

Bio-based solutions for humanitarian applications

The global solid waste management crisis (and any related pollution) is increasingly urgent to address and it can disproportionately affect countries that commonly receive humanitarian assistance. Humanitarian aid, including EU-funded aid, is delivered both within EU boundaries and beyond, including to remote areas, posing logistics challenges of waste management. This call would contribute by examining on how bio-based products and systems could contribute to managing environmental challenges relevant to waste in humanitarian contexts. For example, based on existing assessment studies[[E.g. World Food Programme Environmental Sustainability Unit.]], issues pertain with durability of materials compared to the timeframe needed for their integrity to guarantee necessary quality, cost effectiveness of managing waste, prevention of littering, safety to end-users and operators as well reuse, recycling, or biodegradability and composting of waste materials in humanitarian settings.

Proposals should:

- Assess the scope for which bio-based innovative technological solutions as well as bio-based systems have more environmentally sound applicability (including zero pollution and climate change considerations) for different and relevant applications,[[E.g. plastic products and packaging, logistic assets, textiles, waste treatment, water treatment etc.]] under humanitarian contexts (scoping exercise).
- Evaluate socio-economic/governance aspects, including the replication potential of appropriate solutions.
- Include appropriate lifecycle assessment methodologies to examine the potential to reduce the environmental impact (accounting also for biodiversity, ecosystems preservation and enhancement, zero pollution as well as greenhouse gas emissions) of proposed solutions, under relevant humanitarian aid conditions (variable environmental, social and economic conditions).
- Develop guidelines and recommendations to policy makers, bio-based sector actors as well as humanitarian aid operators/practitioners (e.g. NGOs). Such guidelines can address further R&D&I needs and socioeconomic considerations, detailing on the potential of bio-based products and bio-based systems for uptake, based on the scoping exercise and a SWOT analysis. For all

aforementioned aspects, humanitarian context specificity is crucial and must be taken into account for the analysis.

- Implement multi-actor approach (MAA) by involving a wide range of bio-based sector actors, humanitarian aid actors as well as other relevant stakeholders, accounting also for trans- and interdisciplinary research.

Where relevant, proposals should seek links and synergies as well as capitalise on the results of past and ongoing EU research projects[[E.g. see also parallel topic HORIZON_CL6-2024-CircBio-01-05 Programmed biodegradation capability of bio-based materials and products, validated in specific environments.]] (Horizon 2020, LIFE, Horizon Europe, including the Bio-based Industries Joint Undertaking (BBI JU) / Circular Bio-based Europe Joint Undertaking (CBE JU)).

International cooperation and the consideration of gender-related aspects are highly encouraged. Social Innovation and social science and humanities (SSH) aspects should form an essential part of the funded projects.

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