%	14,3%	12,3%	16,4%
Agree	41,3%	50,0%	49,4%	49,2%	44,2%	44,9%	49,1%	46,8%
Strongly agree	29,3%	31,3%	37,1%	21,8%	26,9%	30,6%	31,6%	28,9%
Lower/ limited performance								
Strongly disagree	6,7%	3,1%	3,4%	8,1%	2,9%	8,2%	5,3%	5,5%
Disagree	14,7%	18,8%	28,1%	30,6%	24,0%	22,4%	21,1%	24,2%
Neutral/I don't know	60,0%	31,3%	39,3%	45,2%	35,6%	42,9%	54,4%	44,3%
Agree	13,3%	43,8%	25,8%	14,5%	24,0%	22,4%	15,8%	20,8%
Strongly agree	5,3%	3,1%	3,4%	1,6%	13,5%	4,1%	3,5%	5,3%

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E. Demographic Info of the Sample

Age

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Under 24	5,3%	12,5%	12,4%	5,6%	10,6%	6,1%	42,1%	12,1%
25-40	57,3%	37,5%	58,4%	39,5%	60,6%	65,3%	50,9%	52,8%
40-65	36,0%	50,0%	23,6%	53,2%	26,0%	28,6%	7,0%	33,0%
65+	1,3%	0,0%	5,6%	1,6%	2,9%	0,0%	0,0%	2,1%

Country of origin completing each national version of the questionnaire

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Austria		6,3%						0,4%
Belgium				0,8%			1,8%	0,4%
Bulgaria								
Cyprus			1,1%					0,2%
Czech Republic							3,5%	0,4%
Denmark								
Finland								
France				0,8%				0,2%
Estonia		3,1%	97,8%					16,6%
Germany		3,1%		0,8%				0,4%
Greece	98,7%	28,1%						15,7%
Hungary		3,1%						0,2%
Ireland		3,1%						0,2%
Italy		12,5%			99,0%			20,2%
Latvia								
Lithuania		3,1%						0,2%
Luxembourg								
Malta		3,1%						0,2%
Netherlands		9,4%						0,6%
Poland								
Portugal						100,0%		9,2%
Romania								
Slovakia							94,7%	10,2%
Slovenia								
Spain				96,0%	1,0%			22,6%
Sweden		3,1%						0,2%
Switzerland		0,0%						
UK	1,3%	21,9%	1,1%	1,6%				2,1%
Other								

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Education Level

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
High school level	1,3%	9,4%	9,0%	19,4%	21,2%	18,4%	49,1%	17,9%
University level	17,3%	46,9%	27,0%	66,1%	46,2%	57,1%	50,9%	45,1%
Post-graduate level	80,0%	40,6%	60,7%	8,1%	31,7%	18,4%	0,0%	33,8%
Other	1,3%	3,1%	3,4%	6,5%	1,0%	6,1%	0,0%	3,2%

Do you work, research, teach etc. in the field of bioeconomy and bio-based products?

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Yes	8,0%	59,4%	19,1%	9,7%	18,3%	14,3%	0,0%	15,1%
No	92,0%	40,6%	80,9%	90,3%	81,7%	85,7%	100,0%	84,9%

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