



D2.2 Public perception of bio-based products

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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, economy and environment.

The foundation upon which these BIOWAYS objectives have been met is an understanding of the characteristics and potential of bio-based products and applications as well as an analysis of the level of public awareness and acceptance of bio-based products.

To carry out this analysis, an EU-wide online survey was undertaken in parallel with desktop analysis of relevant studies, aiming to collect qualitative and quantitative data regarding the public perception on bio-based products.

As a first step, relevant studies and reports on the public awareness of bio-based products and applications were reviewed and useful information gathered to provide the context for the questionnaire. Subsequently, a questionnaire consisting of six groups of questions was generated designed to evaluate the:

- level of public awareness in and engagement with bio-based products;
- public confidence in bio-based products and the reasons for using them or not;
- public perception of the benefits of using bio-based products;
- public perception of the barriers that prevent a greater use of bio-based products;
- public opinion on action to be taken so that the bio-based economy can reach its full potential.

The questionnaire was translated into seven European languages (English, Portuguese, Greek, Italian, Spanish, Slovak and Estonian) and was launched on the web using Google Forms tool on April 5th 2017. The online questionnaire remained live until May 10th 2017 and was disseminated through BIOWAYS' official website (www.bioways.eu), partners' personal and business networks, social media, EU consumer networks and citizens associations.

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

Of these respondents, 36.2% believe they have sufficient knowledge of bio-based products as opposed to 31.4% who stated they don't and 32.3% who stated "Neutral/I don't know".

The respondents were able to identify that products such as packaging material (80.8%), bioenergy for heating and electricity (80.5%), pulp and paper (72.1%), personal/home care

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products (68.6%), fibres and textiles (66.2%), catering products (65.7%), and construction/building materials (54.9%) can have bio-based content. However, when the respondents were asked to name examples of bio-based products that they use, in many cases appeared that the term “bio-based products” was associated incorrectly with the term “organic products”.

More than a half of the respondents (50.9%), indicated that information about the benefits of bio-based products is not readily available especially as far as it concerns:

- the bio-based content and the environmental performance of bio-based products that they buy;
- the origin and production process of bio-based products that they purchase;
- the performance and functionality of bio-based products compared to their non-bio-based equivalents.

There appears to be some confusion amongst the public about the labelling of bio-based products. According to the survey, 33% can “easily recognize” a bio-based product from its label, while 25.2% disagrees with that and 21.7% are unaware, responding “neutral/I don’t know”. Furthermore, 36.9% of the respondents seem not to be aware or cannot recognize whether the packaging of a product is bio-based or not.

More than 40% of respondents believe that bio-based products are “trustworthy” as far as their bio-based content and environmental benefits are concerned, but less than 30% agrees that bio-based products are “trustworthy” in relation to their origin, production process and their stated health benefits.

Additionally, over 60%, claimed that they had never been engaged in informative actions relevant to bio-based products and the bio-economy.

The majority of the respondents (66.6%) clearly expressed a preference for bio-based products over their non-bio-based equivalents, although a considerable percentage of 25.9% wasn’t able to answer with certainty, responding “neutral/I don’t know”. The environmental benefits of bio-based products and the perception that they are safe to use were given as the main reasons for consumers choosing them over their fossil-fuel derived counterparts. However, their high price and limited availability restrain consumers from selecting bio-based products.

A rate of 80% stated that their overall perception of bio-based products is positive and more than 60% seemed to be aware of the environmental benefits of using them. Nevertheless, 40% of the sample is not confident that the use of bio-based products contributes to sustainable economic growth and the creation of new jobs.

Regarding the barriers that exist and prevent the use of bio-based products, 30% of respondents didn’t feel confident in assessing the possible barrier scenarios (neutral/I don’t know). The collected answers also indicated that 30% of consumers agree that the increased use of biological resources normally used in food production for non-food use will have a negative impact on our ability to produce enough food and may also lead to rising food prices.

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This group also believes that the use of fertilizers and other chemicals to maintain an increase in the production of some bio-based products may lead to increased agricultural pollution. Despite this, they disagree that the production of bio-based products may lead to the overexploitation of natural resources or to increased deforestation and decreasing biodiversity.

Finally, respondents identified 5 measures that should be implemented in order to facilitate the growth of bioeconomy:

- incentives for consumers to buy sustainable, bio-based products (66.8%);
- a clear certification and labelling regulation framework for bio-based products and packaging (65.7%);
- educational material to inform citizens and in particular younger people about bio-based products (54.4%);
- support for new bio-based industries and the greening of traditional industries (51.3%);
- more informative online resources and online portals where information can be exchanged about bio-based products and their applications as well as information about producers (48.7%).

The results of the online questionnaire helped with the analysis of public opinion about bio-based products and thus the identification and development of the key messages for BIOWAYS communication. This insight will also help with the development of BIOWAYS information and training materials, which are now being designed with the aim of raising public awareness of the bio-economy in Europe. Furthermore, the knowledge gained will form the basis for discussions taking place during the activities of Task 4.2 “Organization of thematic workshops, social hack days and e-conferences” and the findings will also be used as a benchmark for the Monitoring and Assessment Plan, D5.1.

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2. INTRODUCTION

This report was prepared as part of Task 2.2 “Identification and analysis of public perception of bio-based products” of the BIOWAYS project (www.bioways.eu). The BIOWAYS project is funded by the Bio-based Industries Joint Undertaking (BBI-JU) under the EU’s Horizon 2020 Framework Programme (Grant Agreement No 760762). The aim of the project is to raise public awareness of bio-based products and to promote their applications and benefits to society as well as to raise the profile of bio-based industries, using a variety of communication techniques and educational tools and materials.

The aim of this report is to present the statistical and content analysis of an EU-wide online survey conducted under Task 2.2 to collect the insights of EU citizens into:

- their level of awareness and acceptance of bio-based products;
- their societal needs and concerns;
- how they perceive the benefits of bio-based products and the implications of their use;
- their level of and reasons for engagement in the bioeconomy as well as the reasons that inhibit their engagement;
- how they are involved or not in the bioeconomy and possible ways that they would like to be further involved.

The ultimate goal of the report is 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. Furthermore, the knowledge gained will form the basis for discussion due to take place during the activities of Task 4.2 “Organization of thematic workshops, social hack days and e-conferences” and the findings will be used as a benchmark for the Monitoring and Assessment Plan, D5.1.

A second round of this online survey will be launched in the summer of 2018, during the last phase of the project. The aim of the second survey will be to feed the development of recommendations and best practices under Task 5.3 “Recommendations and good practices” with updated information. The findings of this second online survey will be summarized in an updated version of this report (D2.4 Public perception of bio-based products- societal needs and concerns: Updated version), which will be delivered in September 2018. This deliverable will be further complemented by D4.2 (Report on public perception on bio-based products and applications following 7 thematic workshops) which will be based on the results collected during the events organised in the framework of T4.2.

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: the set of economic activities relating to the invention, development, production and use of biological products and processes.²

¹ CEN, 2014.

² OECD, 2009.

4. METHODOLOGY

The current research aims to identify and analyse the level of public awareness on bio-based products and the public perception of their value. In implementing this task, two actions were undertaken:

- a desktop analysis of relevant, recent studies and reports on the public perception of bio-based products;
- an online survey based on a structured questionnaire.

The information gathered from the review of relevant studies and reports was used along with the key findings of the in-depth analysis that was carried out under the Task 2.1 “Review and assessment of the bio-based products, current market uptake and applications and their future potential”, in order to structure the questionnaire. The questionnaire in its final form included six groups of questions about the public’s:

- level of awareness in and engagement with bio-based products;
- confidence in bio-based products and the reasons for using them or not using them;
- perception of the benefits of using bio-based products;
- perception of the barriers that prevent a greater use of bio-based products;
- opinion of the actions needed to ensure the bio-economy reaches its full potential;
- general comments and demographic info.

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). The survey was launched on April 5th 2017 and remained live online until May 10th 2017.

The survey was actively disseminated 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 and citizens associations. As the aim of the survey was to explore the perceptions of the general public rather than of people with a specific knowledge or expertise in the bio-economy, the dissemination channels used did not include bio-based related market sectors networks or contacts.

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 fine-tuning of the foreseen dissemination and education activities about bio-based products that will be more relevant for targeted audience. It also provides a good starting point for future surveys that will be conducted in the project that will have the potential to measure changing perceptions of the bioeconomy.

5. RELEVANT STUDIES AND REPORTS

The first step taken in this analysis of public perception of bio-based products included a review of past studies and reports into the perception of bio-based products of the end consumer. The findings of this analysis and the interviews carried out under the BIOWAYS Task 2.1 (D2.1 Review and assessment of the bio-based products, current market uptake and applications and their future potential) regarding major public concerns about bio-based products were also taken into account.

In the following paragraphs, the key messages of the Open-Bio project's study into acceptance factors of bio-based products for consumer focus group are presented along with results derived from the survey by the European Commission's DG for Research and Innovation (2011), into the potential benefits of the bio-based economy.

For the purposes of the Open-Bio project³, consumer focus groups with 107 members from 6 European countries were interviewed about consumer acceptance of bio-based products and possible acceptance factors. Particular focus was made on the perception and relevant associations of the term "bio-based" in general and on specific bio-based products and labelling, as consumers' positive perceptions are a prerequisite for the acceptance and success of any product in the market.

A basic conclusion from the consumer focus groups of the Open-Bio project was that consumers often seem to lack a full understanding of the term "bio-based", as they do not know the term and they do not understand the concept. The unfamiliarity leads to mixed positive and negative associations. Consumers frequently associate in general the term "bio-based" with environmental friendliness but on the other hand some negative implications were noted, such as regarding the origin and disposal aspects of bio-based products. A more suitable term might be "based on renewable sources" or "based on plants", which may be more easily understood and may be less susceptible to suspicions such as "green washing".

It was also concluded that although consumers might not know much about the term bio-based, they still do want a lot of detailed, technical information at product level. They assess labels as being helpful when purchasing a product. Therefore, the label should be simple and understandable and it should be clear what a bio-based label adds to already existing labels. Also, consumers want to have access to a coherent story about all aspects of the product covering

- (i) all stages of production and use (including disposal) and
- (ii) all sustainability aspects including environmental and social impacts.

³ Open-Bio, 2014

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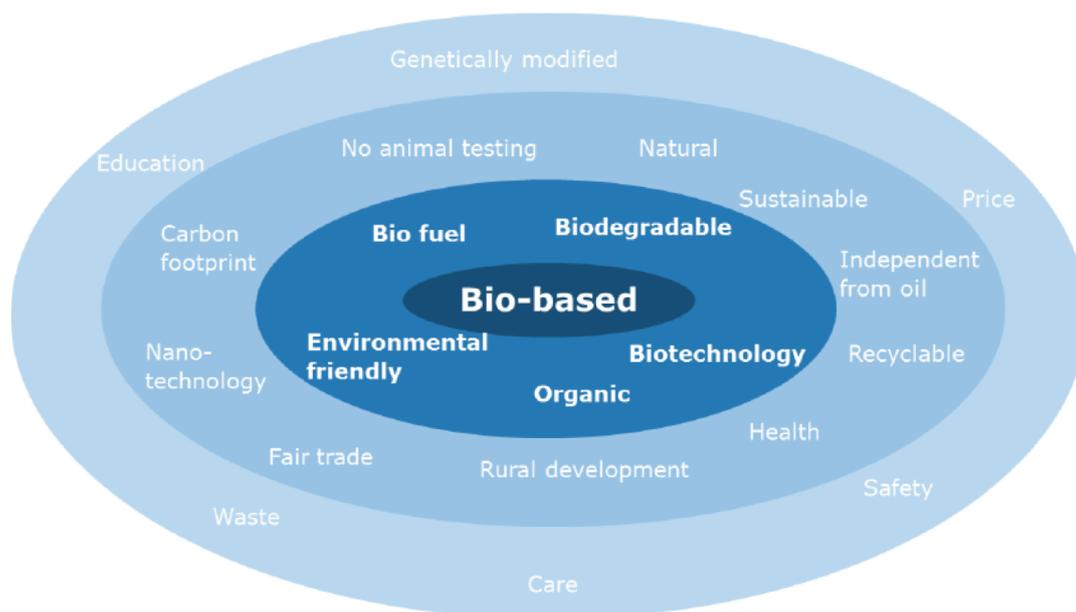


Figure 1: Associations with the term “bio-based” according to the Open-Bio focus groups’ participants⁴

Regarding the different product-categories of bio-based products, participants in the Open-Bio project focus groups associated “bio-based” with food products, clothing, cosmetic and detergents.

For all different product categories studied, the main question that appeared was “what’s in it for me?”. Consumers **consider aspects such as quality, usability, durability etc. as important to them**. It depends on the specific bio-based product which of such aspects is deemed the most relevant. As a general conclusion, it emerged that bio-based is not a decisive characteristic for buying or trying a product but rather as an additional plus. Participants in focus groups wanted to buy or try bio-based products to contribute to helping the environment, the future or to their own well-being or healthiness. Besides these long-term goals participants also noted immediate benefits, such as price, convenience, or aesthetics. Barriers for buying the products involve some of the same arguments, such as price, aesthetics, and convenience. Additionally, a low involvement and distrust were mentioned as barriers for the intention to try or buy a specific bio-based product.

In the survey conducted by the European Commission’s DG for Research and Innovation (2011)⁵, analyzing 225 answers through a public consultation, about the potential benefits of the bio-economy, according to the vast majority of respondents (72.6 %), the reduction of waste and pollution is the potential benefit of the bio-economy that could be achieved in the short term (by 2020). There is also a strong consensus on the possible achievement in the

⁴ Open-Bio, 2014

⁵ European Commission’s DG for Research and Innovation, 2011

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short term of the provision of agricultural advisory services and/or knowledge transfer systems to farmers (66.0 %) and the increase in the use of bio-waste and other waste streams (64.0 %).

In the question about the potential risks associated with the development of the European bio-economy in the future and what should be carefully taken into account when preparing a new European strategy and action plan, 'food security and resources in developing countries put under pressure because of increased production of non-food use' was ranked by far as the most significant potential risk by respondents. The risks of the 'over-exploitation of natural resources and decreasing biodiversity' and 'increased deforestation due to food and non-food production' were the next two risks considered as very important by respondents.

6. BIOWAYS ONLINE QUESTIONNAIRE SURVEY

6.1. DESCRIPTION OF THE SAMPLE

The BIOWAYS survey sample included in total 452 respondents from various EU countries (Figure 2), covering several age groups (Figure 3). The greater numbers of answers were collected in the countries where the questionnaire was disseminated in the national language. The majority of participants were 25-40 and 40-65 years old and with various professions.

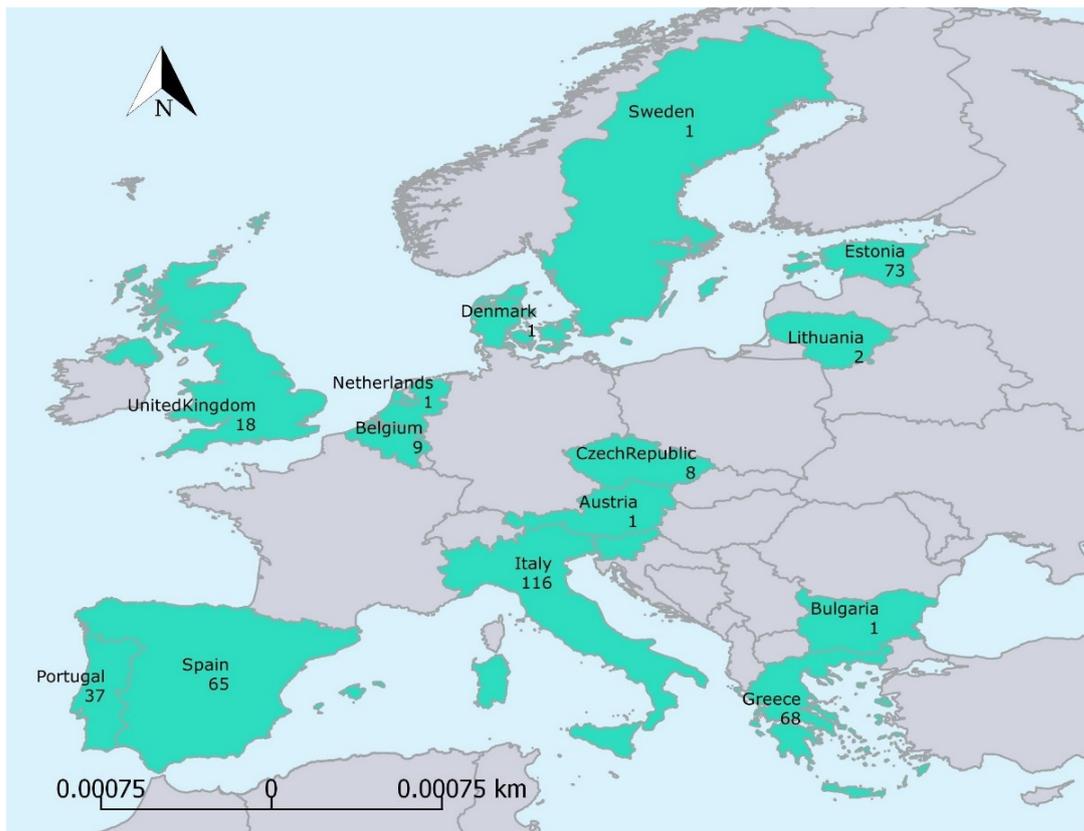


Figure 2: Number of completed questionnaires per country (total number: 452 - 8 were defined as "other").

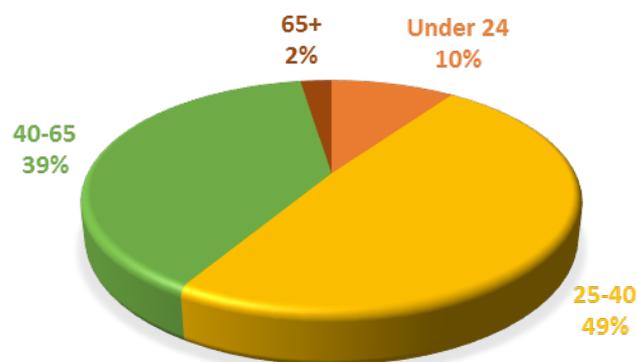


Figure 3: Age of the survey participants

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.

Although a satisfying percentage (29.6%) feels sufficiently aware about bio-based products, there is, however, a significant percentage of respondents (32,3%) who cannot estimate their level of awareness (answering “Neutral/ I don’t know” in Figure 4), indicating a possible misunderstanding of the term “bio-based”.

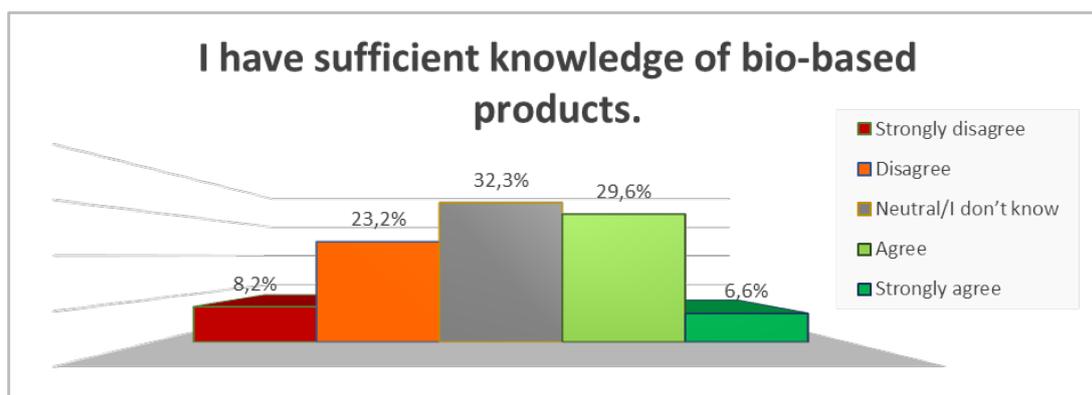


Figure 4: Answers (%) to survey question “I have sufficient knowledge of bio-based products”

From a list of products, the respondents were asked to identify which of them can be produced using bio-based materials. A rate of around 80% of the participants indicated packaging material (beverage bottles, food packaging etc.) and carrier bags as well as bioenergy for heating and electricity. Pulp and paper and biogas used for heating and electricity, was identified by 72.1% of the respondents. More than 65% of the answers included the choice of catering products, fibers and textiles and personal/home care products. Cleaning materials were identified by the 59.5% of the sample and construction/building materials by the 54.9% of it. In contrast, lubricants and surfactants were only identified by 23% and 11.5% respectively (Figure 5).

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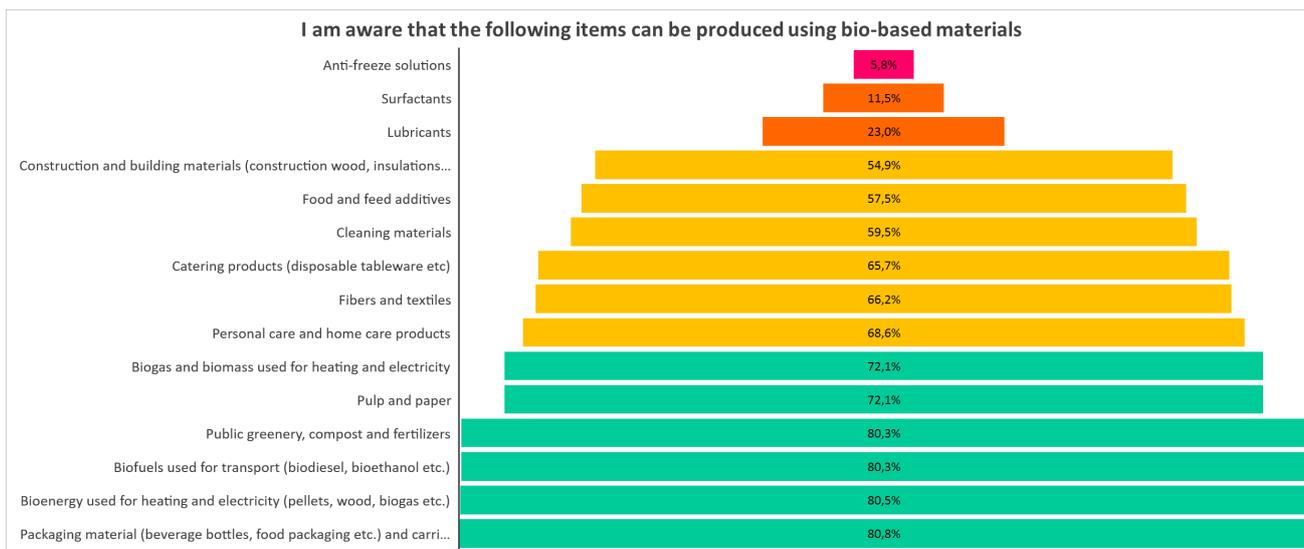
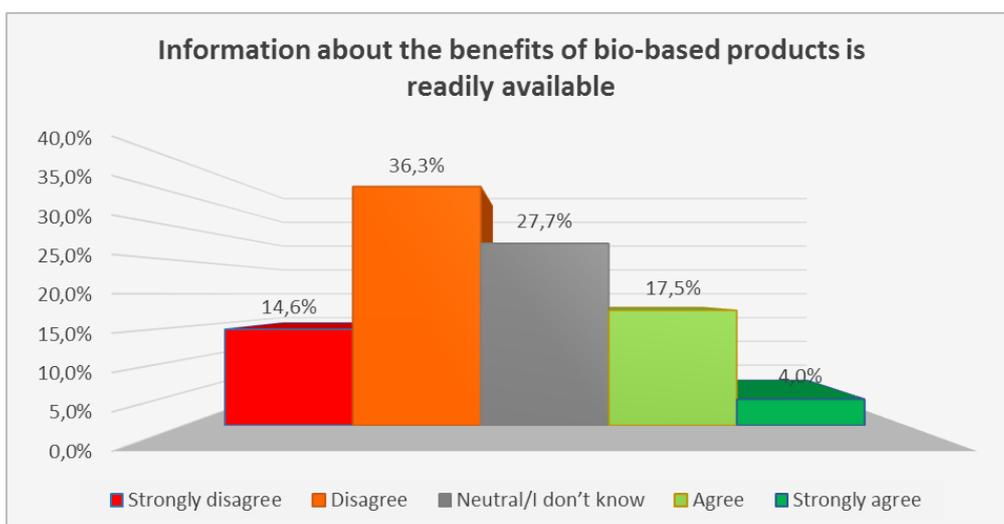


Figure 5: Answers (%) to survey question “I am aware that the following items can be produced using bio-based materials”

On the other hand, when the respondents were asked to name examples of bio-based products that they use, it was clear that public incorrectly associates the term “bio-based products” with “organic products”. For example in some countries the term “bio” is also used to describe organic products, generating that way concerns and confusion among the consumers. This is another fact implying that the general public does not fully understand the term bio-based.

This misconception is one that could be linked to the concern revealed in the survey that information about bio-based products might not be readily available to the general public. In the question asking whether information about the benefits of bio-based products is readily available, more than 50% of respondents answered that there is not enough available information and 27.7% could not answer with certainty (neutral/ I don’t know) (Figure 6).



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Figure 6: Answers (%) to survey question “Information about the benefits of bio-based products is readily available”

More specifically, as shown in Figure 7, 35%-40% of the survey respondents believe that they do not have enough information or that they can not easily find information about:

- the bio-based content and the environmental performance of bio-based products that they buy;
- the origin and production processes of bio-based products that they purchase;
- the performance and functionality of bio-based products compared to their non-bio-based equivalents.

An additional 20% of the respondents totally disagree with these statements and more than a 22% could not answer with certainty.

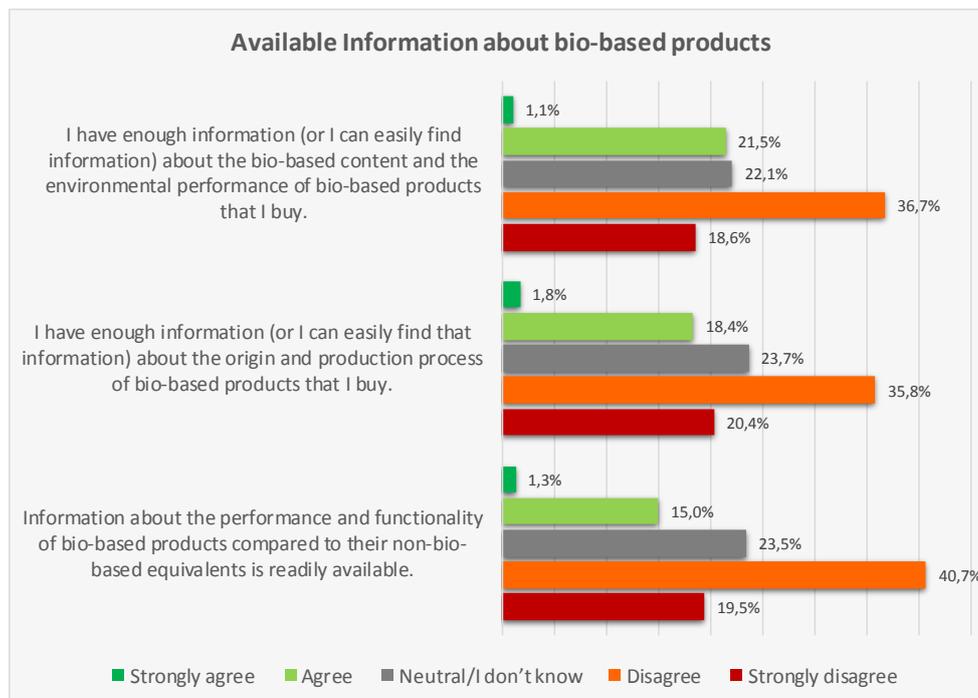


Figure 7: Answers (%) about available information on bio-based products

Regarding the labelling of bio-based products, there appears to be some public confusion. In the survey, 33% of respondents answered that they can easily recognize a bio-based product from its label, while 25.2% of them disagreed with this and 21.7% of them stated that they were unaware (neutral/I don't know) (Figure 8). Additionally, 36.9% of the respondents seemed unable to recognize whether a product is bio-based or not by its packaging. (Figure 8).

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This apparent confusion about labelling could be a result of an assumption derived from the analysis of relevant literature carried out in T2.1, where it is indicated that there is no uniform label for bio-based products and, where labels do exist in the market they are not reliable⁶.

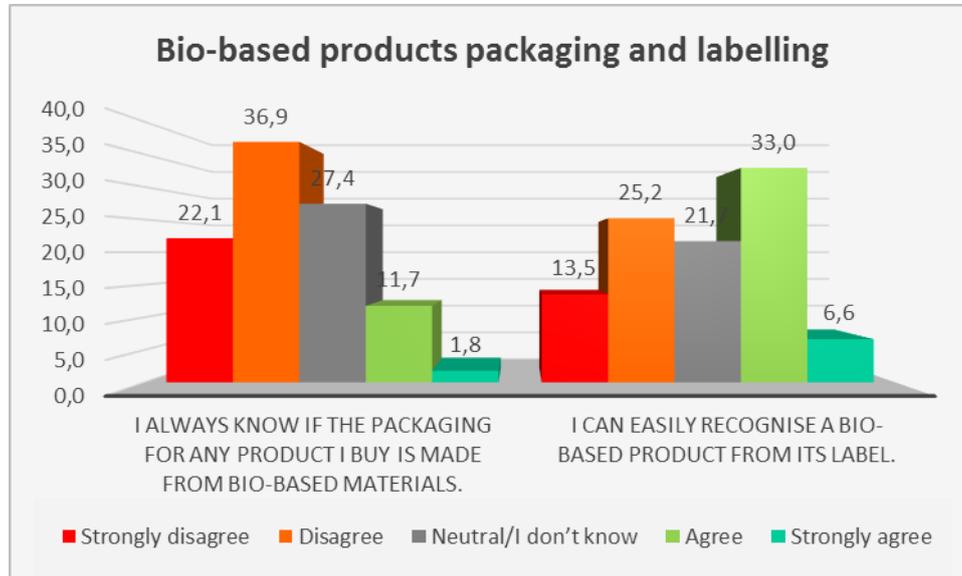


Figure 8: Respondents' awareness about packaging material and labelling (% of respondents)

Regarding 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, environmental and health benefits are concerned (>40%), but not as far as their clearly labelling is concerned (Figure 9).

⁶BIOTIC, 2015

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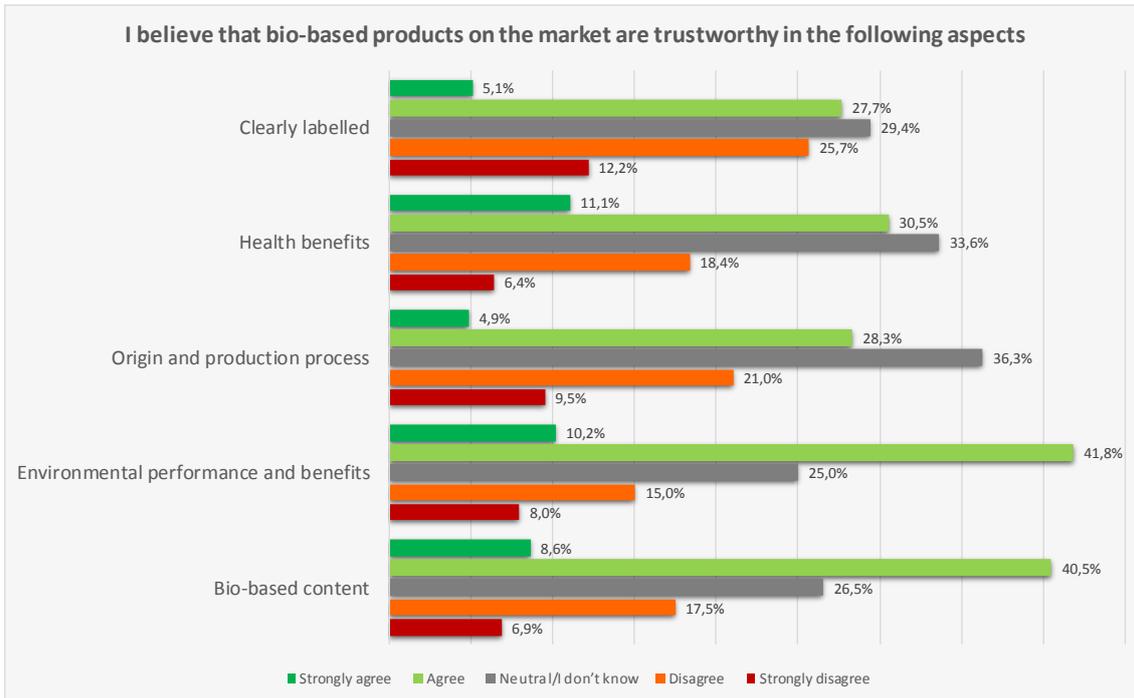


Figure 9: Answers (%) about which aspects of bio-based products on the market are trustworthy

Talking about access to information, more than 60% of respondents (Figure 10) stated that they have never been engaged in relevant informative actions such as:

- informative online resources and online portals about bio-based products and their applications and information about producers;
- communications and informative events about bio-based products and the bioeconomy (events, public discussions, discussions in the media etc);
- surveys and research about bio-based products and the bioeconomy;
- decision-making processes (public consultations etc).

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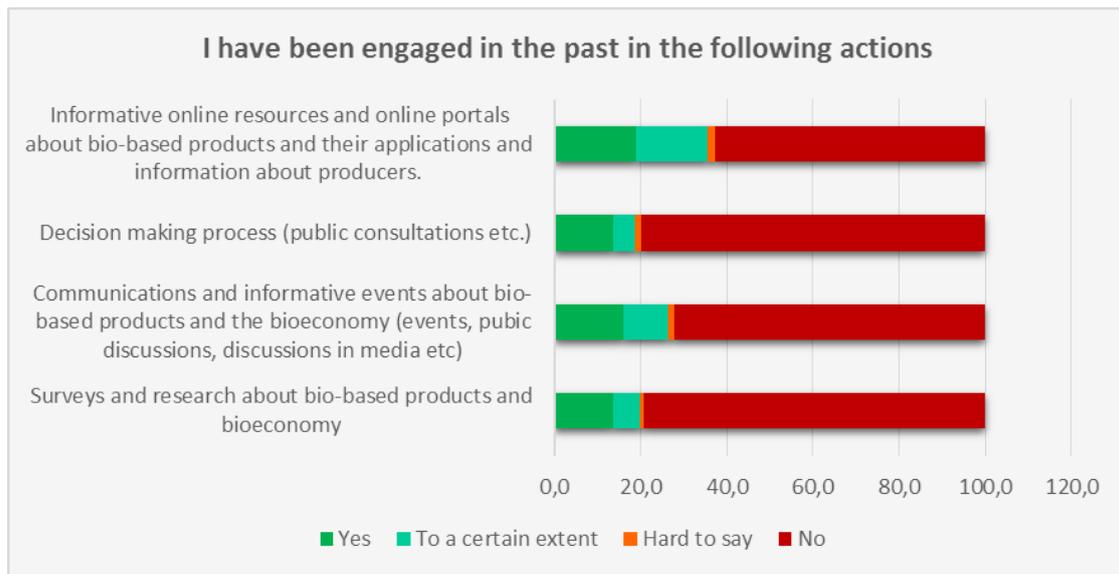


Figure 10: Level of engagement in informative/participative actions (% of respondents)

6.3. CONFIDENCE IN BIO-BASED PRODUCTS AND REASONS FOR ENGAGEMENT IN THE BIOECONOMY

In this section of the BIOWAYS online survey, questions were asked to identify the level of public confidence in bio-based products and to assess why these products are accepted or rejected.

The majority of the respondents (66.6%) clearly expressed a preference for bio-based products over their non-bio-based equivalents. It should be taken into consideration, however, that a significant percentage of respondents (25.9%) did not express this preference with certainty (neutral/I don't know) (Figure 11). The same distribution pattern in the answers was observed in each survey country (Figure 12).

The survey revealed that the main reasons why consumers choose bio-based products over conventional products are their environmental benefits ("the use of bio-based products has a positive ecological, environmental, health impact" and "by using bio-based products, I contribute to reducing carbon emissions that cause climate change") and there is a clear perception that they are safe to use ("bio-based products are safe to use").

On the other hand, the survey also reveals that the reasons why consumers refrain from selecting bio-based products is because of their high cost ("I don't prefer bio-based products because they are more expensive than non-bio-based products"); that they have limited availability ("I cannot easily find bio-based products on the market"); and that there is a lack of relevant information ("I do not have sufficient information or knowledge about the benefits of using bio-based products").

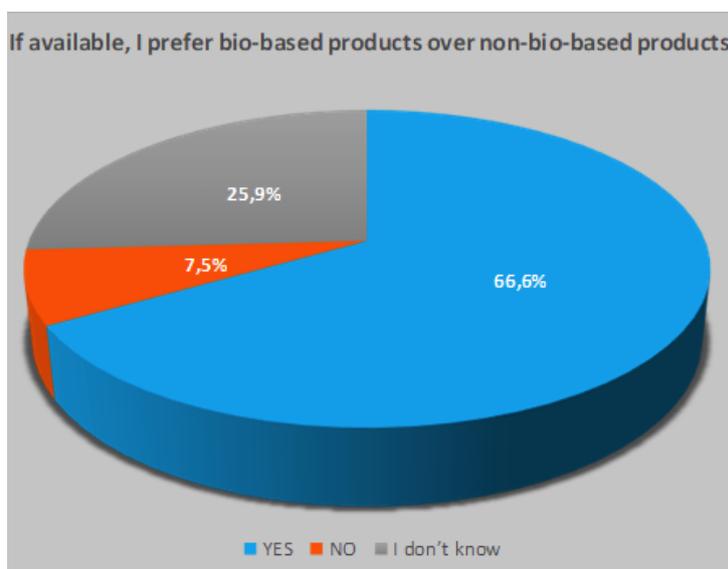


Figure 11: Preference towards bio-based products (% of respondents)

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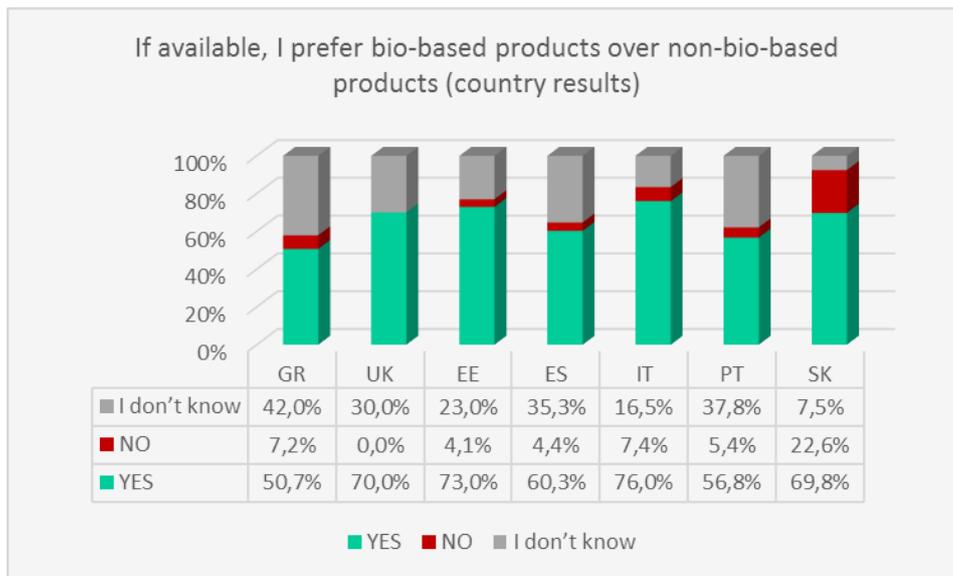


Figure 12: Preference towards bio-based products (% of respondents per country)

6.4. THE PERCEIVED BENEFITS OF USING BIO-BASED PRODUCTS

The questions included in this section of the survey were asked to identify what the public believes to be the perceived benefits of using bio-based products.

The vast majority of the respondents (80%) expressed that their overall perception on bio-based products is positive.

An average around 74% of the responders seems to be aware of the perceived environmental benefits and they believe that the use of bio-based products could (Figure 14):

- reduce harmful impacts on natural resources (land, water, biodiversity) (83,6%: 52% agrees and 31,6% strongly agrees);
- contribute to the waste reduction due to waste exploitation (75,8%: 44,7% agrees and 31,2% strongly agrees);
- reduce dependence on non-renewable resources like fossil fuels exploitation (74,5%: 45,1% agrees and 29,4% strongly agrees);
- contribute towards the meeting of global and EU commitments and goals in relation to climate change and the protection of the environment (68,8%: 43,6% agrees and 25,2% strongly agrees);
- contribute to the reduction of greenhouse gas emissions (66,4%:43,7% agrees and 22,7% strongly agrees).

A significant number of respondents (more than 40%) is not confident, however, that the use of bio-based products contributes to the creation of sustainable economic growth and new jobs (Figure 14).

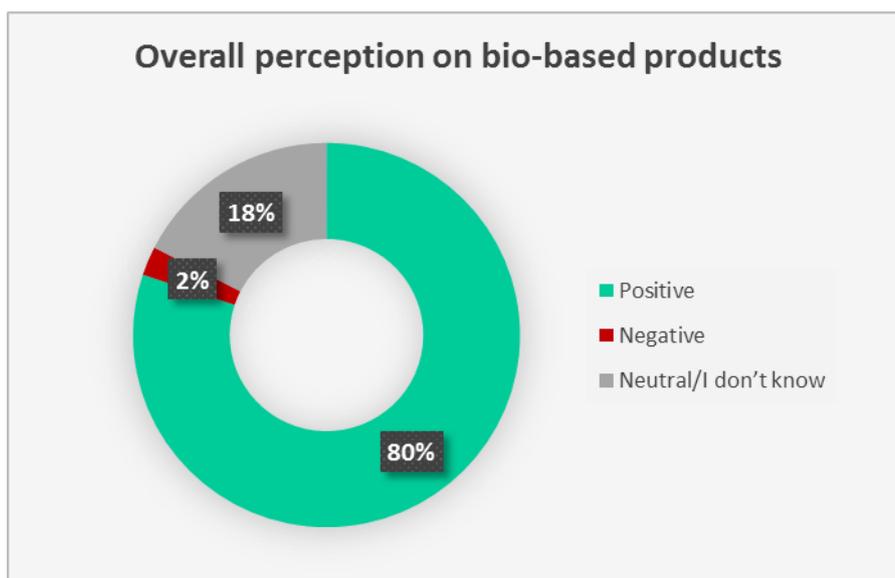


Figure 13: Overall perception of bio-based products (% of respondents)

D2.2 Public perception of bio-based products

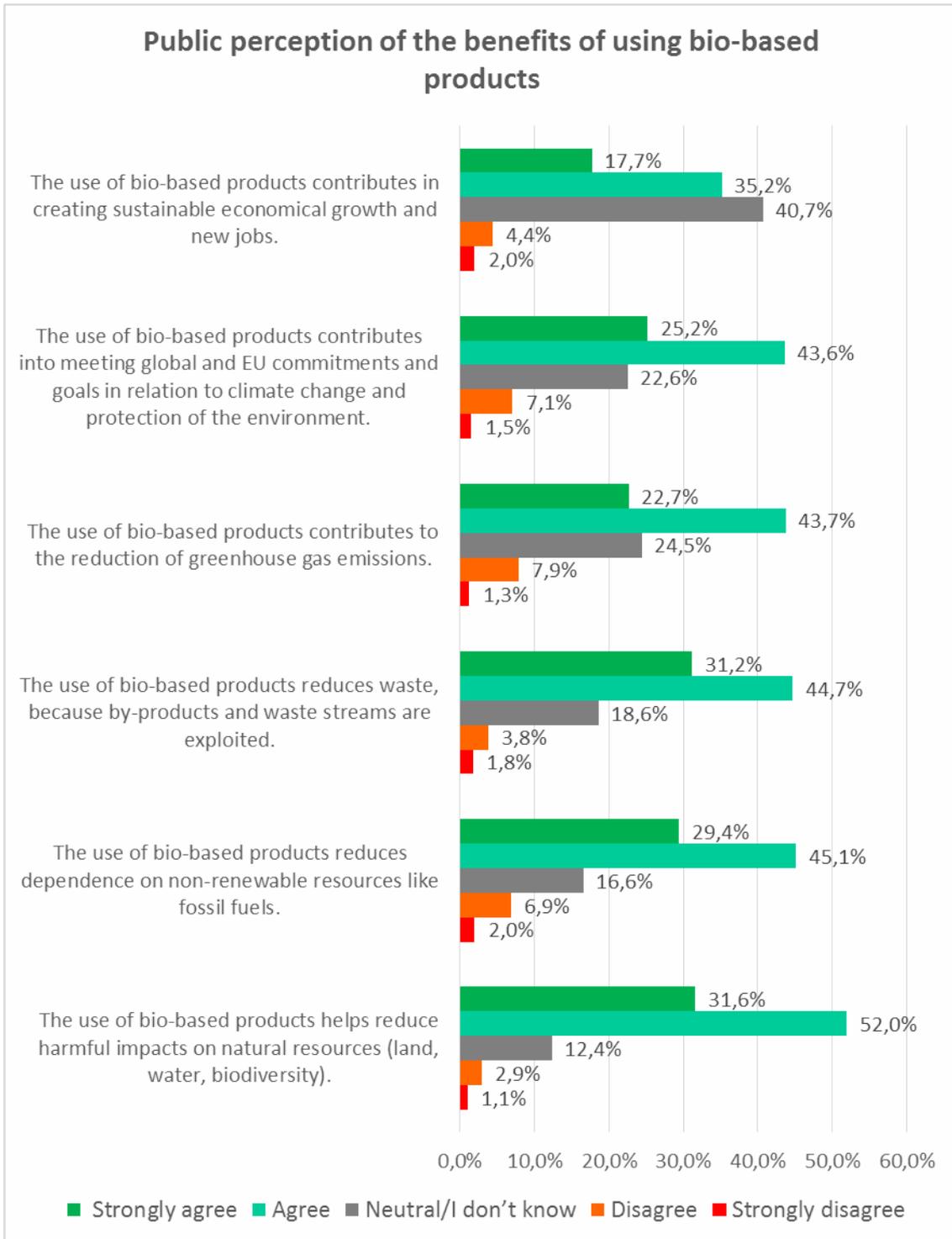


Figure 14: Public Perception of the benefits of using bio-based products (% of respondents)

D2.2 Public perception of bio-based products

6.5. THE PERCEIVED BARRIERS THAT PREVENT A GREATER USE OF BIO-BASED PRODUCTS

In this group of survey questions about the possible barriers that exist and prevent the use of bio-based products, the answers indicate that the respondents did not feel confident in assessing possible scenarios about the barriers to their use. More than 30% of them answered “neutral/I don’t know” (Figure 15).

In general, it appears that consumers disagree that the production of bio based products may lead to the overexploitation of natural resources or to increased deforestation and decreasing biodiversity (Figure 15).

Diversely, more than the 30% of the respondents agree that the increased use of biological resources normally used in food production for non-food use will have a negative impact on our ability to produce enough food and may also lead to rising food prices. Similarly, they believe that the use of fertilizers and other chemicals to maintain an increase in the production of some bio-based products may lead to increased agricultural pollution (Figure 15).

It is important to note that in comments about barriers to the greater use of bio-based products, respondents highlighted the lack of information they had about them and their high cost as reasons why they are not used more.

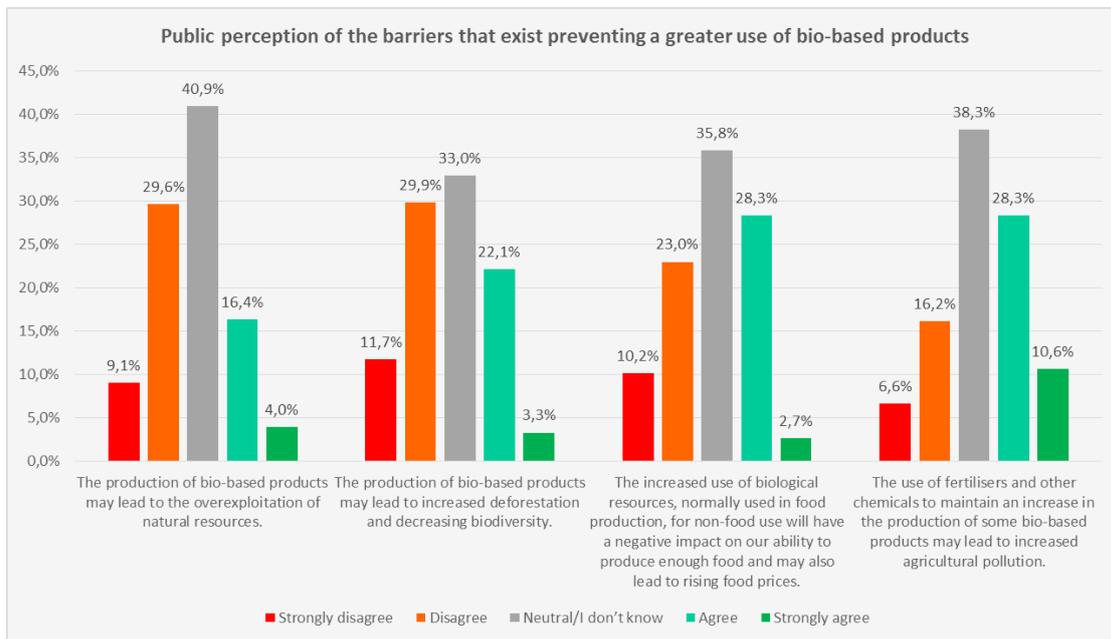


Figure 15: Public perception of the barriers that exist preventing a greater use of bio-based products (% of respondents)

D2.2 Public perception of bio-based products

6.6. RECOMMENDATIONS FOR HOW THE BIOECONOMY CAN REACH ITS FULL POTENTIAL

In the last section of the survey, respondents were asked to indicate what would be useful for the bio-economy to reach its full potential.

The respondents agreed that in order to mobilize the bio- economy and facilitate the growth of the bio-based market, activities and measures should focus on (Figure 16):

- providing incentives to consumers to buy sustainable, bio-based products (66,8%);
- establishing a clear certification and labelling regulation framework for bio-based products and packaging (65,7%);
- developing educational material about bio-based products to inform citizens, younger people in particular (54,4%);
- supporting new bio-based industries and the greening of traditional industries (51,3%);
- generating or reinforcing informative online resources and online portals where information can be exchanged about bio-based products and their applications and information about producers is available (48,7%).

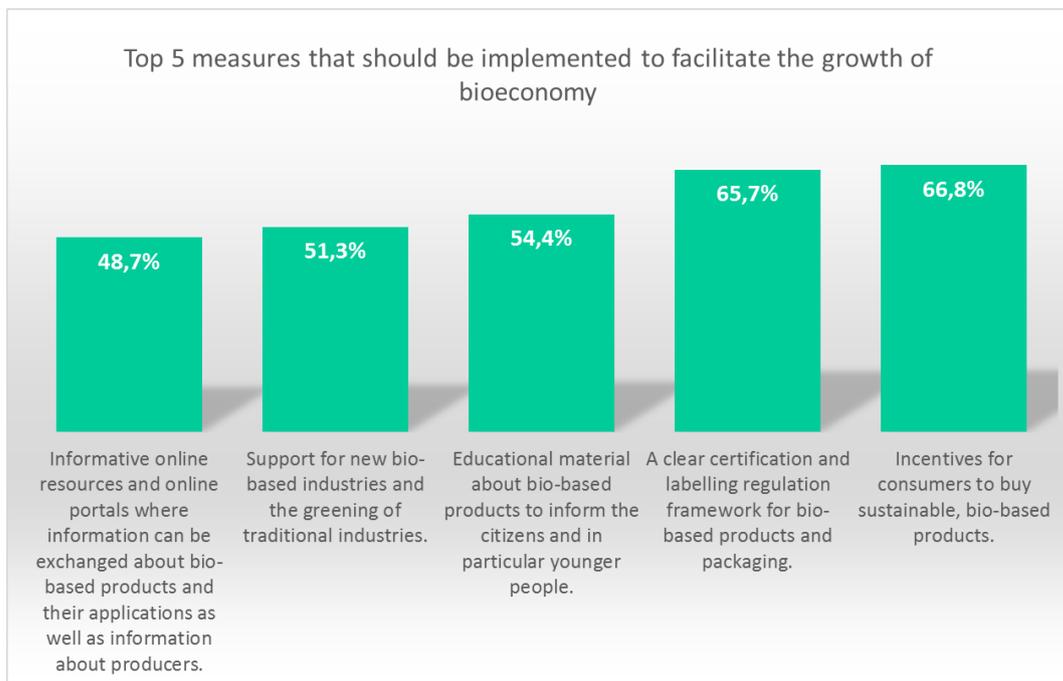


Figure 16: Top 5 measures that should be implemented to facilitate the growth of the bioeconomy (% of respondents)

7. CONCLUSIONS

The current report presents the analysis of the online questionnaire survey carried out as part of the BIOWAYS project. The aim of the survey was to explore the general public's opinions and perceptions of the bio-economy in general and on bio-based products in particular.

The analysis of relevant studies and reports about public awareness of bio-based products carried out under this task along with the findings from the analysis and the interviews conducted under Task 2.1 (D2.1 Review and assessment of the bio-based products, current market uptake and applications and their future potential) revealed that even if there is a certain degree of interest, there is still low level of public knowledge of and engagement with the bioeconomy. It has been noted that consumers seem to lack a full understanding of the term "bio-based" which often leads to misconceptions about the products found in the market. It's clear that although consumers generally have a positive impression of bio-based products, they do need access to more information about them.

The aspect that the public awareness regarding bio-based products is low as well as there is lack of information or informative activities, it is further reinforced by the current survey results. Specifically, it should be noted that in almost all questions, a significant number of respondents was not able to answer with certainty, preferring the response "Neutral/I don't know". Meanwhile, the majority of respondents indicated that they cannot easily find enough information about bio-based products and they have not been engaged in relevant informative actions. Moreover, public incorrectly associates the term "bio-based products" with "organic products" and there is confusion amongst the consumers about their ability to recognize a bio-based product in the market from its label. Labelling and information should be easily accessible and explicitly declared in bio-based products, as well as traceability of bio-based products should be available and easy to find by the consumers.

There is a need to increase visibility and consumers' demand for bio-based products. In the last years, the citizens have an increased positive attitude and interest towards bioeconomy, however there is lack of reliable and sufficient information about these products, that should be promptly covered by more targeted in-depth information and education together with advertising, communication campaigns and experts' involvement (i.e. architects to support the use of bio-based materials for buildings and constructions).

Despite this lack of awareness, lack of available information and unclear labeling, the survey does indicate that consumers, given the choice, seem 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 do discourage people from using them.

Although respondents appeared to be aware of the perceived environmental benefits of using bio-based products, many have 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:

D2.2 Public perception of bio-based products

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

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ANNEX I: ON-LINE QUESTIONNAIRE

A. Your level of awareness in and engagement with 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)
- 1 I have sufficient knowledge of bio-based products. 1 2 3 4 5
- 2 I am aware that the following items can be produced using bio-based materials: Click on those product categories that are familiar to you
- Packaging material (beverage bottles, food packaging etc.) and carrier bags []
 - Personal care and home care products []
 - Catering products (disposable tableware etc) []
 - Cleaning materials []
 - Paints and protective coatings []
 - Office materials []
 - Public greenery, compost and fertilizers []
 - Biofuels used for transport (biodiesel, bioethanol etc.) []
 - Bioenergy used for heating and electricity (pellets, wood, biogas etc.) []
 - Food and feed additives []
 - Biogas and biomass used for heating and electricity []
 - Corrosion inhibitors []
 - Anti-freeze solutions []
 - Lubricants []
 - Adhesives []
 - Fibers and textiles []
 - Pulp and paper []
 - Construction and building materials (construction wood, insulations etc.) []
 - Surfactants []
 - Chemicals (industrial solvents etc) []
 - Industrial, aircraft and automotive parts (hoses, bumpers, molded plastics, car seats, belts etc. []
- 3 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 []
- 4 Could you please name some bio-based products that you use and the frequency that you use them?
- 5 Information about the benefits of bio-based products is readily available. Click on your choice number below
(1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)
- 1 2 3 4 5

D2.2 Public perception of bio-based products

6	I can easily recognise a bio-based product from its label.	1	2	3	4	5
7	I always know if the packaging for any product I buy is made from bio-based materials	1	2	3	4	5
8	Information about the performance and functionality of bio-based products compared to their non-bio-based equivalents is readily available.	1	2	3	4	5
9	I have enough information (or I can easily find that information) about the origin and production process of bio-based products that I buy.	1	2	3	4	5
10	I have enough information (or I can easily find information) about the bio-based content and the environmental performance of bio-based products that I buy.	1	2	3	4	5
11	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
	• Health benefits	1	2	3	4	5
	• Clearly labelled	1	2	3	4	5
12	I have been engaged in the past in the following actions:	Click on your choice below				
	• Surveys and research about bio-based products and bioeconomy	Yes	No	To a certain extent	Hard to say	
	• Communications and informative events about bio-based products and the bioeconomy. (events, public discussions, discussions in media etc)					
	• Decision making process (public consultations etc.)					
	• Informative online resources and online portals about bio-based products and their applications and information about producers.					

B. Your confidence in bio-based products and the reasons you do or don't choose to use them

1	If available, I prefer bio-based products over non-bio-based products.	Click on your choice below				
		Yes	No	I don't know		
	ANSWER THIS IF YOU ANSWERED YES IN QUESTION B.1	Click on your choice number below (1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)				
2	I prefer bio-based products because:	1	2	3	4	5
	• Bio-based products are safe to use.	1	2	3	4	5
	• The use of bio-based products has a positive impact (i.e. ecological, environmental, health).	1	2	3	4	5
	• The functionality of bio-based products is equal as to that of conventional products.	1	2	3	4	5
	• Using bio-based products saves me money.	1	2	3	4	5
	• By using bio-based products, I contribute to reducing carbon emissions that cause climate change.	1	2	3	4	5
	• Other reasons: Please specify					
	ANSWER THIS IF YOU ANSWERED NO IN QUESTION B.1	Click on your choice number below (1 Strongly disagree, 2. Disagree, 3. Neutral/I don't know, 4. Agree, 5. Strongly agree)				
3	I don't prefer bio-based products because:	1	2	3	4	5
	• They are more expensive than non-bio-based products.	1	2	3	4	5
	• Bio-based products are not as good as non-bio-based products.	1	2	3	4	5

D2.2 Public perception of bio-based products

- I cannot easily find bio-based products on the market. 1 2 3 4 5
- I do not have sufficient information or knowledge about the benefits of using bio-based products. 1 2 3 4 5
- I do not trust the claim “bio-based”. There are not clear standards and certifications about the production of bio-based products. 1 2 3 4 5
- I have ethical and environmental concerns regarding the use of bio-based products. 1 2 3 4 5
- Other reasons: Please specify

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

- Click on your choice below
- 1 My overall perception on bio-based products is: Positive Negative Neutral/ I don't know
- Click on your choice number below
(1 Strongly disagree, 2. Disagree, 3. Neutral/ I don't know, 4. Agree, 5. Strongly agree)
- 2 The use of bio-based products helps reduce harmful impacts on natural resources (land, water, biodiversity). 1 2 3 4 5
- 3 The use of bio-based products reduces dependence on non-renewable resources like fossil fuels. 1 2 3 4 5
- 4 The use of bio-based products reduces waste, because by-products and waste streams are exploited. 1 2 3 4 5
- 5 The use of bio-based products contributes to the reduction of greenhouse gas emissions. 1 2 3 4 5
- 6 The use of bio-based products contributes into meeting global and EU commitments and goals in relation to climate change and protection of the environment. 1 2 3 4 5
- 7 The use of bio-based products contributes in creating sustainable economic growth and new jobs. 1 2 3 5 5
- 8 Other perceived benefits: Please specify

D. Your perception of the barriers that exist preventing a greater use of 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)
- 1 The production of bio-based products may lead to the overexploitation of natural resources. 1 2 3 4 5
- 2 The production of bio-based products may lead to increased deforestation and decreasing biodiversity. 1 2 3 4 5
- 3 The increased use of biological resources, normally used in food production, for non-food use will have a negative impact on our ability to produce enough food and may also lead to rising food prices. 1 2 3 4 5
- 4 The use of fertilisers and other chemicals to maintain an increase in the production of some bio-based products may lead to increased agricultural pollution. 1 2 3 4 5
- 5 Other perceived barriers: Please specify 1 2 3 4 5

E. What would you consider to be useful for the bio-based economy to reach its full potential?

- Click on your choice number below
(1 Strongly disagree, 2. Disagree, 3. Neutral/ I don't know, 4. Agree, 5. Strongly agree)
- 1 In your opinion, what would be useful in order to realize the full potential of the bio-based economy?
- Educational material about bio-based products to inform the citizens and in particular younger people. 1 2 3 4 5
 - Informative online resources and online portals where information can be exchanged about bio-based products and their applications as well as information about producers. 1 2 3 4 5
 - Communications and informative events about bio-based 1 2 3 4 5

D2.2 Public perception of bio-based products

- products and the bioeconomy. (media events, public discussions etc)
- Decision making process with the participation of the wider public (public consultations etc.) 1 2 3 4 5
 - Surveys and research about bio-based products and bioeconomy 1 2 3 4 5
 - Incentives for consumers to buy sustainable, bio-based products. 1 2 3 4 5
 - A clear certification and labelling regulation framework for bio-based products and packaging. 1 2 3 4 5
 - Advisory services and/or knowledge transfer systems for farmers. to improve their understanding of the opportunities available to them in the production of bio-based products and materials. 1 2 3 4 5
 - Support for new bio-based industries and the greening of traditional industries. 1 2 3 4 5
 - Legislation obliging the use of bio-based products in applications which are proven to have environmental benefits 1 2 3 4 5
 - Other: Please specify
- 2 Which are the most important (top 5) measures that should be implemented to facilitate the growth of bioeconomy? Put 1 (most important) to 5 (less important)
- Educational material about bio-based products to inform the citizens and in particular younger people.
 - Informative online resources and online portals where information can be exchanged about bio-based products and their applications as well as information about producers
 - Communications and informative events about bio-based products and the bioeconomy. (media events, public discussions etc)
 - Decision making process with the participation of the wider public (public consultations etc.)
 - Surveys and research about bio-based products and bioeconomy
 - Incentives for consumers to buy sustainable, bio-based products.
 - A clear certification and labelling regulation framework for bio-based products and packaging.
 - Advisory services and/or knowledge transfer systems for farmers. to improve their understanding of the opportunities available to them in the production of bio-based products and materials.
 - Support for new bio-based industries and the greening of traditional industries.
 - Legislation obliging the use of bio-based products in applications which are proven to have environmental benefits

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

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	Denmark	Ireland	Malta	Slovakia
Belgium	Estonia	Italy	Netherlands	Slovenia
Bulgaria	Finland	Latvia	Poland	Spain
Cyprus	Greece	Lithuania	Portugal	Sweden

D2.2 Public perception of bio-based products

	Czech Republic		Hungary		Luxembourg		Romania		UK
3	Your education level				Click on your education level below				
	<ul style="list-style-type: none"> • High school level • University level • Post-graduate level 				<input type="checkbox"/> [] <input type="checkbox"/> [] <input type="checkbox"/> []				
4	Are you working in one of the following bio-based economy related sectors?								
	<i>Please select your working sector (if applied)</i>								
	Agriculture				Food and feed				
	Forestry				Energy and fuels				
	Fisheries and aquaculture				Chemicals (incl. surfactants and lubricants)				
	Waste				Plastics and materials				
					Other (please specify)				
5	Are you interested in being informed on BIOWAYS project's activities?				Click on your choice below				
	<ul style="list-style-type: none"> • Yes • No 				<input type="checkbox"/> [] <input type="checkbox"/> []				
6	Your email (optional)								
	Your name (optional)								

D2.2 Public perception of bio-based products

ANNEX 2: RESULTS PER COUNTRY

Translated version of the questionnaire	GR	UK	EE	ES	IT	PT	SK	TOTAL
Number of completed questionnaires	69	30	74	68	121	37	53	452

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	4,3%	13,3%	10,8%	22,1%	3,3%	2,7%	3,8%	8,2%
Disagree	24,6%	20,0%	29,7%	30,9%	17,4%	21,6%	18,9%	23,2%
Neutral/I don't know	15,9%	40,0%	29,7%	32,4%	38,8%	29,7%	39,6%	32,3%
Agree	50,7%	20,0%	23,0%	11,8%	30,6%	35,1%	34,0%	29,6%
Strongly agree	4,3%	6,7%	6,8%	2,9%	9,9%	10,8%	3,8%	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 (%)
Anti-freeze solutions	5,8%	10,0%	10,8%	1,5%	6,6%	5,4%	0,0%	5,8%
Surfactants	10,1%	16,7%	25,7%	8,8%	8,3%	0,0%	9,4%	11,5%
Corrosion inhibitors	37,7%	10,0%	20,3%	2,9%	4,1%	5,4%	9,4%	12,8%
Adhesives	7,2%	33,3%	48,6%	19,1%	12,4%	5,4%	11,3%	19,2%
Industrial, aircraft and automotive parts (hoses, bumpers, molded plastics, car seats, belts etc.)	8,7%	26,7%	28,4%	20,6%	27,3%	16,2%	7,5%	20,4%
Chemicals (industrial solvents etc)	44,9%	33,3%	28,4%	16,2%	14,9%	10,8%	0,0%	21,0%
Lubricants	11,6%	30,0%	56,8%	19,1%	19,0%	18,9%	3,8%	23,0%
Paints and protective coatings	60,9%	40,0%	70,3%	25,0%	24,0%	35,1%	39,6%	41,2%
Office materials	58,0%	63,3%	66,2%	41,2%	47,1%	24,3%	28,3%	48,0%
Construction and building materials (construction wood, insulations etc.)	33,3%	53,3%	85,1%	51,5%	57,9%	35,1%	52,8%	54,9%
Food and feed additives	56,5%	60,0%	79,7%	60,3%	32,2%	40,5%	92,5%	57,5%
Cleaning materials	73,9%	83,3%	82,4%	35,3%	43,8%	48,6%	69,8%	59,5%
Catering products (disposable tableware etc)	53,6%	60,0%	91,9%	64,7%	69,4%	40,5%	58,5%	65,7%

D2.2 Public perception of bio-based products

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Fibers and textiles	62,3%	70,0%	87,8%	48,5%	69,4%	51,4%	64,2%	66,2%
Personal care and home care products	84,1%	63,3%	79,7%	58,8%	54,5%	73,0%	77,4%	68,6%
Biogas and biomass used for heating and electricity	73,9%	70,0%	98,6%	70,6%	62,0%	56,8%	69,8%	72,1%
Pulp and paper	76,8%	73,3%	82,4%	67,6%	77,7%	54,1%	56,6%	72,1%
Public greenery, compost and fertilizers	85,5%	76,7%	93,2%	72,1%	76,0%	67,6%	86,8%	80,3%
Biofuels used for transport (biodiesel, bioethanol etc.)	89,9%	86,7%	95,9%	85,3%	66,9%	73,0%	71,7%	80,3%
Bioenergy used for heating and electricity (pellets, wood, biogas etc.)	87,0%	76,7%	95,9%	77,9%	76,9%	64,9%	75,5%	80,5%
Packaging material (beverage bottles, food packaging etc.) and carrier bags	76,8%	86,7%	86,5%	80,9%	86,8%	56,8%	77,4%	80,8%

A3. I use bio-based products as a consumer:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Everyday	20,3%	30,0%	44,6%	16,2%	33,1%	35,1%	45,3%	31,9%
Once in a week	11,6%	20,0%	13,5%	14,7%	16,5%	18,9%	22,6%	16,2%
Once in a month	10,1%	13,3%	4,1%	4,4%	3,3%	10,8%	17,0%	7,5%
More rare	13,0%	10,0%	6,8%	8,8%	20,7%	13,5%	5,7%	12,4%
Never	1,4%	0,0%	1,4%	2,9%	4,1%	5,4%	1,9%	2,7%
I don't know	44,9%	36,7%	32,4%	58,8%	26,4%	21,6%	13,2%	33,8%

A5. Information about the benefits of bio-based products is readily available.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	13,0%	13,3%	8,1%	25,0%	22,3%	2,7%	3,8%	14,6%
Disagree	47,8%	36,7%	45,9%	39,7%	33,1%	27,0%	17,0%	36,3%
Neutral/I don't know	17,4%	36,7%	28,4%	32,4%	21,5%	40,5%	34,0%	27,7%
Agree	14,5%	13,3%	12,2%	2,9%	19,8%	21,6%	41,5%	17,5%
Strongly agree	7,2%	0,0%	5,4%	0,0%	3,3%	8,1%	3,8%	4,0%

D2.2 Public perception of bio-based products

A6. I can easily recognise a bio-based product from its label.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	8,7%	13,3%	20,3%	26,5%	12,4%	5,4%	1,9%	13,5%
Disagree	15,9%	40,0%	29,7%	32,4%	25,6%	18,9%	17,0%	25,2%
Neutral/I don't know	11,6%	23,3%	12,2%	29,4%	28,9%	32,4%	13,2%	21,7%
Agree	55,1%	23,3%	31,1%	10,3%	28,1%	27,0%	56,6%	33,0%
Strongly agree	8,7%	0,0%	6,8%	1,5%	5,0%	16,2%	11,3%	6,6%

A7. I always know if the packaging for any product I buy is made from bio-based materials.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	20,3%	40,0%	29,7%	30,9%	14,9%	21,6%	9,4%	22,1%
Disagree	29,0%	23,3%	41,9%	44,1%	37,2%	35,1%	39,6%	36,9%
Neutral/I don't know	44,9%	16,7%	12,2%	19,1%	31,4%	35,1%	28,3%	27,4%
Agree	5,8%	20,0%	12,2%	5,9%	14,9%	2,7%	20,8%	11,7%
Strongly agree	0,0%	0,0%	4,1%	0,0%	1,7%	5,4%	1,9%	1,8%

A8. Information about the performance and functionality of bio-based products compared to their non-bio-based equivalents is readily available.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	8,7%	30,0%	28,4%	23,5%	14,9%	21,6%	18,9%	19,5%
Disagree	21,7%	40,0%	45,9%	54,4%	47,1%	35,1%	30,2%	40,7%
Neutral/I don't know	18,8%	23,3%	17,6%	20,6%	23,1%	37,8%	32,1%	23,5%
Agree	46,4%	6,7%	6,8%	1,5%	14,9%	5,4%	15,1%	15,0%
Strongly agree	4,3%	0,0%	1,4%	0,0%	0,0%	0,0%	3,8%	1,3%

A9. I have enough information (or I can easily find that information) about the origin and production process of bio-based products that I buy.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	11,6%	23,3%	39,2%	19,1%	19,0%	16,2%	11,3%	20,4%
Disagree	24,6%	40,0%	28,4%	48,5%	43,0%	29,7%	30,2%	35,8%
Neutral/I don't know	20,3%	33,3%	24,3%	20,6%	23,1%	37,8%	17,0%	23,7%
Agree	40,6%	3,3%	6,8%	10,3%	13,2%	13,5%	39,6%	18,4%
Strongly agree	2,9%	0,0%	1,4%	1,5%	1,7%	2,7%	1,9%	1,8%

D2.2 Public perception of bio-based products

A10. I have enough information (or I can easily find that information) about the origin and production process of bio-based products that I buy.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	20,3%	23,3%	23,0%	20,6%	14,9%	24,3%	9,4%	18,6%
Disagree	21,7%	30,0%	37,8%	50,0%	38,8%	37,8%	35,8%	36,7%
Neutral/I don't know	13,0%	30,0%	23,0%	20,6%	24,0%	32,4%	18,9%	22,1%
Agree	42,0%	16,7%	14,9%	8,8%	21,5%	5,4%	34,0%	21,5%
Strongly agree	2,9%	0,0%	1,4%	0,0%	0,8%	0,0%	1,9%	1,1%

A11. 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%	3,3%	4,1%	17,6%	6,6%	8,1%	7,5%	6,9%
Disagree	34,8%	3,3%	9,5%	20,6%	14,9%	18,9%	15,1%	17,5%
Neutral/I don't know	21,7%	36,7%	33,8%	42,6%	14,9%	32,4%	18,9%	26,5%
Agree	36,2%	53,3%	43,2%	13,2%	50,4%	32,4%	52,8%	40,5%
Strongly agree	7,2%	3,3%	9,5%	5,9%	13,2%	8,1%	5,7%	8,6%
Environmental performance and benefits								
Strongly disagree	1,4%	3,3%	5,4%	17,6%	8,3%	8,1%	9,4%	8,0%
Disagree	2,9%	30,0%	17,6%	25,0%	11,6%	16,2%	13,2%	15,0%
Neutral/I don't know	31,9%	36,7%	33,8%	25,0%	15,7%	37,8%	9,4%	25,0%
Agree	56,5%	30,0%	37,8%	26,5%	45,5%	27,0%	56,6%	41,8%
Strongly agree	7,2%	0,0%	5,4%	5,9%	19,0%	10,8%	11,3%	10,2%
Origin and production process								
Strongly disagree	2,9%	3,3%	9,5%	19,1%	12,4%	8,1%	3,8%	9,5%
Disagree	14,5%	33,3%	25,7%	26,5%	17,4%	21,6%	17,0%	21,0%
Neutral/I don't know	34,8%	33,3%	43,2%	35,3%	33,1%	37,8%	37,7%	36,3%
Agree	43,5%	26,7%	17,6%	16,2%	30,6%	27,0%	35,8%	28,3%
Strongly agree	4,3%	3,3%	4,1%	2,9%	6,6%	5,4%	5,7%	4,9%
Health benefits								
Strongly disagree	2,9%	10,0%	4,1%	14,7%	7,4%	2,7%	1,9%	6,4%
Disagree	2,9%	26,7%	31,1%	25,0%	15,7%	16,2%	15,1%	18,4%
Neutral/I don't know	50,7%	46,7%	36,5%	38,2%	26,4%	29,7%	13,2%	33,6%
Agree	31,9%	13,3%	23,0%	19,1%	34,7%	27,0%	56,6%	30,5%
Strongly agree	11,6%	3,3%	5,4%	2,9%	15,7%	24,3%	13,2%	11,1%
Clearly labelled								
Strongly disagree	2,9%	10,0%	5,4%	25,0%	19,0%	13,5%	1,9%	12,2%
Disagree	8,7%	36,7%	31,1%	29,4%	31,4%	18,9%	20,8%	25,7%
Neutral/I don't know	29,0%	33,3%	35,1%	29,4%	27,3%	32,4%	22,6%	29,4%
Agree	53,6%	20,0%	25,7%	11,8%	19,8%	24,3%	41,5%	27,7%
Strongly agree	5,8%	0,0%	2,7%	4,4%	2,5%	10,8%	13,2%	5,1%

D2.2 Public perception of bio-based products

A12. I have been engaged in the past in the following actions:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Surveys and research about bio-based products and bioeconomy								
Yes	2,9%	16,7%	4,1%	5,9%	33,9%	16,2%	1,9%	13,7%
No	92,8%	73,3%	94,6%	89,7%	58,7%	64,9%	86,8%	79,2%
To a certain extent	4,3%	6,7%	1,4%	4,4%	5,8%	13,5%	11,3%	6,0%
Hard to say	0,0%	3,3%	0,0%	0,0%	1,7%	5,4%	0,0%	1,1%
Communications and informative events about bio-based products and the bioeconomy. (events, public discussions, discussions in media etc)								
Yes	2,9%	20,0%	8,1%	8,8%	36,4%	10,8%	7,5%	15,9%
No	87,0%	70,0%	86,5%	83,8%	47,9%	70,3%	77,4%	72,3%
To a certain extent	10,1%	6,7%	4,1%	7,4%	13,2%	16,2%	15,1%	10,4%
Hard to say	0,0%	3,3%	1,4%	0,0%	2,5%	2,7%	0,0%	1,3%
Decision making process (public consultations etc.)								
Yes	1,4%	6,7%	4,1%	10,3%	33,1%	13,5%	7,5%	13,7%
No	97,1%	86,7%	90,5%	86,8%	60,3%	70,3%	81,1%	79,9%
To a certain extent	1,4%	0,0%	5,4%	2,9%	6,6%	8,1%	7,5%	4,9%
Hard to say	0,0%	6,7%	0,0%	0,0%	0,0%	8,1%	3,8%	1,5%
Informative online resources and online portals about bio-based products and their applications and information about producers.								
Yes	13,0%	20,0%	18,9%	7,4%	26,4%	13,5%	28,3%	19,0%
No	69,6%	63,3%	52,7%	85,3%	56,2%	73,0%	47,2%	62,8%
To a certain extent	15,9%	6,7%	28,4%	7,4%	16,5%	10,8%	22,6%	16,6%
Hard to say	1,4%	10,0%	0,0%	0,0%	0,8%	2,7%	1,9%	1,5%

D2.2 Public perception of bio-based products

B. YOUR CONFIDENCE IN BIO-BASED PRODUCTS AND THE REASONS YOU DO OR DON'T CHOOSE TO USE THEM
B1. Your confidence in bio-based products and the reasons you do or don't choose to use them

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
YES	50,7%	70,0%	73,0%	60,3%	76,0%	56,8%	69,8%	66,6%
NO	7,2%	0,0%	4,1%	4,4%	7,4%	5,4%	22,6%	7,5%
I don't know	42,0%	30,0%	23,0%	35,3%	16,5%	37,8%	7,5%	25,9%

B2. I prefer bio-based products because:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Bio-based products are safe to use.								
Strongly disagree	2,2%	0,0%	0,0%	7,3%	3,1%	6,9%	4,3%	3,3%
Disagree	6,5%	11,1%	13,2%	9,1%	9,2%	0,0%	13,0%	9,5%
Neutral/I don't know	21,7%	37,0%	29,4%	47,3%	33,7%	24,1%	23,9%	31,7%
Agree	56,5%	40,7%	41,2%	29,1%	38,8%	41,4%	41,3%	40,7%
Strongly agree	13,0%	11,1%	16,2%	7,3%	15,3%	27,6%	17,4%	14,9%
The use of bio-based products has a positive impact (i.e. ecological, environmental, health).								
Strongly disagree	0,0%	0,0%	1,5%	3,6%	3,0%	3,4%	4,5%	2,4%
Disagree	6,5%	3,8%	4,4%	5,4%	2,0%	0,0%	4,5%	3,8%
Neutral/I don't know	4,3%	11,5%	17,6%	10,7%	5,0%	17,2%	20,5%	11,4%
Agree	60,9%	61,5%	44,1%	50,0%	48,0%	41,4%	31,8%	47,7%
Strongly agree	28,3%	23,1%	32,4%	30,4%	42,0%	37,9%	38,6%	34,7%
The functionality of bio-based products is equal as to that of conventional products								
Strongly disagree	4,3%	0,0%	2,9%	5,4%	15,5%	17,9%	4,4%	7,9%
Disagree	28,3%	3,7%	19,1%	14,3%	14,4%	14,3%	13,3%	16,1%
Neutral/I don't know	43,5%	37,0%	26,5%	30,4%	27,8%	25,0%	31,1%	30,8%
Agree	21,7%	40,7%	32,4%	37,5%	33,0%	21,4%	28,9%	31,3%
Strongly agree	2,2%	18,5%	19,1%	12,5%	9,3%	21,4%	22,2%	13,9%
Using bio-based products saves me money.								
Strongly disagree	28,3%	14,8%	23,5%	17,9%	22,4%	27,6%	8,9%	20,9%
Disagree	34,8%	33,3%	39,7%	28,6%	36,7%	17,2%	40,0%	34,4%
Neutral/I don't know	28,3%	44,4%	26,5%	42,9%	28,6%	34,5%	35,6%	32,8%
Agree	6,5%	3,7%	7,4%	7,1%	9,2%	3,4%	11,1%	7,6%
Strongly agree	2,2%	3,7%	2,9%	3,6%	3,1%	17,2%	4,4%	4,3%
By using bio-based products, I contribute to reducing carbon emissions that cause climate change								
Strongly disagree	2,2%	3,6%	5,9%	5,4%	1,0%	10,7%	2,2%	3,8%
Disagree	0,0%	3,6%	5,9%	5,4%	3,1%	14,3%	4,4%	4,6%
Neutral/I don't know	17,4%	25,0%	23,5%	17,9%	16,5%	21,4%	35,6%	21,5%
Agree	56,5%	35,7%	42,6%	41,1%	44,3%	21,4%	33,3%	41,3%
Strongly agree	23,9%	32,1%	22,1%	30,4%	35,1%	32,1%	24,4%	28,8%

D2.2 Public perception of bio-based products

B3. I don't prefer bio-based products because:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
They are more expensive than non-bio-based products.								
Strongly disagree	5,7%	0,0%	11,1%	6,1%	13,8%	6,3%	6,5%	8,7%
Disagree	11,4%	15,8%	16,7%	15,2%	12,3%	6,3%	22,6%	14,6%
Neutral/I don't know	14,3%	36,8%	25,9%	36,4%	29,2%	12,5%	12,9%	24,9%
Agree	57,1%	42,1%	38,9%	21,2%	33,8%	56,3%	45,2%	39,9%
Strongly agree	11,4%	5,3%	7,4%	21,2%	10,8%	18,8%	12,9%	11,9%
Bio-based products are not as good as non-bio-based products.								
Strongly disagree	33,3%	21,1%	20,8%	6,3%	22,6%	35,7%	3,2%	19,7%
Disagree	36,4%	26,3%	24,5%	31,3%	35,5%	50,0%	48,4%	34,4%
Neutral/I don't know	18,2%	47,4%	45,3%	46,9%	30,6%	14,3%	35,5%	35,2%
Agree	9,1%	5,3%	9,4%	12,5%	9,7%	0,0%	12,9%	9,4%
Strongly agree	3,0%	0,0%	0,0%	3,1%	1,6%	0,0%	0,0%	1,2%
I cannot easily find bio-based products on the market.								
Strongly disagree	9,1%	0,0%	13,2%	6,1%	10,9%	15,4%	12,9%	10,2%
Disagree	18,2%	10,5%	11,3%	12,1%	31,3%	23,1%	41,9%	22,0%
Neutral/I don't know	21,2%	47,4%	20,8%	39,4%	21,9%	30,8%	12,9%	25,2%
Agree	45,5%	36,8%	43,4%	12,1%	29,7%	15,4%	32,3%	32,5%
Strongly agree	6,1%	5,3%	11,3%	30,3%	6,3%	15,4%	0,0%	10,2%
I do not have sufficient information or knowledge about the benefits of using bio-based products.								
Strongly disagree	5,9%	5,3%	7,7%	6,1%	12,7%	23,1%	6,5%	9,0%
Disagree	29,4%	10,5%	19,2%	9,1%	19,0%	23,1%	35,5%	20,8%
Neutral/I don't know	8,8%	42,1%	26,9%	27,3%	27,0%	23,1%	25,8%	25,3%
Agree	41,2%	26,3%	26,9%	33,3%	34,9%	23,1%	32,3%	32,2%
Strongly agree	14,7%	15,8%	19,2%	24,2%	6,3%	7,7%	0,0%	12,7%
I do not trust the claim "bio-based". There are not clear standards and certifications about the production of bio-based products.								
Strongly disagree	21,2%	10,5%	9,4%	3,1%	17,5%	25,0%	12,5%	13,5%
Disagree	33,3%	10,5%	18,9%	28,1%	22,2%	16,7%	28,1%	23,4%
Neutral/I don't know	24,2%	52,6%	34,0%	31,3%	33,3%	33,3%	18,8%	31,6%
Agree	18,2%	26,3%	24,5%	21,9%	19,0%	16,7%	25,0%	21,7%
Strongly agree	3,0%	0,0%	13,2%	15,6%	7,9%	8,3%	15,6%	9,8%
I have ethical and environmental concerns regarding the use of bio-based products.								
Strongly disagree	39,4%	33,3%	20,8%	28,1%	33,3%	16,7%	26,7%	29,0%
Disagree	36,4%	5,6%	17,0%	21,9%	31,7%	25,0%	40,0%	26,6%
Neutral/I don't know	6,1%	50,0%	49,1%	34,4%	20,6%	33,3%	20,0%	29,5%
Agree	18,2%	5,6%	11,3%	12,5%	12,7%	25,0%	10,0%	12,9%
Strongly agree	0%	5,6%	1,9%	3,1%	1,6%	0,0%	3,3%	2,1%

D2.2 Public perception of bio-based products

C. YOUR PERCEPTION OF THE BENEFITS OF USING BIO-BASED PRODUCTS
C1. My overall perception on bio-based products is:

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Positive	68,1%	80,0%	77,0%	82,4%	86,8%	81,1%	81,1%	80,1%
Negative	0,0%	0,0%	0,0%	0,0%	3,3%	2,7%	11,3%	2,4%
Neutral/I don't know	31,9%	20,0%	23,0%	17,6%	9,9%	16,2%	7,5%	17,5%

C2. The use of bio-based products helps reduce harmful impacts on natural resources (land, water, biodiversity).

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	0,0%	0,0%	0,0%	4,4%	0,0%	0,0%	3,8%	1,1%
Disagree	0,0%	0,0%	8,1%	4,4%	0,8%	2,7%	3,8%	2,9%
Neutral/I don't know	8,7%	16,7%	18,9%	11,8%	9,9%	13,5%	11,3%	12,4%
Agree	63,8%	60,0%	58,1%	47,1%	45,5%	40,5%	52,8%	52,0%
Strongly agree	27,5%	23,3%	14,9%	32,4%	43,8%	43,2%	28,3%	31,6%

C3. The use of bio-based products reduces dependence on non-renewable resources like fossil fuels.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	0,0%	0,0%	1,4%	5,9%	0,8%	2,7%	3,8%	2,0%
Disagree	30,4%	0,0%	4,1%	0,0%	1,7%	5,4%	5,7%	6,9%
Neutral/I don't know	20,3%	20,0%	14,9%	10,3%	14,9%	16,2%	24,5%	16,6%
Agree	26,1%	56,7%	54,1%	51,5%	46,3%	40,5%	43,4%	45,1%
Strongly agree	23,2%	23,3%	25,7%	32,4%	36,4%	35,1%	22,6%	29,4%

C4. The use of bio-based products reduces waste, because by-products and waste streams are exploited.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	0,0%	0,0%	4,1%	4,4%	0,8%	0,0%	1,9%	1,8%
Disagree	0,0%	3,3%	4,1%	4,4%	1,7%	10,8%	7,5%	3,8%
Neutral/I don't know	42,0%	26,7%	17,6%	7,4%	7,4%	24,3%	20,8%	18,6%
Agree	34,8%	56,7%	54,1%	54,4%	42,1%	29,7%	41,5%	44,7%
Strongly agree	23,2%	13,3%	20,3%	29,4%	47,9%	35,1%	28,3%	31,2%

D2.2 Public perception of bio-based products

C5. The use of bio-based products contributes to the reduction of greenhouse gas emissions.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	0,0%	0,0%	1,4%	4,4%	1,7%	0,0%	1,9%	1,3%
Disagree	30,4%	3,3%	5,4%	2,9%	2,5%	8,1%	11,3%	7,9%
Neutral/I don't know	20,3%	30,0%	35,1%	16,2%	20,7%	21,6%	22,6%	24,5%
Agree	24,6%	53,3%	48,6%	50,0%	44,6%	27,0%	39,6%	43,7%
Strongly agree	24,6%	13,3%	9,5%	26,5%	30,6%	43,2%	24,5%	22,7%

C6. The use of bio-based products contributes into meeting global and EU commitments and goals in relation to climate change and protection of the environment.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	0,0%	0,0%	0,0%	4,4%	0,0%	2,7%	5,7%	1,5%
Disagree	30,4%	3,3%	2,7%	2,9%	0,8%	5,4%	5,7%	7,1%
Neutral/I don't know	18,8%	26,7%	36,5%	14,7%	17,4%	21,6%	28,3%	22,6%
Agree	27,5%	53,3%	48,6%	52,9%	46,3%	29,7%	43,4%	43,6%
Strongly agree	23,2%	16,7%	12,2%	25,0%	35,5%	40,5%	17,0%	25,2%

C7. The use of bio-based products contributes in creating sustainable economic growth and new jobs.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	0,0%	3,3%	2,7%	5,9%	0,0%	2,7%	1,9%	2,0%
Disagree	0,0%	0,0%	6,8%	5,9%	2,5%	8,1%	9,4%	4,4%
Neutral/I don't know	58,0%	40,0%	41,9%	38,2%	36,4%	21,6%	43,4%	40,7%
Agree	29,0%	40,0%	32,4%	42,6%	38,8%	27,0%	32,1%	35,2%
Strongly agree	13,0%	16,7%	16,2%	7,4%	22,3%	40,5%	13,2%	17,7%

D2.2 Public perception of bio-based products

D. YOUR PERCEPTION OF THE BARRIERS THAT EXIST PREVENTING A GREATER USE OF BIO-BASED PRODUCTS

D1. The production of bio-based products may lead to the overexploitation of natural resources.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	5,8%	6,7%	2,7%	8,8%	14,9%	16,2%	5,7%	9,1%
Disagree	17,4%	23,3%	18,9%	33,8%	36,4%	27,0%	45,3%	29,6%
Neutral/I don't know	68,1%	33,3%	39,2%	38,2%	32,2%	43,2%	34,0%	40,9%
Agree	4,3%	33,3%	27,0%	19,1%	13,2%	13,5%	13,2%	16,4%
Strongly agree	4,3%	3,3%	12,2%	0,0%	3,3%	0,0%	1,9%	4,0%

D2. The production of bio-based products may lead to increased deforestation and decreasing biodiversity

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	8,7%	10,0%	2,7%	13,2%	18,2%	18,9%	7,5%	11,7%
Disagree	18,8%	11,6%	20,3%	35,3%	36,4%	27,0%	39,6%	29,9%
Neutral/I don't know	27,5%	14,5%	32,4%	32,4%	34,7%	40,5%	32,1%	33,0%
Agree	43,5%	11,6%	33,8%	17,6%	7,4%	13,5%	20,8%	22,1%
Strongly agree	1,4%	1,4%	10,8%	1,5%	3,3%	0,0%	0,0%	3,3%

D3. The increased use of biological resources, normally used in food production, for non-food use will have a negative impact on our ability to produce enough food and may also lead to rising food prices.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	5,8%	3,3%	4,1%	8,8%	17,4%	24,3%	3,8%	10,2%
Disagree	14,5%	36,7%	23,0%	17,6%	28,9%	21,6%	20,8%	23,0%
Neutral/I don't know	33,3%	43,3%	28,4%	41,2%	32,2%	32,4%	49,1%	35,8%
Agree	46,4%	13,3%	36,5%	29,4%	20,7%	18,9%	24,5%	28,3%
Strongly agree	0,0%	3,3%	8,1%	2,9%	0,8%	2,7%	1,9%	2,7%

D4. The use of fertilisers and other chemicals to maintain an increase in the production of some bio-based products may lead to increased agricultural pollution.

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Strongly disagree	7,2%	6,7%	2,7%	8,8%	6,6%	13,5%	3,8%	6,6%
Disagree	15,9%	13,3%	8,1%	17,6%	19,0%	16,2%	20,8%	16,2%
Neutral/I don't know	33,3%	33,3%	45,9%	35,3%	39,7%	37,8%	37,7%	38,3%
Agree	42,0%	40,0%	27,0%	29,4%	24,8%	13,5%	22,6%	28,3%
Strongly agree	1,4%	6,7%	16,2%	8,8%	9,9%	18,9%	15,1%	10,6%

D2.2 Public perception of bio-based products

E. WHAT WOULD YOU CONSIDER TO BE USEFUL FOR THE BIO-BASED ECONOMY TO REACH ITS FULL POTENTIAL?
E1. In your opinion, what would be useful in order to realize the full potential of the bio-based economy?

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Educational material about bio-based products to inform the citizens and in particular younger people.								
Strongly disagree	1,4%	0,0%	2,7%	1,5%	2,5%	5,4%	5,7%	2,7%
Disagree	2,9%	0,0%	4,1%	7,4%	2,5%	13,5%	3,8%	4,4%
Neutral/I don't know	39,1%	6,7%	9,5%	8,8%	9,9%	10,8%	20,8%	15,3%
Agree	29,0%	50,0%	51,4%	50,0%	49,6%	45,9%	58,5%	47,6%
Strongly agree	27,5%	43,3%	32,4%	32,4%	35,5%	24,3%	11,3%	30,1%
Informative online resources and online portals where information can be exchanged about bio-based products and their applications as well as information about producers.								
Strongly disagree	1,4%	0,0%	0,0%	1,5%	4,1%	5,4%	5,7%	2,7%
Disagree	2,9%	6,7%	6,8%	7,4%	2,5%	10,8%	3,8%	5,1%
Neutral/I don't know	39,1%	10,0%	8,1%	13,2%	7,4%	13,5%	17,0%	15,0%
Agree	26,1%	53,3%	48,6%	57,4%	58,7%	45,9%	60,4%	50,7%
Strongly agree	30,4%	30,0%	36,5%	20,6%	27,3%	24,3%	13,2%	26,5%
Communications and informative events about bio-based products and the bioeconomy. (media events, public discussions etc)								
Strongly disagree	0,0%	0,0%	1,4%	1,5%	2,5%	5,4%	5,7%	2,2%
Disagree	1,4%	3,3%	2,7%	7,4%	4,1%	10,8%	3,8%	4,4%
Neutral/I don't know	42,0%	13,3%	16,2%	14,7%	15,7%	13,5%	28,3%	20,8%
Agree	26,1%	53,3%	56,8%	52,9%	50,4%	32,4%	49,1%	46,7%
Strongly agree	30,4%	30,0%	23,0%	23,5%	27,3%	37,8%	13,2%	25,9%
Decision making process with the participation of the wider public (public consultations etc.)								
Strongly disagree	4,3%	3,3%	4,1%	5,9%	7,4%	8,1%	1,9%	5,3%
Disagree	2,9%	0,0%	6,8%	17,6%	9,9%	13,5%	11,3%	9,3%
Neutral/I don't know	20,3%	26,7%	23,0%	26,5%	30,6%	13,5%	41,5%	26,8%
Agree	59,4%	53,3%	48,6%	35,3%	28,1%	40,5%	30,2%	40,3%
Strongly agree	13,0%	16,7%	17,6%	14,7%	24,0%	24,3%	15,1%	18,4%
Surveys and research about bio-based products and bioeconomy								
Strongly disagree	0,0%	0,0%	1,4%	2,9%	2,5%	5,4%	7,5%	2,7%
Disagree	1,4%	6,7%	10,8%	17,6%	4,1%	16,2%	7,5%	8,4%
Neutral/I don't know	13,0%	30,0%	14,9%	23,5%	16,5%	16,2%	35,8%	19,9%
Agree	60,9%	36,7%	48,6%	44,1%	52,1%	32,4%	32,1%	46,7%
Strongly agree	24,6%	26,7%	24,3%	11,8%	24,8%	29,7%	17,0%	22,3%

D2.2 Public perception of bio-based products

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Incentives for consumers to buy sustainable, bio-based products.								
Strongly disagree	0,0%	0,0%	2,7%	1,5%	1,7%	5,4%	7,5%	2,4%
Disagree	33,3%	6,7%	5,4%	8,8%	6,6%	10,8%	15,1%	12,2%
Neutral/I don't know	4,3%	6,7%	17,6%	10,3%	6,6%	13,5%	20,8%	10,8%
Agree	24,6%	30,0%	37,8%	38,2%	36,4%	24,3%	39,6%	34,1%
Strongly agree	37,7%	56,7%	36,5%	41,2%	48,8%	45,9%	17,0%	40,5%
A clear certification and labelling regulation framework for bio-based products and packaging.								
Strongly disagree	0,0%	0,0%	1,4%	0,0%	1,7%	5,4%	3,8%	1,5%
Disagree	0,0%	3,3%	1,4%	4,4%	1,7%	8,1%	5,7%	2,9%
Neutral/I don't know	8,7%	3,3%	5,4%	11,8%	11,6%	10,8%	11,3%	9,5%
Agree	20,3%	30,0%	35,1%	36,8%	33,9%	32,4%	43,4%	33,2%
Strongly agree	71,0%	63,3%	56,8%	47,1%	51,2%	43,2%	35,8%	52,9%
Advisory services and/or knowledge transfer systems for farmers. to improve their understanding of the opportunities available to them in the production of bio-based products and materials.								
Strongly disagree	0,0%	0,0%	1,4%	2,9%	2,5%	5,4%	7,5%	2,7%
Disagree	0,0%	3,3%	2,7%	7,4%	5,8%	13,5%	5,7%	5,1%
Neutral/I don't know	4,3%	13,3%	13,5%	14,7%	19,8%	18,9%	30,2%	16,4%
Agree	26,1%	46,7%	40,5%	50,0%	43,0%	27,0%	35,8%	39,2%
Strongly agree	69,6%	36,7%	41,9%	25,0%	28,9%	35,1%	20,8%	36,7%
Support for new bio-based industries and the greening of traditional industries.								
Strongly disagree	0,0%	0,0%	2,7%	1,5%	1,7%	5,4%	11,3%	2,9%
Disagree	0,0%	0,0%	4,1%	8,8%	6,6%	10,8%	5,7%	5,3%
Neutral/I don't know	36,2%	16,7%	23,0%	8,8%	9,9%	13,5%	15,1%	17,3%
Agree	21,7%	33,3%	39,2%	42,6%	46,3%	32,4%	37,7%	37,8%
Strongly agree	42,0%	50,0%	31,1%	38,2%	35,5%	37,8%	30,2%	36,7%
Legislation obliging the use of bio-based products in applications which are proven to have environmental benefits								
Strongly disagree	0,0%	0,0%	1,4%	4,4%	6,6%	5,4%	9,4%	4,2%
Disagree	4,3%	6,7%	8,1%	14,7%	8,3%	16,2%	17,0%	10,2%
Neutral/I don't know	44,9%	20,0%	18,9%	10,3%	19,0%	13,5%	30,2%	22,6%
Agree	20,3%	30,0%	39,2%	38,2%	28,9%	21,6%	22,6%	29,4%
Strongly agree	30,4%	43,3%	32,4%	32,4%	37,2%	43,2%	20,8%	33,6%

D2.2 Public perception of bio-based products

E2. Which are the most important (top 5) measures that should be implemented to facilitate the growth of bioeconomy?

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Decision making process with the participation of the wider public (public consultations etc.)	37,7%	20,0%	17,6%	22,1%	28,9%	27,0%	32,1%	27,0%
Surveys and research about bio-based products and bioeconomy	26,1%	40,0%	25,7%	17,6%	37,2%	24,3%	49,1%	31,2%
Communications and informative events about bio-based products and the bioeconomy. (media events, public discussions etc)	39,1%	46,7%	44,6%	29,4%	37,2%	51,4%	52,8%	41,2%
Advisory services and/or knowledge transfer systems for farmers. to improve their understanding of the opportunities available to them in the production of bio-based products and materials.	71,0%	43,3%	48,6%	16,2%	37,2%	51,4%	43,4%	43,4%
Legislation obliging the use of bio-based products in applications which are proven to have environmental benefits	36,2%	50,0%	45,9%	57,4%	40,5%	45,9%	35,8%	43,8%
Informative online resources and online portals where information can be exchanged about bio-based products and their applications as well as information about producers.	33,3%	43,3%	48,6%	50,0%	47,1%	59,5%	66,0%	48,7%
Support for new bio-based industries and the greening of traditional industries.	30,4%	60,0%	55,4%	72,1%	65,3%	64,9%	0,0%	51,3%
Educational material about bio-based products to inform the citizens and in particular younger people.	43,5%	60,0%	45,9%	72,1%	55,4%	56,8%	50,9%	54,4%
A clear certification and labelling regulation framework for bio-based products and packaging.	66,7%	70,0%	75,7%	67,6%	58,7%	62,2%	64,2%	65,7%
Incentives for consumers to buy sustainable, bio-based products.	59,4%	70,0%	56,8%	76,5%	75,2%	67,6%	56,6%	66,8%

D2.2 Public perception of bio-based products

DEMOGRAPHIC INFO OF THE SAMPLE

Age

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Under 24	4,3%	23,3%	5,4%	4,4%	11,6%	5,4%	20,8%	9,7%
25-40	44,9%	46,7%	70,3%	54,4%	31,4%	40,5%	64,2%	48,9%
40-65	50,7%	23,3%	24,3%	33,8%	54,5%	54,1%	13,2%	38,9%
65+	0,0%	6,7%	0,0%	7,4%	2,5%	0,0%	1,9%	2,4%

Country of origin

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
Austria		3,3%						0,2%
Bulgaria						2,7%		0,2%
Denmark		3,3%						0,2%
Netherlands		3,3%						0,2%
Sweden	1,4%							0,2%
Lithuania		6,7%						0,5%
Czech Republic		3,3%					13,2%	1,8%
Belgium	1,4%	3,3%		4,4%	1,7%		3,8%	2,0%
UK	2,9%	43,3%	1,4%		1,7%			4,0%
Portugal		3,3%				97,3%		8,3%
Slovakia							81,1%	9,4%
Spain				94,1%	0,8%			14,4%
Greece	92,8%	13,3%						15,1%
Estonia			98,6%					16,2%
Italy		3,3%						25,4%
Other	1,4%	13,3%		1,5%	0,8%		1,9%	1,8%

Education Level

	GR (%)	UK (%)	EE (%)	ES (%)	IT (%)	PT (%)	SK (%)	Total (%)
High school level	4,3%	6,7%	8,1%	13,2%	31,4%	18,9%	22,6%	17,0%
University level	50,7%	50,0%	90,5%	38,2%	35,5%	43,2%	73,6%	53,3%
Post-graduate level	43,5%	40,0%	0,0%	45,6%	29,8%	32,4%	3,8%	27,2%
Other	1,4%	3,3%	1,4%	2,9%	3,3%	5,4%	0,0%	2,4%