



BIO4HUMAN

Stakeholder Analysis

Due date: 31/03/2024

Responsible partner: PIN



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Document information

DELIVERABLE NUMBER	D3.1							
DELIVERABLE NAME	Stakeholder Analysis							
ANNEXES	Annex A- List of stakeholders							
TYPE*	R:	X	DMP:		DATA:		DEC:	
DISSEMINATION LEVEL**	PU:	X	SEN:		EU CLASSIFIED:			
LEAD BENEFICIARY	PIN							
DUE DATE	31/03/2024							
SUBMISSION DATE	31/03/2024							

*R — Document, report; DMP — Data Management Plan; DATA — data sets, microdata, etc; DEC — Websites, patent filings, videos, etc.

**Public — fully open (automatically posted online); Sensitive — limited under the conditions of the Grant Agreement; EU classified — restraint-ue/eu-restricted, confidentiel-ue/eu-confidential, secret-ue/eu-secret under decision 2015/444

Document history

ID	DATE	AUTHOR	CHANGE
1.	15.3.2024	Marie Šmídová Skálová	First draft
2.	15.-23.3.2024	Comments from Enspire, PAH, PROCIVIS, UC and IBF	Second draft
3.	28.3.2024	Marie Šmídová Skálová	Final version

Contents

1. Summary.....	5
2. Introduction	6
3. Methodology.....	7
Stakeholder identification – stakeholder database.....	8
Categorisation according to the Quadruple Helix model.....	10
Stakeholders’ categorisation.....	11
Industry.....	12
Academia.....	14
Community.....	15
Engagement through established networks and personal contacts	18
Promoting Bio4HUMAN activities on social media	19
4. Monitoring and Evaluation.....	21
5. Challenges and mitigation strategies.....	21
6. Conclusions.....	23

List of Figures

Figure 1: Bio4HUMAN conceptual flow.....	7
Figure 2: Quadruple Helix model.....	10
Figure 3: Power-Interest Grid.....	11

List of Tables

Table 1: Industry – categorization criteria.....	13
Table 2: Academia – categorization criteria.....	14
Table 3: Community – categorization criteria	15
Table 4: Government/Policy makers – categorization criteria.....	18
Table 5: Bio4HUMAN social media.....	20
Table 6: Risks and mitigation strategies.....	21

List of abbreviations

AIMPLAS	Asociacion de Investigacion de Materiales Plasticos y Conexas
BHA	Bureau for Humanitarian Assistance
BIC	Bio-based Industries Consortium
CBE	Circular Bio-based Europe
CFRM	Community feedback and response mechanisms
DRC	Democratic Republic of Congo
DG ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations
FCDO	Foreign, Commonwealth & Development Office
HF	Humanitarian Fund
IBF	Irish Bioeconomy Foundation
ICRC	International Committee of the Red Cross
IFRC	International Federation of Red Cross and Red Crescent Societies
ITENE	Instituto Tecnológico del Embalaje, Transporte y Logística Paterna
MEAL	Monitoring, evaluation, accountability, and learning
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PAH	Polska Akcja Humanitarna Fundacja
PIN	People in Need
RCRC	Red Cross and Red Crescent Movement
SWM	Solid Waste Management
SWOT	Strengths, Weaknesses, Opportunities and Threats
UC	Universidad de Cantabria
UNEP	UN Environment Program
UNICEF	The United Nations International Children's Emergency Fund
WASH	Water, Sanitation and Hygiene
WREC	Waste Management Measuring, Reverse Logistics, Environmentally Sustainable Procurement and Transport, and Circular Economy
WWF	World Wide Fund for Nature

1. Summary

This deliverable in the form of a report presents the findings from the stakeholders' mapping exercise (T3.1) conducted from January 2024 to March 2024 by five partners of the Bio4HUMAN consortium from humanitarian, bioeconomy and academic sectors: People in Need (PIN), Polish Humanitarian Action (PAH), Irish Bioeconomy Foundation (IBF), Universidad de Cantabria (UC) and Fundacja Edukacji i Dialogu Społecznego PRO CIVIS (PROCIVIS) in both project's target areas (Democratic Republic of Congo - DRC and South Sudan) and in Europe. This deliverable describes the stakeholder mapping and analysis methodology and introduces stakeholders from bio-based and humanitarian sectors at different levels (based on their power and interest), and outlines strategies for how to engage them.

Bio4HUMAN is an interdisciplinary project with the main objective of providing humanitarian and bio-based sectors' stakeholders with science-based information on the application potential, sustainable performances, and circularity of bio-based products and systems, suitable for humanitarian purposes. The project thus involves a diverse range of actors (bio-based and humanitarian sectors' actors, circular economy experts) and their engagement lies at the foundation of Bio4HUMAN strategy. Bio4HUMAN will involve stakeholders at different levels: as respondents in qualitative surveys (scoping exercise, feasibility study, SWOT analysis), but also as potential replicators and amplifiers of the Bio4HUMAN results through the application of the guidelines and recommendations presenting bio-based solutions for humanitarian practitioners, policymakers, and bio-based industry. The stakeholders will be engaged by different strategies, co-designed by all Bio4HUMAN actors, based on their experience of working with bio-based sector actors, such as manufacturers and processors: Instituto Tecnológico del Embalaje, Transporte y Logística Paterna (ITENE), Asociación de Investigación de Materiales Plásticos y Conexas (AIMPLAS), bio-economy experts (PROCIVIS, IBF) and humanitarian aid operators (PIN, PAH).

2. Introduction

According to the UN Environment Program (UNEP)/United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Joint Environment Unit (JEU), the humanitarian community, guided by the ‘Do No Harm’ principle, has been focusing more and more on reducing the environmental impact of its operations, in line with the key pillars of the European Green Deal: climate neutrality, climate resilience, circular economy, zero pollution and biodiversity protection.¹ Proactively addressing environmental issues in humanitarian action can contribute to minimising its negative impact on the environment, leading to e.g. deforestation, desertification, soil erosion and pollution.² One of the areas which significantly affect local environment is the lack of proper solid waste management (SWM), including the waste produced by humanitarian actors. Safe management of solid waste is critical for public health, as its uncontrolled disposal could contribute to the spread of diseases, pose a fire risk as well as contaminate water supplies and soil (block watercourses, causing e.g. flooding). One of the possible solutions to improve the SWM in humanitarian settings and thus reduce the potential harm to the local environment and communities caused by humanitarian actors is the usage of bio-based products and systems as alternatives to harmful materials.

The overall objective of Bio4HUMAN is to streamline cooperation between humanitarian aid operators and stakeholders in the bio-based sector and provide them with evidence-based guidance on potential application, sustainable performance and circularity of bio-based products and systems suitable for humanitarian settings and purposes.

Proved research methodologies, such as scoping exercise (WP3 and WP4), LCA analysis (WP5), feasibility study and SWOT analysis (WP6) will be applied in order *a)* to properly assess the needs of the humanitarian sector with regards to SWM and how they are currently being addressed; *b)* to examine the applicability of innovative, sustainable bio-based products and systems in the humanitarian context; *c)* to explore the socio-economic and governance aspects of the proposed solutions; and *d)* to assess the potential for replication of the theoretical bio-based solutions; applying an interdisciplinary and multi-actor approach, as shown in the conceptual flow below.

¹ Environment and Humanitarian Action (JEU Factsheet), https://www.eecentre.org/wp-content/uploads/2019/07/factsheet_EHA_new-logo.pdf

DG ECHO’s approach to reducing the environmental footprint of humanitarian aid, https://civil-protection-humanitarian-aid.ec.europa.eu/what/humanitarian-aid/climate-change-and-environment/dg-echos-approach-reducing-environmental-footprint-humanitarian-aid_en

² The management of humanitarian waste, <https://defishumanitaires.com/en/2022/07/01/the-management-of-humanitarian-waste/>

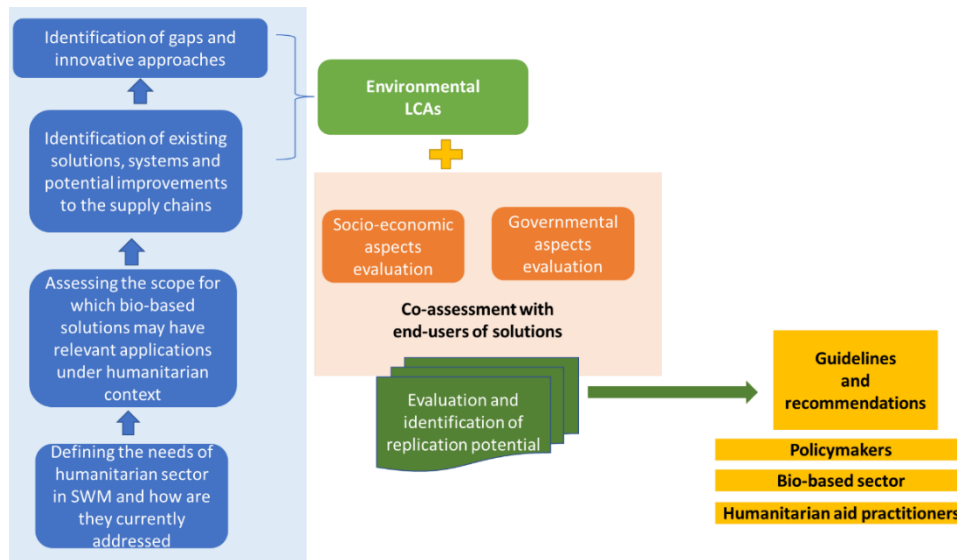


Figure 1: Bio4HUMAN conceptual flow

The purpose of the stakeholder mapping (T3.1) described in this deliverable is thus twofold: to understand, identify and prioritize the stakeholders within humanitarian and bio-based sectors in target areas (DRC, South Sudan and in Europe) for all the phases of Bio4HUMAN shown above; and to develop strategies to successfully and meaningfully engage with them.

The stakeholder analysis consisted of the following steps:

1. Identification of the bio-based and humanitarian sectors' stakeholders and creation of a stakeholder database

A database of stakeholders was created that includes stakeholders' contact details, and additional information (e.g. sectoral focus, size of the organisation, or involvement in SWM) as well as information related to their interest in participating in Bio4HUMAN. This database is an internal, living tool for Bio4HUMAN partners; that will help with continuous identification, analysis and communication with the stakeholders who have an interest or influence on Bio4HUMAN. A list of stakeholders without contact details (in line with GDPR) has been parallelly developed (Annex A).

2. Stakeholder categorisation

The second step of the analysis was to categorize the identified stakeholders using the power-interest grid. Based on this exercise, each stakeholder was classified as key, important or other. This categorization was documented in the stakeholder database. This categorisation is also an ongoing process, as new stakeholders will be added/express their willingness to participate throughout the implementation of the project.

3. Definition of engagement strategies

Engagement strategies with different stakeholder groups were developed. This will contribute to setting up tailored engagement strategies (in T7.1).

3. Methodology

The stakeholder mapping was conducted from January 2024 to March 2024, led by PIN, together with PAH, representing the humanitarian sector, UC (academia), IBF and PROCIVIS (bio-economy). Other Bio4HUMAN partners were involved in

stakeholder identification and provided methodology consultation and feedback. A review of existing literature (evaluations, manuals, reports, existing policies, guidance etc.) was conducted as part of the mapping, using the following sources (non-exhaustive list):

1) Humanitarian sector:

- The Sphere Handbook: Humanitarian Charter and Minimum Standards in Humanitarian Response (Sphere Association)
- Guidance on the operationalisation of the minimum environmental requirements and recommendations for EU-funded humanitarian aid operations (DG ECHO)
- The Green Recovery and Reconstruction Toolkit (WWF)
- Managing Solid Waste: Sector Specific Guidelines for the Red Cross Red Crescent (IFRC)
- The Climate and Environment Charter for Humanitarian for Humanitarian Organisations (ICRC and IFRC)
- Waste management and reverse logistics in the humanitarian context (WREC)
- Global Digest of Waste Management. Our responsibility towards waste: Standards, Conventions, Guidelines (WREC)
- What a Waste 2.0. A Global Snapshot of Solid Waste Management to 2050 (World Bank Group)

2) Bioeconomy sector:

- The strategical, programming, and legislative documents of the EU (e.g. “A sustainable bioeconomy for Europe. The updated Bioeconomy Strategy”, “Common Agricultural Policy (CAP) 2021 – 2027”, “new Circular Economy Action Plan 2020”, “Waste Framework Directive (WFD)” 2008/98 EC 98/EC, “The European Green Deal”, “The Green Deal Industrial Plan”)
- The national documents on bioeconomy (e.g. Germany, Ireland, Spain, Norway)
- The recently published reports and analysis (e.g. “A competitive bioeconomy for sustainable future” by CBE JU, “Circular bioeconomy: The business opportunity contributing to a sustainable world” by Boston Consulting Group)
- The potential of emerging bio-based products to reduce environmental impacts (Radboud Institute for Biological and Environmental Sciences, Department of Environmental Science)

Stakeholder identification – stakeholder database

Given the interdisciplinarity of the Bio4HUMAN consortium and the fact that the stakeholder mapping was the first activity of Bio4HUMAN, and perceived as a building stone for all subsequent phases of the project, a joint planning was organized at the end of January 2024 in order to pre-identify the main stakeholder groups and agree on tools for stakeholder analysis to be used. Through the discussion, main humanitarian and bio-based stakeholders’ groups were pre-identified and divided into four main categories, based on the Quadruple Helix model (see more below): academia, industry, community (humanitarian actors, local communities) and government/policy-makers. Using those categories, PIN

developed an Excel database template in English and French (for the usage in DRC). The template was tailor-made by PIN, considering the Bio4HUMAN multi-actor approach, and it includes multiple categories for each type of stakeholders (e.g. size of the organisation, the sectoral focus, involvement in SWM etc.). Using this template, PIN and PAH have mapped the stakeholders in all categories in DRC and South Sudan respectively, as well as in Europe (e.g. INGOs/UN agencies' HQs in Europe). UC, IBF and PROCIVIS used the same template for mapping stakeholders in the bio-based sector (industry, academia and policy makers) in Europe. Other Bio4HUMAN partners were also invited to participate in the mapping, in order to complement the efforts of PIN, PAH, IBF, UC and PROCIVIS. The stakeholder database is stored in the Bio4HUMAN private SharePoint for the use of Bio4HUMAN partners only, in compliance with GDPR. This database is an internal tool for Bio4HUMAN partners.

At the date of this report's submission, the stakeholder database contains 292 stakeholders.

Based on the experience of Bio4HUMAN partners, it is expected that additional stakeholders will be identified throughout the project implementation and added to the stakeholder database continuously. It is very common that when conducting qualitative data collection in humanitarian settings/within the humanitarian community, that the snowball sampling applies: new contacts are gathered as referrals from the already identified stakeholders (usually when doing interviews or other types of data collection). The stakeholder database is thus a living document.

The main stakeholder groups were identified as follows:

Humanitarian sector

Humanitarian sector stakeholders (international and local humanitarian actors, communities of affected people, governments, and academia) will be involved in Bio4HUMAN firstly as respondents for qualitative data collection (scoping exercise, feasibility study and SWOT analysis). Secondly, humanitarian stakeholders will provide sources of grey literature (e.g. SWM reports from INGOs and SWM regulations documents from government authorities). Lastly, humanitarian stakeholders based in Europe, but operating worldwide, will be also included as consultants, and as potential future replicators and amplifiers of the solutions identified by Bio4HUMAN (e.g. integration of developed guidelines into existing ones).

Bio-based sector

Bio-based sector stakeholders (companies, academia and policymakers) will be involved in Bio4HUMAN as respondents for qualitative data collection exercises (scoping exercise, feasibility study and SWOT analysis), consultants, or sources of research materials. The bio-based sector stakeholders have been mapped based on their potential as producers of bio-based solutions in the target areas and relevant government/policy makers and public bodies at the national and EU level.

Categorisation according to the Quadruple Helix model

In order to make sure the stakeholder mapping covers all society groups within the humanitarian and bio-based sectors, the Quadruple Helix (QH) model was applied, as shown below:

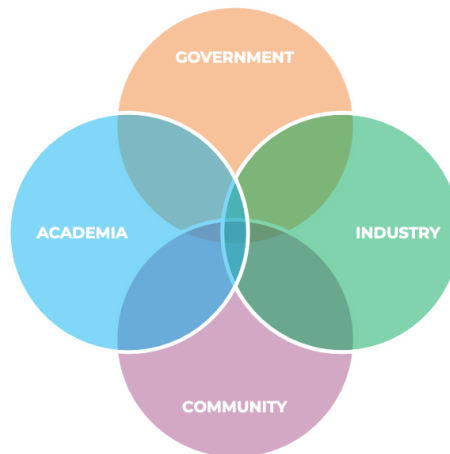


Figure 2: Quadruple Helix model

Based on this theoretical model, the stakeholders in target areas (DRC, South Sudan, and Europe) were categorized and mapped (their data inserted in the stakeholder database) within each of the four QH groups as follows (detailed description in chapter 4. Stakeholder description below).

- 1) Industry
 - a) Bio-based producers and bio-based/bio-economy actors based in Europe;
 - b) Potential producers of bio-based solutions and companies involved in SWM in DRC and South Sudan.
- 2) Academia
 - a) Researchers/laboratories focusing on bio-based solutions/circular economy and/or SWM in the humanitarian sector;
 - b) Horizon Europe consortia.
- 3) Community
 - a) Community members/leaders in DRC and South Sudan;
 - b) Humanitarian actors: e.g. international and national humanitarian NGOs/UN, clusters, donors (based both in DRC/South Sudan and in Europe).
- 4) Government/Policy makers
 - a) EU level:

- Policymakers responsible for humanitarian aid deployment, waste management, circular economy, and environment protection;
- National government policymakers within the EU (national level strategical and programming documents, e.g. Irish bioeconomy Action Plan 2023-2025).
 - b) DRC and South Sudan level:
- National level: e.g. Ministry of the Environment, Nature and Tourism, Ministry of Health, Ministry of Agriculture and Food Security;
- Provincial level: DRC's environment unit of the Provincial Government, Coordination of Environment and Sustainable Development of South Kivu, South Sudan's Central Equatoria State Government Secretariat;
- Municipal: Juba City and Yei municipality Councils, Kinshasa sanitation and public works authority, Bukavu City Hall.

Stakeholders' categorisation

Once the stakeholders were mapped and complementary data about them collected in the stakeholder database, the power-interest grid (as shown below) was applied to categorise the stakeholders based on their power and interest.

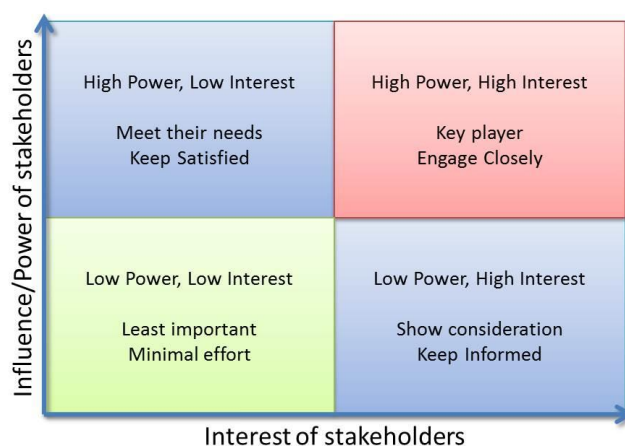


Figure 3: Power-Interest Grid

In order to analyse the power and interest of each stakeholder, different criteria (as described below) were applied within each stakeholder group (industry, academia, community and government/policy makers). A stakeholder scored high in each category (power/interest) if fulfilling at least one of the described criteria. Based on the analysis, each stakeholder was categorized either as:

- key (high power & high interest)
- important (low power & high interest; high power & low interest)
- other (low power & low interest)

This categorisation is documented in the stakeholder database.

Key stakeholders

Bio4HUMAN will involve all key stakeholders as respondents to a series of qualitative data collection exercises and as potential amplifiers and replicators of identified theoretical bio-based solutions.

Important stakeholders

The important stakeholders with high power and low interest will be targeted by relevant engagement strategies (see below) with the goal of transforming them into key stakeholders. Even if this transition will not happen, these stakeholders will still be continuously informed about and closely involved in Bio4HUMAN, with the aim to get them to participate at least partially (e.g. by providing key documents and inviting them to the key project events). Based on the experience of Bio4HUMAN partners, it is not expected that there will be many stakeholders with high power whose reluctance to participate will not be mitigated by engagement strategies. Nevertheless, if this happens (e.g. national government **Key stakeholders**

Bio4HUMAN will involve all key stakeholders as respondents to a series of qualitative data collection exercises and as potential amplifiers and replicators of identified theoretical bio-based solutions.

Important stakeholders

The important stakeholders with high power and low interest will be targeted by relevant engagement strategies (see below) with the goal of transforming them into key stakeholders. Even if this transition will not happen, these stakeholders will still be continuously informed about and closely involved in Bio4HUMAN, the aim to get them to participate at least partially (e.g. by providing key documents and inviting them to the key project events). Based on the experience of Bio4HUMAN partners, it is not expected that there will be many stakeholders with high power whose reluctance to participate will not be mitigated by engagement strategies. The involvement of high-interest & low-power stakeholders will also be considered, e.g. in the data collection, but the level of their power will be weighted-in when evaluating the responses. The low power & high-interest stakeholders will be nevertheless recipients of various dissemination activities (WP7), to be developed later. Important stakeholders with low power but high interest will be engaged to provide sources of grey literature or their inputs.

Other stakeholders

Other stakeholders (low interest and low power) will not be directly involved as respondents, potential replicators or amplifiers. However, they will be informed about the project's results and will be involved as recipients of dissemination activities. Other stakeholders will be monitored and in case their status changes (e.g. they will become interested), their re-involvement will be considered.

4. Stakeholder description

Industry

Within the industry, Bio4HUMAN targets mainly bio-based companies that will become respondents to the second phase of the scoping exercise (WP4). The main focus of the mapping was on members of the Bio-based Industries Consortium

(BIC)³, potential producers of bio-based solutions from the following sectors: agriculture, food, textiles, plastics, chemicals, paper and packaging, wood, pharmaceuticals, energy and construction. In all those sectors there may be bio-based solutions or systems responding to the identified needs of the solid waste issues in the humanitarian context. It has been assumed at the stage of conceptualizing the project that the industry is already prepared to deliver solutions helping with the minimization of solid waste in the humanitarian context, mainly through:

- new bio-based production or packaging solutions;
- bio-based technologies and systems that ensure the natural biodegradation of residues or their easy disposal;
- bio-based technologies, that offer the possibility of further use of the waste by the local community, e.g., for fertilisers or biofuel production.

Other bio-based companies were identified and will be involved in Bio4HUMAN as sources of information on their products and services (e.g., the Plant Based Products Council, State of Green, Reciclalia, B-circular, Evoenzyme).

In DRC and South Sudan, potential producers of bio-based solutions were identified as well amongst local businesses/enterprises (including start-ups and MSMEs). They will be involved as respondents in the qualitative feasibility study (WP6) to assess the applicability of identified bio-based solutions in DRC and South Sudan.

Bio-based companies based in Europe will be the potential replicators of Bio4HUMAN's theoretical outcomes (recommendations and guidelines). Lastly, innovators and entrepreneur community actors will exemplify the important but not always obvious influence the bio-based solutions may have in the humanitarian context. To categorise the stakeholders according to their power and interest, the following criteria were identified.

Table 1: Industry – categorization criteria

Power	Interest
Middle or Big size enterprise	Interest in bio-based solutions production
Experience with bio-based solutions production	Interest in participating in Bio4HUMAN qualitative data collection and providing information from their expertise/past projects
Member of an association/group/platform concerned with bio-based solutions	Interest in replicating theoretical bio-based solutions in the future

³ <https://biconsortium.eu/membership>
 BIC also provided Bio4HUMAN with Letter of Support for close cooperation.

Track record in SWM/processing solid waste	Interest in adopting/exploiting their technologies for solid waste treatment in areas under study in Bio4HUMAN
Track record in processing different types of waste (more than 1 type)	
Partner of established INGO/UN agency	
Member of Biobased Industries Consortium (BIC)	
Member of Bioeconomy Ventures Platform	

At the date of this report’s submission, the stakeholder list contains 91 industry stakeholders (see Annex A).

Academia

Within academia, Bio4HUMAN targets researchers and laboratories focusing on bio-based solutions, circular economy and/or SWM in the humanitarian sector; based in DRC, South Sudan and across Europe, such as:

- Bio-based researchers and their respective laboratories
- Circular economy researchers
- Horizon Europe consortia
- Bioeconomy research centres
- Sustainable Development and Environment institutes and research facilities

Within Europe, the main focus was on academia stakeholders who are associated members of BIC⁴, and others from the academia participating at European funded projects under CBE (Circular Bio-based Europe) programs⁵.

In DRC and South Sudan, academic entities (including independent research institutes) focusing on bio-based technologies or SWM were mapped and stakeholders identified.

In order to categorise the academia stakeholders according to their power and interest, the following criteria were identified.

Table 2: Academia – categorization criteria

Power	Interest
Proven research track record in waste management	Interest in bio-based solutions research
Proven research track record in bio-based industry/bioeconomy/LCA	Interest in participating in Bio4HUMAN qualitative data collection

⁴ <https://biconsortium.eu/associate-members>

⁵ <https://www.cbe.europa.eu/projects>

Member of an association/group/platform concerned with bio-based solutions or SWM	Interest in replicating theoretical bio-based solutions in the future
Experience with research as a partner of an established INGO/UN agency	Interest in sharing research reports (in SWM in humanitarian settings)
Horizon Europe funds receiver	Interest in sharing research results and best practices
Participation in relevant European projects (Bio4Africa, DIVAGRI, WORM)	
Focus on supply chains for humanitarian interventions	

At the date of this report's submission, the stakeholder list contains 38 academia stakeholders (see Annex A).

Community

Within the community group, Bio4HUMAN targeted disaster/conflict-affected community members/leaders and humanitarian actors (international and national humanitarian NGOs, UN agencies, clusters, donors) based both in DRC/South Sudan and in Europe. This stakeholder group is key for the success of Bio4HUMAN as they will be the main respondents in qualitative data collections (scoping exercise, feasibility study, SWOT), as well as sources of grey literature (reports), based on which the theoretical bio-based solutions will be identified. Humanitarian actors will also be the main potential replicators and amplifiers of theoretical bio-based solutions. In order to categorise the stakeholders according to their power and interest, the following criteria were identified.

Table 3: Community – categorization criteria

Stakeholder sub-group	Power	Interest
INGOs/LNGOs/UN agencies	Experience with SWM implementation (especially proven track record in integrated sustainable SWM management)	Interest in bio-based solutions implementation
	Experience with bio-based solutions implementation	Interest in sustainable SWM
	Member of WASH/Logistics (global/national/regional) clusters	Interest in replicating/amplifying theoretical bio-based solutions in the future
	Humanitarian supply chain leader	Interest in sharing SWM needs assessment reports (in SWM in humanitarian settings)

	Geographical coverage (e.g. projects implemented in more than 5 countries for INGOs/target areas for LNGOs)	Interest in participating in Bio4HUMAN qualitative data collection (KIIs)
	Horizon Europe funds receiver	
	WORM consortium partner	
Clusters/working groups	Cluster lead (WASH/Log) at global/national/regional level	Interest in changing guidelines/regulations with regards to bio-based solutions
	Leader of working groups focusing on sustainable logistics	Interest in sharing SWM needs assessment reports (in SWM in humanitarian settings)
Donors	Main humanitarian donor (e.g. ECHO, FCDO, BHA, HF, UNICEF)	Interest in changing guidelines/regulations with regard to bio-based solutions
	Environmental requirements/recommendations in place (e.g. environmental projects' screening)	Interest in sharing a list of funded projects focusing on bio-based solutions/innovations in SWM
Communities/community leaders	Recipient of humanitarian aid	Interest in participation in FGDs/KII/observations
	Active in SWM (including waste from hum. organisations)	
	Recycling/re-using waste (including waste from humanitarian organisation)	

At the date of this report's submission, the stakeholder list contains 109 community stakeholders (see Annex A).

Government/policy makers

Within this group, Bio4HUMAN targeted policymakers and regulators responsible for SWM, humanitarian aid deployment, waste management, circular economy/bioeconomy, and environment protection in Europe, DRC and South Sudan. They will be potential future replicators and amplifiers of Bio4HUMAN theoretical bio-based solutions.

In regards to the bioeconomy - the fundamental role is being played by the institutions of the European Union, mainly the European Commission. The bio-economic issues are being handled by the following structural units of the EC:

- Directorate General for Research & Innovation - Planet, People and Science for Policy
- Directorate General for Research & Innovation - Prosperity
- Directorate General Enterprise & Industry
- Directorate General Energy
- Directorate General for Internal Market, Industry, Entrepreneurship and SMEs (GROW)
- European Innovation Council and SMEs Executive Agency

Further important European institutions/ entities helping out with setting the directions of the development of the bioeconomy industry are *inter alia*:

- Circular Bio - based Europe Joint Undertaking (CBE JU) - a €2 billion partnership between the European Union and the BIC. CBE JU funds projects advancing competitive circular bio-based industries in Europe;
- European Environment Agency, co - author of a report "Circular by design. Products in the circular economy".

From the point of the intellectual property in the bioeconomy sector (products, services) the following institutions are worth mentioning: European Union Intellectual Property Office (industrial designs) and European Patents Office (patents).

Since humanitarian actors can work only if granted access by the governments where the humanitarian crisis happens and within their legal frameworks, policies and regulatory systems, they always work in coordination with local authorities (municipal, regional, and local public bodies). Both PIN and PAH are registered with relevant ministries in DRC (Ministry of Planning and Follow-up of the Implementation of the Modernity Revolution, Ministry of Social Affairs, Humanitarian Action and National Solidarity) and South Sudan (Relief and Rehabilitation Commission - Commission under the Ministry of Humanitarian Affairs and Disaster Management) respectively and collaborate with them at all levels, including lower-level local authorities based in remote communities and hard-to-reach areas.

In DRC and South Sudan, the following government representatives responsible for SWM/bio-based solutions or environment have been mapped: national level (e.g. Ministry of the Environment, Nature and Tourism, Ministry of Health, Ministry of Agriculture and Food Security), provincial level (e.g. DRC's environment unit of the Provincial Government, Coordination of Environment and Sustainable Development of South Kivu, South Sudan's Central Equatoria State Government Secretariat) and municipal level (e.g. Juba City and Yei municipality Councils, Kinshasa sanitation and public works authority, Bukavu City Hall) will be key respondents in feasibility study and SWM needs assessment. They will be also valuable source of grey literature (e.g. SWM regulatory documents/evaluations).

In order to categorise the stakeholders according to their power and interest, the following criteria were identified.

Table 4: Government/Policy makers – categorization criteria

Power	Interest
Main regulatory bodies/policy maker in SWM/bioeconomy (in Europe and DRC/South Sudan)	Interest in bio-based solutions
Implementor of SWM in DRC/South Sudan	Interest in participating in Bio4HUMAN qualitative data collection
Sectoral expertise: environment, WASH etc.	Interest in replicating theoretical bio-based solutions in the future
National institution / agency preparing, introducing and monitoring the implementation of strategies / programmes on the economic development	Interest in sharing assessment reports (e.g. in SWM in humanitarian settings), policies or regulatory documents
	Interest in changing guidelines/regulations with regards to bio-economy/WSM

At the date of this report's submission, the stakeholder list contains 54 government/policy makers stakeholders (see Annex A).

5) **Engagement strategies**

The definition of engagement strategies with different stakeholder groups will contribute to the setting up of tailored engagement approaches (T7.1). The dissemination and communication activities (WP7 and WP8) will aim to increase the engagement of all groups.

Together with the mapping of the project stakeholders, different engagement strategies were explored. There are two types of engagements:

- a) of stakeholders to participate in the qualitative data collection (WP3, WP4 and WP6) and to share their data and information (reports etc.);
- b) ongoing engagement through dissemination and communication activities (WP7 and WP8).

Based on the experience of Bio4HUMAN partners, the most effective way to engage stakeholders to participate in surveys and share their data/materials is through a) partnerships in networks/platforms and established partnerships/relationships; b) social media.

The process of defining engagement strategies will be on-going, e.g. the results from the first phase of the scoping exercise (T3.3.) will be used to best engage the stakeholders to be respondents for the second phase of the scoping exercise (WP4).

Engagement through established networks and personal contacts

All Bio4HUMAN partners are members of various international and national (coordination) networks and platforms either in humanitarian or bio-based sectors. Established relationships with other members of networks and platforms will lie at the core of successful stakeholder engagement. PIN and PAH have already been

engaging the stakeholders (for the first phase of the scoping exercise – the SWM needs assessment in humanitarian settings that will start in April 2024) through established (global, regional and national) humanitarian coordination networks (clusters: e.g. WASH, Logistics) as well as through other (European/global) networks of which they are members (e.g. VOICE, Alliance 2015, CHS Alliance, START Network, Global Clusters). The networks' leaders have already provided a variety of contacts and have also directly encouraged other members to get engage with BIO4HUMAN. PIN and PAH have been approaching identified stakeholders by specifying as much as possible the form of their possible involvement (e.g. timeline of interviews, feedback, information about the results, use of their logos etc.). Given the fact that PIN and PAH have been successfully implementing humanitarian and development projects in DRC and South Sudan for decades, they have been engaging respective governments authorities (at national, regional and local levels) through established partnerships. For this purpose, the branding materials of Bio4HUMAN were used and a two-pager about Bio4HUMAN, clearly outlining its objectives and how to achieve them was developed by Enspire. Once the project website will be functional (by the end of April 2024), the link to it will be disseminated as the best source of information. The same approach will be used for engaging community and academic stakeholders. For industries in South Sudan and DRC, contacts established at the stakeholders mapping phase will be used, and new contacts will be explored. The knowledge and experience of PIN's and PAH's national staff will be used when engaging national stakeholders (including the respect of socio-cultural context and knowledge of local languages).

The bio-based sector will engage stakeholders through networks including bioeconomy clusters (e.g. IBF, SPRING, CLIB, Food & Bio Cluster Denmark, BioEast Hub CR), platforms (e.g. BioeconomyVentures, BIC Platform and Consortium, European Bioeconomy Network, TP Organics - European Technology Platform for Research & Innovation into Organics and Agroecology, The Plant Based Products Council, State of Green) and partners from previous European projects. The information about Bio4HUMAN and its outcomes will also be shared among the national and regional clusters and hubs on bioeconomy i.e. the Polish National Bioeconomy Hub or IBF. Each bioeconomy Bio4HUMAN partner will engage its members networks including many third-level institutions (e.g. IBF in Ireland) as well as corporate and SME industry members. IBF also have a large network within the European bioeconomy including full membership of Biobased Industries Consortium. IBF has participated in European-funded projects in bioeconomy including coordinating BioeconomyVentures which created a platform for 450 bio-based start-ups, 100 investors and 25 ambassadors (bioeconomy clusters). IBF will engage stakeholders from the Irish and European bioeconomy network that it has for the Bio4HUMAN project.

The impact of Bio4HUMAN will be amplified thanks to the coordinated involvement of a wide range of actors and stakeholders. Different means will be implemented in order to motivate stakeholders to contribute to the outcomes of the project as well as to communicate/disseminate the project outcomes, as described below.

Promoting Bio4HUMAN activities on social media

For the purpose of stakeholder engagement, social media will be used. Within WP7 and WP8, under the lead of Enspire, a Dissemination, Communication, and Exploitation (DCE) plan will be developed in M6 that will include communication channels with different stakeholders, including social media. Since each group of stakeholders prefers and uses different types of social media, it is therefore

necessary to always investigate which are the best channels to be used. Bio4HUMAN partners have experience with this and will provide inputs for the DCE. Under T7.2, the design and creation of the Bio4HUMAN branding (logo and guidelines) was already developed. When activities and results of the project will be visible, further engagement of traditional media can be considered. Bio4HUMAN partners' communication departments have been also sharing Bio4HUMAN social media platforms on their web pages and social media platforms as shown below.

Table 5: Bio4HUMAN social media

Social media platform	Social media handle/link
LinkedIn	https://www.linkedin.com/company/bio4human/
Instagram	@bio_4_human https://www.instagram.com/bio_4_human/
Twitter/X	@bio_4_human https://twitter.com/bio_4_human

A consistent social media presence will help when engaging potential stakeholders as it will increase the chance that they have already heard about the project and thus increase their willingness to participate in it. Sharing the results of different studies on social media will be beneficial for later engagement of new stakeholders or for increasing the interest of low-interest & high-power stakeholders. For example, by sharing the results of the SWM needs assessment in humanitarian settings, new stakeholders can be engaged for the second phase of the scoping exercise.

On-going engagement

All stakeholders will be engaged continuously, and strong and diverse partnerships, offering targeted and thoughtful experiences, will be built. This will be achieved through e.g. online and on-spot meetings, thematic knowledge exchange webinars, and information sessions on the use of the research and related documents. Under the dissemination activities (WP7 and WP8), Bio4HUMAN will engage stakeholders through workshops for humanitarian actors (donors and organisations), where results of surveys will be presented. On-going feedback from stakeholders will be encouraged. A concrete DCE plan will be developed under T7.1. describing how partners will actively disseminate non-confidential results through the publication of open access reports and data, and through presentations at international events. Moreover, results will be presented in various scientific conferences/fora and workshops, such as e.g. European Humanitarian Forum, Humanitarian Networks and Partnerships Week, LCM conference series, LCA food series, EFIB conference. A replication roadmap (T8.2) will be developed and disseminated among stakeholders who are willing to explore and later implement innovative bio-based solutions to perform sustainably and offer circularity when delivering humanitarian aid. The replication roadmap will cover the training development and information package that will comprise of practical tools to ensure proposed bio-based solutions have practical impact. Replication of these tools will be promoted through two events per year, per relevant platform (Cluster level, public event level) under the WP8. Guidelines and recommendations will be disseminated for policymakers (at local, national, macro regional and EU-level), bio-based sector actors and for

humanitarian aid actors. In DRC and South Sudan, stakeholders will be engaged continuously, through information sharing (e.g. about practical solutions for better waste management within the humanitarian community) during formal and informal meetings, such as e.g. during clusters’ meetings. Government/policy makers stakeholders will be engaged through a set of activities (e.g. attendance of policy briefings on the EU and national level), targeted at policymakers in the relevant fields (humanitarian aid deployment, waste management, circular economy, and environment protection) and a set of policy recommendations will be provided. Industry stakeholders will be engaged by a set of presentations, or ad hoc trainings. Synergies and collaborations will be searched with other relevant projects and initiatives (e.g. other Horizon Europe consortia, such as WORM). Liaison and collaboration with identified projects and initiatives will be established.

4. Monitoring and Evaluation

Feedback will be collected and considered throughout the Bio4HUMAN implementation. PIN and PAH will use established MEAL systems in DRC and South Sudan, including community feedback and response mechanisms (CFRM). The established MEAL systems will be adjusted based on recommendations from the external Ethics Board, in line with the findings from the Ethics Summary report. For effective records of feedback/complaints for follow-up, CFRM tools such as complaint forms, complaint desks, hotlines, complaint boxes and complaint committees based on the area of applicability will be used. Complaints and feedback will be registered and followed up with on an ongoing basis and will be used to adjust project activities. The stakeholders will be informed about the feedback mechanisms at all stages of the project, including which CFRM channels are established, CFRM contacts and how feedback is processed. The feedback will be used to draw lessons learned to improve the engagement strategies. Monitoring of Bio4HUMAN will be done jointly with the dedicated PIN’s and PAH’s program team members, including project, MEAL and CFRM staff. Monitoring will include verifying the progress of the planned activities, lessons learned sessions, and regular project reviews conducted jointly with project partners. In general., Bio4HUMAN feedback will be conducted and collected through a set of surveys to conduct focus group discussions, key informant interviews, and individual consultations.

5. Challenges and mitigation strategies

Various risks have been already identified at the phase of the proposal development. While one risk was identified as directly linked to stakeholder engagement (see the first risk in the table below), other security risks are also applicable to the data collection for T3.3. Some new risks were identified during this stakeholder analysis and are also outlined below. The risks will be constantly monitored and updated and the Bio4HUMAN partners will design relevant measures to mitigate them.

Table 6: Risks and mitigation strategies

Description of the risk	Likelihood/severity	Mitigation strategies
Difficulty in obtaining support, interest, and participation from key	Low/high	Stakeholder engagement strategies will be used as described above.

<p>stakeholders in project activities</p>		<p>Mainly, Bio4HUMAN partners will use their networks (where they are members) and a) invite other members to participate e.g. in qualitative interviews or to provide some materials; b) will use those networks as platforms to further contact the partners of other members (snowball effect). Social media will be also used to spread the information within the humanitarian/bio-based sector. The scope of the project as well as its future benefits will be clearly communicated. Even though it is quite common, within the humanitarian sector, to participate in different surveys and studies, being motivated by the sheer willingness to improve together the quality and sustainability of humanitarian assistance, this aspect needs to be constantly communicated. This risk will be mitigated by the above-described engagement strategies, and it is possible that new ones will be identified, based on the experience in engaging stakeholders from the first phase of the scoping exercise.</p>
<p>State and/or non-state actors in DRC/South Sudan ban or limit access (including problems in obtaining working visas for expatriates, such as HQ-based MEAL experts who will be responsible for data collection in DRC/South Sudan).</p>	<p>Medium/high</p>	<p>PIN and PAH have both established well-functioning partnerships with national state and non-state actors. Both organisations are registered properly in the countries. Nevertheless, in DRC, starting from last year, there have been problems with obtaining visas for expatriates timely. This is an issue for all the humanitarian community and it can cause delays in implementation. This risk is being constantly mitigated by a) active partnerships with relevant ministries; and b) submitting the visa application well in advance.</p>

		Nevertheless, some delays in visa still occur and it seems to be beyond the scope of PIN/PAH's capacities to influence it. In case the delays happen, some work can be done remotely (preparation, training etc.).
The security situation deteriorates further and continuous access to the target area is lost (this can be caused as well by natural disasters/extreme weather).	Low/High	This risk has been mitigated for years by regular and transparent communication with all relevant state and non-state actors before and during implementation to seek and maintain acceptance and protection. Also, the pre-identified areas for data collection (mainly FGDs and observations) can be changed, should the access to them become complicated.

6. Conclusions

The stakeholder analysis focused on the identification of stakeholders in humanitarian and bio-based sectors, their categorisation and the description of strategies for how to effectively engage them. *Firstly*, the actors in humanitarian and bio-based sectors were identified (stakeholder database) and organised into four main groups, based on the QH model: industry, academia, community and government/policy makers. *Secondly*, the individual stakeholders within each group were categorised into three main groups based on their level of power & interest (using the power-interest grid): key, important and other stakeholders. *Thirdly*, the roles of three types of stakeholders were described within humanitarian and bio-based sectors. *Lastly*, strategies for efficient engagement with key and important stakeholders were described. MEAL and mitigation strategies have complemented the above-described steps. The stakeholder analysis was completed within the first phase of Bio4HUMAN, prior to the start of the scoping exercise and other qualitative surveys (feasibility study, SWOT) and other activities. This analysis may be repeated at later stages of the project if needed (e.g. to categorize additional stakeholders and identify additional engagement strategies). As described above, new stakeholders will be added continually throughout the implementation of the project, in a snowball effect, based on references from already engaged stakeholders.

Annex A – List of stakeholders per stakeholder category

Type of organisation	Name of the company
Corporation	Reciclalia
Corporation	B-circular
Corporation	Evoenzyme
MSME	Fych technologies
	Novamont
	NatureWorks
	CJ Biomaterials
	Avantium
	Corbion
	A4F – Algae For Future
	AB Inbev
	AEP Polymers
	HaPPE
	Down2Earth Materials
	BioPlastech
	Sulapac
	Sitra
	Measurlabs
Corporation	Reciclalia
	B-circular
	Evoenzyme
MSME	solteco
	Irish Bioeconomy Foundation
	SPRING
	Bio base Europe Pilot Plant
	CLIB Cluster
	Food & Bio Cluster
	Circ Bio Cluster South West
	nova-Institut GmbH
	BioConnect
	Bioeconomy4Change
	Industrial Biotechnology Innovation Centre
	BioEast Hub CZ
	BioInnovate Africa
	Fych technologies
MSME	Solteco
Corporation	Sitra
	Ellen MacArthur Foundation
	SUN Institute Environment & Sustainability
Corporation	Bio - based Industries Consortium
Corporation	The World Business Council for Sustainable Development (WBCSD)
Corporation	European Circular Bioeconomy Fund, ECBF Management GmbH

Corporation	Plant Based Products Council
MSME	Measurlabs
	State of Green
	TP Organics - European Technology Platform for Research & Innovation into Organics and Agroecology
Start-up	Water4Life
Corporation	PRISM CONSTRUCTION CO LTD
Corporation	East Africa Go-Green Company
Corporation	East Africa Go-Green Company
Start-up	ENVIRONMENTAL CONSERVATION AGENCY-SOUTH SUDAN
MSME	Briquettes du Kivu
MSME	Afrique Solidarité
MSME	Resilience For Developpement Group(RDG)
MSME	AGRUNI
MSME	WAKONGO 1ER KILOMETRE SANTE
MSME	Test Company1
MSME	Afrobio Agency
MSME	Action et Soutien au Développement Integral
MSME	Ets Plastycor
MSME	KEA SARL
MSME	RAID SAS (Réseau agricole des investisseurs pour le développement)
MSME	Kivu Fish corporation
MSME	Agroflotte
Start-up	AGRISOLs (Agricultural, Recycling and Industrial Solutions)
MSME	Hope in the Nature Sarl
MSME	Resilience For Development Group(RDG)
MSME	SMAM (Service Médical pour l'Accompagnement des Malades)
MSME	EXPERTS CONGOLAIS DES MINES ET INDUSTRIES (ECOMIND Engeneering SARL))
MSME	Femme et Environnement Sain pour le Développement Durable (FESDD)
MSME	CCC LES BONS SAMARITAINS
Start-up	BIO-ENERGIE Sarl
Start-up	SAV (Sauvons notre AVenir)
Start-up	MarZ Compost SARL
MSME	Kivu Ecosolution sarl
Start-up	SALUBRITÉ SERVICES
MSME	FULL DÉVELOPPEMENT AGENCY GROUP
MSME	SOCIÉTÉ CONGO PUR SARL
MSME	Phenix international standard corporation
Start-up	BIOSELIA ENVIRONNEMENT
Corporation	PHARMAKINA
Corporation	Brasseries, Limonaderies, Malteries(BRALIMA)
MSME	BIOGRADA
Corporation	INGELIA
MSME	BIOMASA PENINSULAR

MSME	Fiberight
Corporation	PAQUES BIOMATERIALS
MSME	BIOTREND
MSME	HELIAN BIOPOLYMERS
MSME	BOREAL BIOPRODUCTS
MSME	CELIGNIS
MSME	Cellicon
Corporation	FIBENOL
MSME	CHIMAR
MSME	NATAC BIOTECH S.L
Corporation	NESTE
Start-up	PLANTICS

Type of humanitarian organisation	NGO level	Name of the organisation
Development NGO		Africa Harvest Biotech Foundation International
		Bioeconomy Coalition of Africa
		World BioEconomy Forum
Working group		European Bioeconomy Alliance
Cluster	International	WASH Cluster
Cluster	International	WASH Cluster
Cluster	International	WASH Cluster
Cluster	International	Health Cluster/ WHO
Cluster	International	Health Cluster-Healthlink South Sudan
Cluster	Local	WASH subnational cluster-CES
UN organization	International	UNICEF
UN organization	Local	UNICEF
Dev & hum NGO	Local	TERM
Dev & hum NGO	Local	TERM
Dev & hum NGO	International	Save The Children
Dev & hum NGO	Local	Women For Change
Dev & hum NGO	Local	Mobile Trust Aid
Dev & hum NGO	Local	CEPO
Dev & hum NGO	Local	Institute of Social Policy and Research
Dev & hum NGO	International	NRC
Dev & hum NGO	Local	Coalition for Humanity (CH)
Dev & hum NGO	International	WHO
Dev & hum NGO	International	WHO
UN organization	International	IOM-core pipeline
Dev & hum NGO	International	Acted - CCCM team

Dev & hum NGO	International	NRC - CCCM team
Dev & hum NGO	International	MSF
Donor	International	GIZ
Donor	International	ECHO TA
Donor	International	USAID
UN organization	International	WFP - core pipeline
UN organization	International	FAO
	International	Camp Juba Management/WASH Camp Partner
Cluster	International	Global WASH Cluster
Cluster	International	Global Logs Cluster
Dev & hum NGO	International	ICRC - global level
Dev & hum NGO	International	ACTED - global
Dev & hum NGO	International	South Sudan Red Cross
Dev & hum NGO	International	Danish Red Cross
Dev & hum NGO	International	IFRC - South Sudan
Humanitarian NGO	International	Norwegian Church Aid
Humanitarian NGO	International	Tearfund
Development NGO	Local	Caritas
Humanitarian NGO	International	MSF Hollande
Dev & hum NGO	International	Institut Internation d'Agriculture Tropical (IITA)
Cluster	International	Nutrition Cluster
Cluster	International	WASH Cluster
Cluster	International	Food Security Cluster
Cluster	International	Protection Cluster
Cluster	International	PSEA Working Group
Cluster	International	Cash Working Group
Cluster	International	COPH (OCHA Coordination)
Cluster	International	Shelter and AME Cluster
Cluster	International	Shelter Cluster
Cluster	International	AME Cluster
Cluster	International	AME Cluster - Hub de Bukavu
Cluster	International	Camp Management Cluster
Cluster	International	Logistics Cluster
Cluster	International	Health Cluster
Development NGO	Local	RCID (Réponse aux catastrophes et aux initiatives de développement)
Dev & hum NGO	Local	Action des Volontaires Unies pour le Développement et la Santé (AVUDS)
Development NGO	Local	Wakongo
Development NGO	Local	Kesho Congo
Development NGO	Local	Ek'Abana

Development NGO	Local	Plasty Cor RDC - Kabare
Development NGO	Local	UNCDF
Development NGO	Local	GASD
Development NGO	Local	BEGE-RDC (Bureau d'Etude Geologique et Environnementale)
Red Cross	International	IFRC
Coordination body	International	Inter-agency Standing Committee (IASC)
Coordination body	International	United Nations Office for the Coordination of Humanitarian Affairs (OCHA)
Coordination body	International	Alliance 2015 logistics group
Dev & hum NGO	International	Concern Worldwide
Dev & hum NGO	International	Welthungerhilfe
Dev & hum NGO	International	CESVI
Dev & hum NGO	International	Ayuda en Action
Dev & hum NGO	International	Helvetas
Humanitarian NGO	International	MSF France
Donors	International	ECHO
Dev & hum NGO	International	ACF
Coordination body	International	Joint Initiative for Sustainable Humanitarian Assistance Packaging Waste Management
Dev & hum NGO	International	OXFAM GB
Dev & hum NGO	International	Mercy Corps
Dev & hum NGO	International	Medecins du Monde
Waste managements projects	International	Waste Management Measuring, Reverse Logistics, Environmentally Sustainable Procurement and Transport, and Circular Economy (WREC)
Waste managements projects	International	WORM
Dev & hum NGO	International	DRC
Dev & hum NGO	International	Save the Children International
UN organization	International	UN Environment Program (UNEP)
UN organization	International	World Food Program (WFP)
Development NGO	International	AGRITERRA
UN organization		International Organization for Migration (IOM)
Development NGO	Local	Société Civile Environnementale
Development NGO	Local	Réseau des Organisations des Jeunes engagés dans le changement climatique,

		conservation de la biodiversité, zones humides et forêts en RDC.
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Type /level of public institution	Name of the institution
EU-level	Circular Bio-Based Europe Joint Undertaking (CBE JU)
EU-level	Biobased Industries Consortium (BIC)
EU-level	European Bioplastic
International	Ellen MacArthur Foundation
	SUN Institute Environment & Sustainability
	The World Business Council for Sustainable Development (WBCSD)
	European Circular Bioeconomy Fund
	Plant Based Products Council
	State of Green
	TP Organics - European Technology Platform for Research & Innovation into Organics and Agroecology
EU-level	European Institute of Innovation and Technology
	Sustainable Markets Initiative
	European Forest Institute
	European Commission - European Innovation Council and SMEs Executive Agency
	European Commission - Directorate General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW)
	Entrepreneurship and SMEs (GROW)
	Circular Bio - based Europe Joint Undertaking
	Biodiversa - European Biodiversity Partnership
	European Commission - Directorate General for Research & Innovation - Planet, People and Science for Policy
	European Environment Agency
	European Commission - Directorate General for Research & Innovation - Prosperity
	European Commission - Directorate General Enterprise & Industry and Directorate General Energy
	EU CAP Network
Ministry	Ministry of Environment and Forestry
Ministry	Ministry of Environment and Forestry
Ministry	Ministry of Water Resources and Irrigation
Ministry	Ministry of Water Resources and Irrigation
Ministry	Ministry of Health
Ministry	Ministry of Health
Ministry	Ministry of Agriculture

Ministry	Ministry of Agriculture
Provincial/Regional	CES State Secretariate
Municipality	Juba City Council
Municipality	Juba City Council
Local leaders' group	JCC-Sanitation staff
Municipality	Yei County
Municipality	Yei County
	Embassy of the Kingdom of Netherlands, South Sudan-Juba
	World Bank-South Sudan
	JICA
EU-level	ECHO
EU-level	ECHO
EU-level	ECHO
	RRC
Provincial/Regional	Bureau Hygiène et Salubrité Publique, Division Provinciale de la Santé
Provincial/Regional	Coordination provinciale de l'Environnement et Développement Durable du Sud-Kivu
Provincial/Regional	Coordination Provinciale Wash
Municipality	Mairie de Bukavu
Provincial/Regional	Comité Provincial d'Action , de l'Eau, de l'hygiène et de l'Assainissement ; CPAEHA en sigle
Provincial/Regional	Office congolais de contrôle (Occ)
Local leaders' group	Agence congolaise pour la Gestion des déchets (ACG Déchets)
Provincial/Regional	INSPECTION PROVINCIALE DE L'AGRICULTURE DU SUD-KIVU
Ministry	Ministère d'environnement et développement durable

Type of academia	Name of the institution
Research institution	Circular Bioeconomy (CircBio) research group
Research institution	BiOrbic research centre
Research institution	Amber Research Centre
Research institution	Grain4Lab
Research institution	Fraunhofer Gesellschaft - Strategic Research Field BIOECONOMY
Research institution	Radboud Institute for Biological and Environmental Sciences, Department of Environmental Science
Researcher/research institution	Joint Research Centre (JRC), Forests and Bioeconomy Unit
Researcher/research institution	Foundation Centro Tecnológico de Componentes (CTC)

University	Institute of Sustainable Consumption
Researcher/research institution	Institute of Sustainable Processes and Technologies
Researcher/research institution	Stockholm Resilience Centre
Researcher/research institution	Łukasiewicz - Center for Bioeconomy & Ecoinnovation
University	University of Juba, UniPod
University	Yei Teachers Training College
University	Université Officielle de Bukavu
University	Université Officielle de Bukavu
University	Université de Goma
University	Université Officielle de Bukavu
University	Université Evangélique en Afrique (UEA)/FabLab EcoDéchets UEA
University	Université du Cinquantenaire, Lwiro
University	Université de Lubumbashi, Faculté Polytechnique
Researcher/research institution	INternational Institute of Tropical Agriculture (IITA)
Researcher/research institution	African Agriculture Leadership Institute (AALI)
University	Institut supérieur de développement rural de Bukavu ISDR-Bukavu
Researcher/research institution	Laboratoire d'Analyses Environnementales/Polytechnique/UNILU
Researcher/research institution	IVL
Researcher/research institution	LIST
University	University of Hohenheim
Researcher/research institution	RISE PROCESSUM
Researcher/research institution	BIO BASED EUROPE PILOT PLANT
Researcher/research institution	CENTRO TECNOLÓGIC MIRANDA DEL EBRO
Researcher/research institution	VITO
Researcher/research institution	VTT