

## D4.1. Appendix No 2

### Bio4HUMAN online survey on bio-based solutions (WP4, T4.2.1)

#### **Disclaimer:**

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**Scope:** The online survey was intended for companies, RTOs, Universities, clusters and other BIC members and associated organizations to provide BIO4HUMAN with information on their existing or under development bio-based solutions that could contribute to the reduction of solid waste in humanitarian context.

**Note:** This appendix only presents the questions of the survey as they appeared in the online questionnaire. The information gathered from the responses to the survey has been analyzed by BIO4HUMAN's partners with the aim of filtering out the most relevant solutions for further evaluation in subsequent work packages (e.g. WP5 and WP6).

*Bio4HUMAN is a pivotal Horizon Europe-funded initiative focusing on the solving of solid waste management (SWM) challenges in humanitarian settings by employing bio-based solutions, i.e. products, services and technologies.*

*Why it's definitely worth it to take part in the survey? Thanks to your participation in the BIO4HUMAN survey your bio-based solutions (products, services, technologies) may get noticed by the humanitarian community! The solutions identified through the questionnaire will get a chance to appear in the Project final guidelines. Of course, such a presentation in the guidelines must get the preceding approval from your company or organisation.*



Before you start

**Before starting the survey, please take a look at the examples of the biobased solutions\* that apply to humanitarian context. Please do not limit yourself to the categories of showed examples. Your product or technology can also find an innovative or even unexpected application in the humanitarian context!**

\*Bio-based solutions, derived from biological resources, such as plants, animals, microorganisms, that interest us:

-Bio-based products/services in order to diminish the amounts of waste generated by humanitarian interventions.

-Bio-based technologies or processes in order to cope with the amounts of waste generated in the humanitarian context.

Examples of bio-based solutions with potential relevance for Bio4Human:



Solutions for replacing non – renewable materials with concrete products conveying sustainability



Solutions for transforming the waste and utilizing it for innovative products with high energy efficiency and low impact on the natural environment



New and original applications of residues – as a standalone resources or after further processing and mixing



Ideas for recombining the biobased materials and further ingredients

## Flexible bags



## Cleaning products



## Tableware



## Sleeping pads



## QUESTIONNAIRE

### Agreement & key Information

Participating in this survey is voluntary. By participating in this survey, you consent to the use of the gathered answers only for the research activities of the BIO4HUMAN project. In case you choose to participate you agree on the following points:

- That your consent is voluntary
- We can use your answers for the BIO4HUMAN activities

1. Company or organisation name \*

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2. Is your company or organisation member of BIC? \*

- Yes, BIC industry member
- Yes, BIC associate member
- No, other

3. Please enter an e-mail address \*

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4. Has your company or organisation developed any bio-based solution (product/service or technology) of potential application in humanitarian interventions? If not, please skip to question 19. \*

- Yes, product
- Yes, technology
- Yes, service
- Under development
- No



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5. Can you briefly present / describe the bio-based solution developed or under development? If multiple solutions have been developed, please provide details for each of them.

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6. What is the approximate TRL of the bio-based product?

- TRL 3-4 (proof-of-concept)
- TRL 5-6 (validation in relevant environment)
- TRL 7-8 (prototype demonstration)
- TRL 9 (commercial product)
- NA

7. What is the approximate TRL of the bio-based technology?

- TRL 3-4 (proof-of-concept)
- TRL 5-6 (validation in relevant environment)
- TRL 7-8 (prototype demonstration)
- TRL 9 (commercial product)
- NA

8. What is the approximate TRL of the bio-based service?

- TRL 3-4 (proof-of-concept)
- TRL 5-6 (validation in relevant environment)
- TRL 7-8 (prototype demonstration)
- TRL 9 (commercial product)
- NA

9. What are the costs/investments related to your solution? (E.g. for technology the size of investment, for product the estimate selling price, for service the estimate size of investment and infrastructure needed).

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10. If your solution is a product, what is your feedstock?

- Plant-based
- Waste/By-product
- Other
- NA

11. If you chose "Other", please specify the feedstock.

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12. When applicable, what type of residue/waste is your solution able to utilize and valorize?

- Solid urban biowaste (e.g. household organic waste)
- Industrial waste (e.g. food processing waste)
- Agricultural waste
- Other
- NA

13. If you chose "Other", please specify the waste.

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14. Which market(s) does your solution target?

- Europe
- Asia
- America & Latin  
America
- Africa
- Oceania

15. Is your solution reproducible in a different geographic area?

- Yes
- No
- Do not know

16. Is your solution affected by climatic conditions?

- Yes



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- No
- Do not know

17. If you chose "Yes", please briefly explain the reasons(s).

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18. Is it possible to refine the solution as an autonomous and/or mobile unit?

- Yes
- Yes
- No
- Under study
- Could be
- NA
- Do not know

19. Please choose the end-of-life stage:

- Reuse materials (for a service or technology solution)
- Recycle materials (for a service or technology solution)
- Recover materials (for a service or technology solution)
- Recover energy (for a technology solution)
- Biodegradable bio-based product solution
- Compostable bio-based product solution
- Other, please specify in the next question

20. If you chose "Other", please specify the end of life stage.

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21. Have you conducted a life cycle assessment (LCA) for the solution?

- Yes, and there is information in open access
- Yes, but it is confidential
- No
- Do not know

22. Would you be willing to provide Bio4HUMAN partners more information on the solution?

- Yes
- No

23. If your company or organisation has a department of R&D&I activities, in which kind of areas of research is your company or organisation focused on?

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24. Would your company or organisation be interested in the results obtained in Bio4HUMAN for future options of collaboration in the humanitarian context?

- Yes
- No

**Thank you for completing the survey!**