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MAINSTREAM BIO

MAINSTREAMING SMALL-SCALE BIO-BASED SOLUTIONS ACROSS RURAL EUROPE

D4.1

Report on evaluation of MIP performance - first round

Q-PLAN International

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1.0	30/8/2024	Final submission to EC	Q-PLAN

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ABBREVIATIONS

AB	Advisory Board
CAP	Common Agricultural Policy

D&C	Dissemination and Communication
DG AGRI	Directorate-General for Agriculture and Rural Development
EC	European Commission
EU	European Union
FAIR	Findable, Accessible, Interoperable, and Reusable
FAO	Food and Agriculture Organisation of the United Nations
GA	Grant Agreement
GDPR	General Data Protection Regulation
JRC	Joint Research Centre
M&E	Monitoring and Evaluation
MAP	Multi-actor Partnership
MIP	Multi-Actor Innovation Platform

Executive Summary

The present document is part of the work under MainstreamBIO project, particularly Task 4.1, “Monitoring and evaluation of regional multi-actor innovation platforms”. Overall, the purpose is to define a monitoring and evaluation framework which is used to closely monitor, evaluate, and assess key project activities, performance, outcomes, and impacts. In addition, the findings and results from the first Innovation Support round are presented, while recommendations for improvement for the second round are highlighted.

Our work began with a review of key concepts and previous Monitoring and Evaluation (M&E) experience in similar settings. Then, the overall methodology of the MainstreamBIO M&E framework is analytically described. Following that, Q-PLAN, with the support of the consortium partners, engaged in the design of a full-fledged M&E framework with evaluation objectives, the methodology to be followed, the indicators to be monitored, the tools (questionnaires) for data collection and the periodicity of data collection.

The MainstreamBIO M&E framework includes a set of 117 indicators and 13 data collection methods to measure towards four main objectives: i) O1: enhance cooperation of key players and knowledge holders for bio-based innovations in rural areas, ii) O2: support innovators to accelerate the development of marketable products and services and improve market penetration of bio-based solutions, iii) O3: deploy existing knowledge to increase number of implemented bio-based solutions in rural areas, and iv) O4: build awareness and knowledge on bioeconomy. Moreover, the assessment and evaluation techniques of the MainstreamBIO M&E framework are described, together with a detailed timeline of the project activities which will be used for the data collection to fuel our framework.

In terms of results, various aspects of the performance of the MIPs, and the feedback received for the improvement of our innovation support services and digital toolkit were analysed. Concerning O1, the project managed to engage significant number of key stakeholders to the MIPs, achieving positive results in the gender balance and the engagement of young farmers to its activities.

With respect to O2, the stakeholders reported an overall satisfactory experience with the MainstreamBIO Toolkit, while they also provided limited suggestions for further improvement in the various components. During the second round, additional efforts will be needed to engage more users and increase their commitment to the Toolkit.

Regarding O3, MainstreamBIO partners deployed existing knowledge to successfully increase the number of implemented bio-based solutions in the targeted focal regions, thus assisting the interested stakeholders to further apply small-scale biobased solutions in their businesses.

Last but not least, with respect to O4, through targeted awareness raising and educational campaigns across the focal regions, we managed to increase the understanding of the bioeconomy concept across the audience of the events. The participants of our activities reported that they are likely to seek more information about bioeconomy in the future, while a significant number of participants stated that they will try to expand their knowledge for the bioeconomy after their participation to our campaigns.

Finally, the present report includes specific recommendations for improvement during the second innovation support round to facilitate the data collection process and the subsequent monitoring and evaluation of the performance of the MIPs, the Innovation support services and the digital Toolkit.

1. Introduction

MainstreamBIO aims at contributing towards bringing **small-scale bio-based solutions** into the mainstream across rural Europe. To achieve this, the project is set to greatly enhance cooperation between key bioeconomy stakeholders, resulting in sustainable business models pathways for bio-based innovations in rural areas. Along these lines, the project follows an integrated methodology to establish regional **multi-actor structures** for demand-driven innovation, and deliver a combination of communication materials, training programmes, events, decision support system and other practical digital tools packed in the **MainstreamBIO Toolkit**.

The document at hand is the deliverable D4.1 “Report on evaluation of MIP performance - first round”, elaborated in the context of Task 4.1 “Monitoring and evaluation of regional multi-actor innovation platforms”. The main objective is to design and present the framework that will be used to monitor, evaluate and assess the performance and impact of MainstreamBIO Multi-Actor Innovation Platforms (MIPs) towards the iterative improvement of MainstreamBIO’s innovation support services and digital toolkit and present the findings and results from the first innovation support round.

The remaining document consists of the following sections:

- **Section 2** explains the key concepts of monitoring and evaluation (M&E) framework and provides an overview of previous relevant exercises.
- **Section 3** articulates the overall approach followed to design and fine-tune the MainstreamBIO M&E framework, including the virtual validation workshop with the MainstreamBIO Advisory Board (AB) members.
- **Section 4** elaborates on the selected monitoring methodology, including data collection methods, tools, indicators, responsibilities, data management provisions and timeline.
- **Section 5** elaborates on the selected evaluation and assessment methodology, including assessment techniques, responsibilities, key findings and timeline.
- **Section 6** presents the results of the evaluation and impact assessment from the first innovation support round.
- **Section 7** provides specific recommendations for improving the data collection process for the second innovation support round.
- **Section 8** provides some concluding remarks and guides the project’s next steps.

The **Annexes** include the data collection tools used (questionnaires and forms) to collect the necessary data in the first round.

2. Understanding Basic Concepts

Sustainable development demands simultaneous changes at many levels of society and in multiple domains: ecological, economic, political and scientific. System innovation projects, therefore, benefit from a type of monitoring that encourages the 'reflexivity' of the project itself and its ability to affect and interact with the environment within which it operates[1].

As a starting point, the M&E framework of MainstreamBIO is aligned with the project's 'intervention logic', considering the project's objectives, inputs, activities, and output.[2]. Appropriate M&E processes can add great value to the project, contributing to efficient project management and appropriate effects assessment. To this end, the framework must not simply be a backward-looking evaluation tool, but a living part of the project that assists a workflow focused on project objectives Crucially, evaluation is only justifiable if it positively affects a project's beneficiaries and serves a broader purpose, such as improving planning and efficiency or knowledge production.

2.1 Key definitions

2.1.1 *Monitoring and Evaluation*

Monitoring and Evaluation are two management tools that are closely related, interactive and mutually supportive.

Monitoring is a continuous process of collecting and analysing information to compare how well a project or activity is implemented against expected results. Monitoring aims at providing regular feedback and early indications of progress or lack thereof in achieving intended results. It generally involves collecting and analysing data on implementation processes, strategies and results, and recommending corrective measures[3].

Evaluation is the systematic and objective assessment of an ongoing or completed project or activity, its design, implementation and results. Evaluation determines the relevance and fulfilment of objectives, efficiency, effectiveness, impact and sustainability. An evaluation should provide information that is credible and useful, enabling incorporation of lessons learned into the decision-making process of both recipients and donors[3].

2.1.2 *Outputs, Results, and Impact*

A typical misunderstanding regarding M&E frameworks is the confusion between outputs, results and impacts. Firstly, **outputs** refer to the direct products of a project. They are tangible and come about due to specific project activities. The intention is that outputs will contribute to **results**, which refer to a specific dimension of improvement for project beneficiaries, or -in other words- what exactly do we want to change through the project interventions. Finally, **impacts** are the causal link between

[1] Van Mierlo B.C. et al. (2010). Reflexive monitoring in action. A guide for monitoring system innovation projects. Communication and Innovation Studies.

[2] Wehn, U., Gharesifard, M. and Ceccaroni, L. (2020). D2.3: Impact-assessment methods adapted to CS. Deliverable report of project H2020 MICS.

[3] International Federation of Red Cross and Red Crescent Societies: Monitoring and Evaluation in a nutshell

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project outputs and the obtained results. Impacts reflect whether the outputs arising from project activities have caused the intended (or unintended) consequences[4].

2.1.3 *Indicators*

Indicators can either be concerned with (i) results, in which case they are variables that inform us of specific, measurable features of said results; or (ii) impacts whereby they signal a causal link between activities and observed changes. They both allow us to understand specific issues and facilitate a judgement on how well project objectives have been met. It is helpful to set targets for these indicators during M&E framework design and make them measurable by determining their baseline values[4].

2.1.4 *Baseline Data and targets*

Baseline Data is an initial set of data collected before the implementation of an intervention or project. The Baseline Data serves as a reference point against which progress can be measured and evaluated throughout the project lifecycle. It also provides a clear understanding of the current situation, identifies the gaps, and provides valuable insights that guide the development of appropriate interventions and the establishment of indicators to track progress towards achieving desired outcomes. It is a critical component of M&E planning, serving as a starting point for monitoring and evaluating the impact of an intervention or project[5].

Targets are specific, measurable objectives set for what a project or activity aims to achieve within a certain timeframe. They provide a clear goal and benchmark for evaluating progress and success. Targets are set for all types of indicators in the logical flow from process to outputs, results and impact. Obviously, the targets set for impact and result indicators should be based on the targets for the output and process indicators, as they strongly depend on and result from them[6].

2.1.5 *Reflexive Monitoring Approach*

Reflexive monitoring is a monitoring methodology that focuses on action, by learning to tackle the challenges that are encountered in system innovation projects, by developing solutions jointly, allowing the project to contribute to the structural changes that are needed for sustainable development. The monitoring activity is not a separate activity itself but is instead more an integral part of the process. Additionally, the insights gained from the monitoring are tried and experimented within the projects' new activities. This allows participants to keep their ambitions set high (in terms of system innovation) and contribute to coherent, structural change without the route and destination necessarily being mapped out precisely beforehand[1].

With a **Reflexive Monitoring Approach**[1], a suite of KPIs has been defined to monitor and measure the performance of our MIPs against the parameters most pertinent to the inputs, processes and outputs of the measures they deploy (innovation support services, awareness raising and education campaigns, digital toolkit). Indicative input-related themes to be measured include the activities relevant in deploying these measures (e.g. number of services delivered, campaigns run). Output-

[4] International Labour Organisation: 7. PROJECT EVALUATION

[5] Baseline Study in Monitoring and Evaluation: Definition, Importance, and Steps Involved

[6] https://www.emro.who.int/child-health/research-and-evaluation/indicators/Targets-and-monitoring.html

focused themes will address overall dimensions such as their attractiveness (e.g. participation rates, service requests).

2.2 Previous relevant works

Building on the theoretical specificities of M&E in bioeconomy and multi-actor platforms, it is useful to highlight existing research and frameworks which make a practical attempt to monitor and evaluate these aspects in Europe. For instance, the Directorate-General for Agriculture and Rural Development (DG AGRI) developed a technical handbook on the Monitoring and Evaluation Framework of the Common Agricultural Policy (CAP) 2014 – 2020. This document is an updated version that covers the whole CAP, highlighting the general objectives and purposes of M&E and its importance to the European Union and DG AGRI, as well as enclosing information about the intervention logic, relative indicators, actors and their responsibilities in M&E.

A further work in this sphere is the Food and Agriculture Organisation of the United Nations' (FAO) report on Indicators to Monitor and Evaluate the Sustainability of Bioeconomy. In this approach, the bioeconomy is considered as an economic model at local, national, regional or global scale. The focus for the M&E framework is the contribution of the bioeconomy to economic development, and its impacts on nature and society. One of the guidelines' key outputs is the identification of indicators to monitor and evaluate the performance of sustainable bioeconomy development.

Additionally, Nicolas Robert et al. (2020) present in their paper the approach taken by the European Commission's (EC) Joint Research Centre (JRC) to develop a monitoring system to track economic, environmental and social progress towards a sustainable bioeconomy[7]. The developed monitoring system is built on existing bioeconomy-related European monitoring frameworks and aligned with national and international initiatives for monitoring bioeconomy. The framework also provides suitable indicators to monitor the impacts of bioeconomy from different perspectives (e.g., sustainability, value chain, etc.) and its flexibility enables future evolvement.

Furthermore, Barbara van Mierlo et al. (2010) developed the Reflexive Monitoring in Action book, which is a guide for monitoring system innovation projects[8]. This guide presents the concept of Reflexive Monitoring along with tools for its implementation. It also offers practical guidance for putting this monitoring framework into practice and aiding selection and use of the appropriate tools.

Vincent Egenolf and Stefan Bringezu (2019) introduced a comprehensive framework for the evaluation of the sustainability of the bioeconomy[9]. Their framework focuses on the intersection among environmental, economic and social sustainability and conceptualizes a suitable set of indicators that can be used for bioeconomy monitoring.

The SAT-BEE (EC, 7th Research Framework Programme GA. 311880) project follows a Drivers-Response framework for monitoring the bioeconomy and presents a list of key indicators for different drivers and impacts of bioeconomy. The SHERPA (EC, H2020 GA. 862448) project monitors and

[7] Nicolas et al. (2020). Development of a bioeconomy monitoring framework for the European Union: An integrative and collaborative approach

[8] Barbara van Mierlo et al. (2010). Reflexive Monitoring in Action. A guide for monitoring system innovation projects

[9] Vincent Egenolf and Stefan Bringezu (2019). Conceptualization of an Indicator System for Assessing the Sustainability of the Bioeconomy

evaluates the establishment and running processes of 40 multi-actor platforms in order to effectively enrich their activities. The objectives of its M&E framework are to understand how: (i) a multi-actor platform runs, (ii) the existing research can improve the platforms' activities, (iii) the key findings could feed EU and national policies as well as contribute to recommendations, and (iv) to inspire the multi-actor platforms to continue their operation after the project's completion.

Lastly, the UNISECO (EC, H2020 GA. 773901) is a project performing M&E of multi-actor platforms. It offers a step-by-step guide to setting up an M&E framework, selecting appropriate evaluation criteria and data collection methods, and applying the framework. The framework sets the objectives of the processes, specifies the evaluation questions, selects the assessment criteria, and proposes a method for the assessment.

3. Methodology

The current section presents the overall approach, and the steps followed to design and fine-tune the MainstreamBIO M&E framework.

3.1 Overall approach

Experience from previous projects and the GA provisions encouraged a multiple-step approach with the involvement of MainstreamBIO partners, external stakeholders and AB experts. In particular, the design of MainstreamBIO M&E framework was based on the six steps below.

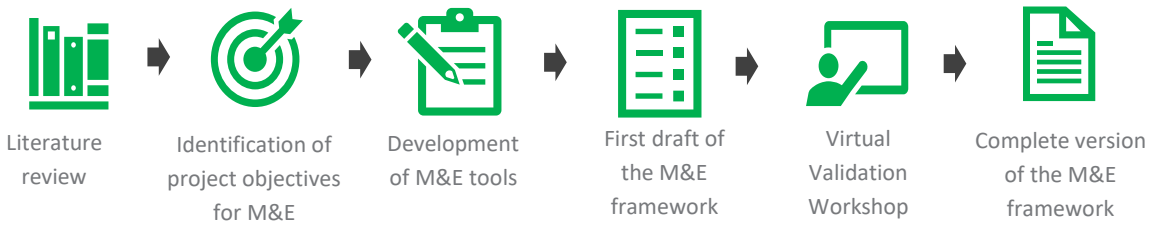


Figure 1: MainstreamBIO M&E Framework Design Approach

- **Step 1 – Literature review**: Our work began with a literature review to deepen our understanding of monitoring and evaluating impacts. We also reviewed previously developed M&E frameworks to gain insights from their design and experience, such as success and prohibiting factors of a solid M&E implementation (see Section 2.2).
- **Step 2 – Identification of project objectives for M&E**: After considering the GA provisions, we elaborated on a list of the project objectives that are pertinent to M&E. The MainstreamBIO M&E will primarily focus on measuring progress towards those key objectives (see Section 3.2).
- **Step 3 – Development of M&E tools**: Based on the identified project objectives, we developed several tools to collect data through the project's activities from the engaged stakeholders (see Section 4.1).
- **Step 4 – First draft of the M&E framework**: The methods to monitor the key project activities and a pool of indicators were defined. The respective tools, including questionnaires, template reports and databases, were also included. Finally, the key steps and techniques to assess and evaluate the outcomes obtained were proposed.
- **Step 5 – Virtual Validation Workshop**: The draft MainstreamBIO M&E framework along with the results collected during the project's 1st innovation round (M24) were presented to the AB members. Their feedback, collected through a dedicated Virtual Validation Workshop organized by Q-PLAN on the 27th of August 2024, was valuable for validating our approach and improving our innovation support services and digital toolkit.
- **Step 6 – Complete version of the M&E framework**: After incorporating comments and feedback from the Virtual Validation Workshop, the final version of the MainstreamBIO M&E framework was prepared (see Sections 4 and 0).

In summary, MainstreamBIO Monitoring framework adopts a multilayer approach, including both quantitative and qualitative measures and incorporating feedback from various stakeholders (internal and external). The multilayer approach is effective because quantitative study can provide an objective and quantifiable apprehension of the project achievements, while the qualitative method allows us to contextualise and capture the importance of an intervention. This allows us to eventually obtain a holistic view of the performance of the MIPs, the way stakeholders perceive them, and the

potential impacts project activities have had. Within the following pages, all selected methods are further described.

The list of monitoring methods and their specifications (see Section 4.1) is the outcome of close collaboration of Q-PLAN with all MainstreamBIO partners. The aim was to find the sweet spot between an M&E framework that is easy to be deployed, but at the same time complies with all the provisions of the GA, effectively assesses the performance and impacts of MainstreamBIO activities, and gathers information that serves as an alert for improvements. As confirmed within our consortium, all involved partners are well aware of the notions to be monitored and the type, extent and regularity of data to be collected. However, ad-hoc improvements to the design and content of the M&E framework are possible throughout the project and will be documented in the respective deliverable (D4.6).

3.2 Project objectives

After considering the relevant GA provisions, we elaborated on a list with specific project objectives (O) pertinent to M&E. The MainstreamBIO M&E will primarily focus on measuring progress towards those key objectives.

Table 1: Key project objectives

O1. Enhance cooperation of key players and knowledge holders for bio-based innovations in rural areas

a) Stakeholders' engagement through MIPs
b) Cooperation in innovative business models through MAPs
c) Development of connections for targeted stakeholders

O2. Support innovators to accelerate the development of marketable products and services and improve market penetration of bio-based solutions

a) Adoption of small-scale bio-based solutions
b) Delivery and iterative improvement of MainstreamBIO innovation services
c) Delivery and iterative improvement of MainstreamBIO toolkit
d) Support of scale-up and transferability

O3. Deploy existing knowledge to increase number of implemented bio-based solutions in rural areas

O4. Build awareness and knowledge on bioeconomy

Each objective is divided into parts to monitor specific areas in which we want to generate results. These sub-objectives are sometimes broken down even further into smaller impact domains. Below a short description of what each objective is referring to is presented.

O1. Enhance cooperation of key players and knowledge holders for bio-based innovations in rural areas

This objective relates to measuring how the MainstreamBIO MIPs have contributed to engaging rural stakeholders in bio-based innovations, particularly small-scale bio-based solutions, and enhancing cooperation among them across rural Europe.

- **O1a. Stakeholders' engagement through MIPs**

This category has been structured along measuring and evaluating progress towards the engagement of stakeholders in MIPs throughout MainstreamBIO lifecycle. Particularly, it measures the number of members and synthesis per MIP, and their perceptions about MIPs' activities and operation.

- **O1b. Cooperation in innovative business models through Multi-actor Partnerships (MAPs)**
  In this category, we are interested in evaluating stakeholders' interest in cooperating with each other, applying for and receiving our innovation services, particularly those that are MAP cases, and assessing the benefits they received through our services in terms of collaboration, satisfaction, and income.
- **O1c. Development of connections for targeted stakeholders**
  Here we pursue to measure the participation of stakeholders in MainstreamBIO workshops and events and the impact on expanding their network with key rural partners and participating in small-scale bioeconomy projects.

O2. Support innovators to accelerate the development of marketable products and services and improve market penetration of bio-based solutions

This objective focuses on measuring the impact of the business and technical support of MainstreamBIO innovation services in the development of bio-based products and services and the increase in their sales.

- **O2a. Adoption of small-scale bio-based solutions**
  This category measures the uptake of small-scale bio-based solutions as well as the acceleration of bio-based products or services. It also evaluates its impact in the market in terms of sales, income diversification and job creation.
- **O2b. Delivery and iterative improvement of MainstreamBIO innovation services**
  Through this category, we measure and assess the business and technical support services that MainstreamBIO provides as well as the supported innovators to fine-tune our service portfolio.
- **O2c. Delivery and iterative improvement of MainstreamBIO toolkit**
  Here we evaluate stakeholders' interest in MainstreamBIO toolkit and their experience from using it, aiming to detect areas or functions for improvement. Additionally, we keep track of several analytics that could facilitate toolkit's fine-tuning.
- **O2d. Support of scale-up and transferability**
  This category measures the participation in MainstreamBIO regional scale-up and mutual learning workshops and assesses their impact on participants' activities. Furthermore, it focuses on monitoring the relevance of MainstreamBIO policy insights to EU policy objectives, challenges and decision making.

O3. Deploy existing knowledge to increase number of implemented bio-based solutions in rural areas

This objective focuses on monitoring the existing knowledge on technology solutions, social innovations, innovative business models, nutrient recycling practices and digital tools, as well as knowledge emerging from synergies with clustered projects, with the aim to foster the small-scale bio-based solutions uptake.

O4. Build awareness and knowledge on bioeconomy

The last objective evaluates the impact of MainstreamBIO awareness raising activities on stakeholders who are interested in bioeconomy, as well as their level of knowledge in this domain.

Additionally, we measure the overall outreach and dissemination of MainstreamBIO to external stakeholders and events.

3.3 Virtual Validation Workshop of the M&E framework with the AB members

The MainstreamBIO M&E framework was also validated through a dedicated Virtual Validation Workshop with the AB members. Additionally, several MainstreamBIO partners participated in the workshop to express their opinions during the discussion. In particular, the workshop aimed to validate MainstreamBIO's M&E framework and the findings of the 1st innovation support round by examining its methodology on monitoring, assessment, and evaluation, reflecting on its aspects and providing suggestions.

Q-PLAN organised the workshop which took place on the 27 of August 2024, digitally on MS Teams and lasted for 1,5 hours. During the workshop, the 4 participating AB members were asked to provide their feedback and make suggestions for improving the M&E framework. The workshop's agenda included the presentation of MainstreamBIO's M&E framework along with results from the 1st Innovation Round, an open discussion on the M&E framework and a co-validation exercise on improving the framework. During the open discussion, the AB members were encouraged to reflect on the information they received during the presentation and discuss the matters that made an impression on them, ask questions, and share their feedback.

During the co-validation exercise, the AB members, with the guidance of moderators, reflected on the following questions:

- Which aspects of the project and the MIPs should be monitored more closely?
- What challenges, bottlenecks, and other prohibiting factors may the MIPs face when collecting the required data, and how could they overcome them?
- What might the results show about MIPs, MainstreamBIO Innovation Services and digital toolkit?
- How could we make the service provision more useful to the stakeholders?
- How could we engage the stakeholders (event participants) more efficiently?

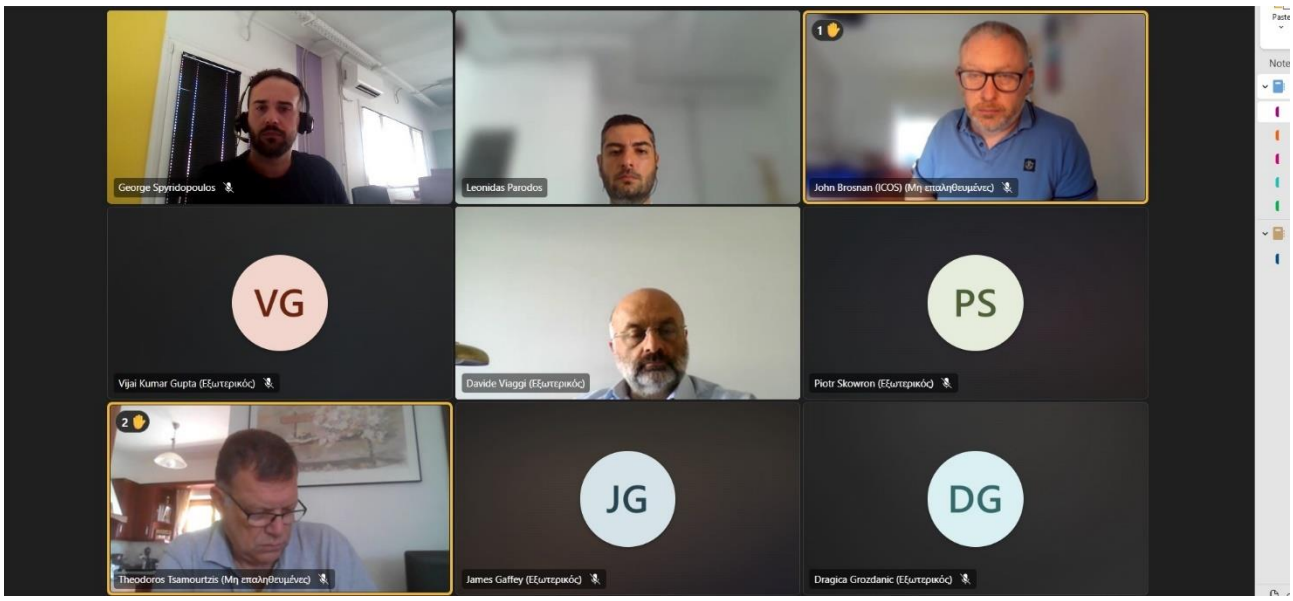


Figure 2: The 1st Virtual Validation Workshop with the AB members, 27/08/2024

The two AB members who were unable to participate in the 1st Virtual Validation Workshop to discuss about the M&E framework, were directly contacted to provide their feedback and propose recommendations for improvement to the MainstreamBIO M&E framework along with the existing results from 1st innovation support round. One more AB member sent feedback via email.

Several key observations and insights came to light through the discussion and the email exchange, providing valuable insights into the M&E framework and the results from the 1st Innovation Support round. The general feedback received from the AB members is that the M&E framework is very precise and complete. However, one striking observation was that the M&E framework was rather complicated, having too many indicators for a project, suggesting simplifying things. A nice starting point could be to avoid potential overlapping among the indicators, which will be considered for the 2nd round.

Our discussion also focused on the importance of the monitoring and evaluation of the cooperation activities, considering the small-scale bio-based solutions that are adopted, especially in terms of the emerging revenues.

In addition, a fruitful suggestion elaborating on the need of broadening and diversifying the participation on the different project activities was to bring to the table the future need for biogenic CO_2 to replace fossils in (chemical) products or to create negative emissions (Carbon Dioxide Removal). This emerging topic, for example in the awareness raising campaigns, might attract younger entrepreneurs.

After the end of the Virtual Validation Workshop, Q-PLAN analysed the feedback gained from the AB members and sent an email describing the main workshop outcomes to all the participants. In sequence, all the AB members' comments were considered and incorporated into the final design of the MainstreamBIO M&E framework (see Section 4 and Section 0). At the end of the 2nd Innovation Support Round, a second Virtual Validation Workshop with the AB members will be organised (M34-M36) to outline the activities performed as well as the results achieved, along with recommendations for improving the Innovation Support Services and Digital toolkit. The results of this activity will be presented in the deliverable D4.6 – Report on evaluation of MIP performance – second round.

4. Monitoring Framework

The MainstreamBIO M&E framework is divided into two main components. The first component is the Monitoring framework, which collects all the necessary data and information, employing specific methods, procedures, tools, and indicators. The second component is the Assessment and Evaluation framework, which assesses the data and information collected to generate useful insights, assess the progress towards the project objectives and evaluate our activities' performance and impact. In the current section, we elaborate mainly on the first component, i.e., the MainstreamBIO Monitoring framework.

4.1 Monitoring Methods and Tools

The MainstreamBIO M&E framework aims to capture not only our performance in terms of meeting the objectives of our support measures, but also their impact employing clear KPIs and inform their improvement to build a solid case for their potential replication.

In this context, the MainstreamBIO Monitoring framework includes several methods to ensure that data and other information are captured at all project levels and from all MIP activities.

In particular, the key methods employed are:

1. Collection of data from MIP leaders through the Stakeholders Matrix.
2. Collection of feedback from MIP Leaders through short reports.
3. Collection of feedback from MIP members through questionnaires.
4. Collection of data from Capacity Building workshops participants through questionnaires (T3.2).
5. Collection of data from Networking events participants through questionnaires (T3.4).
6. Collection of data from Scale-up workshops participants through questionnaires (T4.2).
7. Collection of data from Mutual Learning workshops participants through questionnaires (T4.3).
8. Collection of feedback from Policy Roundtable policy-makers attendants through questionnaires (T4.4).
9. Collection of data from Business Models validation survey participants through questionnaires T5.4).
10. Collection of data from Awareness Raising and Educational events participants through questionnaires (T3.5).
11. Collection of feedback from MAP members receiving Innovation Support Services through questionnaires (T3.3).
12. Collection of data from Project Coordinator.
13. Collection of data from developers through Toolkit analytics (T2.5).

4.1.1 *Method 1: Collection of data from MIP Leaders through the Stakeholders Matrix*

Method 1 Summary	
Purpose	The engagement of stakeholders in the MainstreamBIO MIPs is an ongoing process throughout the project's lifecycle. To this end, there

	is continuous monitoring of each MIP's members along with their demographics, as well as the activities they engage in.
Target Group(s)	MIP members
Data collection (Tools)	Stakeholders Matrix (Annex I - Stakeholder Matrix)
Related Task	Task 4.1 (tool developed in Task 1.1)
Timing & Frequency	Continuous update
Data collector / processor	MIP leaders collect the data and fill in the respective Stakeholders Matrix. T4.1 leader (Q-PLAN) collects the data from each MIP.
Data controller / owner	Task 4.1 leader (Q-PLAN)
Procedure	Throughout the project, each MIP leader is responsible for collecting their MIP's data. The MIP leader invites interested stakeholders to join their MIP. After receiving a positive response, the MIP leader provides the interested ones with 3 documents: (i) Terms of Reference, (ii) Non-Disclosure Agreement (NDA), and (iii) Informed Consent Form. The interested stakeholders must sign the NDA and Informed Consent Form and send the signed documents to the MIP leader to officially join the MIP. After receiving the documents, the MIP leader fill in the necessary information in the Stakeholders Matrix of the respective MIP. Throughout the project, the MIP leader checks the MainstreamBIO activities in which each MIP member participated. Also, the MIP leader updates the information at the request of a MIP member, adds new members, and deletes those who want to end their commitment.
Data utilisation (Steps forward)	• Each MIP leader collects the data and provides it to Q-PLAN to update the Aggregated Stakeholders Matrix. • All partners can use it for reporting or mutual learning purposes. At the same time, T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Interested stakeholders must sign an NDA and an Informed Consent Form to join the MIP (GDPR). • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M1M (Method 1 – Matrix)

4.1.2 *Method 2: Collection of feedback from MIP Leaders through short reports*

Method 2 Summary	
Purpose	This method aims to regularly monitor the operation of each MIP throughout the project, evaluating its performance and detecting potential problems or areas for improvement.
Target Group(s)	MIP leaders
Data collection (Tools)	Report from MIP leaders (**Error! Not a valid result for table.**)
Related Task	Task 4.1
Timing & Frequency	Every 6 months, starting from M18.
Data collector / processor	T4.1 leader (Q-PLAN)
Data controller / owner	Q-PLAN
Procedure	Q-PLAN developed and provided all the MIP leaders with a short report to collect data about their MIP. Each MIP leader is responsible to collect the requested data regarding the operation of their MIP and fill in the short report and send it to Q-PLAN. Q-PLAN can send reminders to MIP leaders or request for further information for the proper monitoring of MIPs' progress.
Data utilisation (Steps forward)	• The data is used in the semester reporting. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Data collected does not include any personal information.
Method Symbol	• M2R (Method 2 - Report)

4.1.3 *Method 3: Collection of feedback from MIP members through questionnaires*

Method 3 Summary	
Purpose	This method aims to collect data from MIP members to monitor their level of satisfaction with the MIP's activities and their involvement in them, as well as to assess the impact on their networks and activities.
Target Group(s)	MIP members

Data collection (Tools)	Enclosed questions in other tools (e.g., Annex III - Questionnaire for Capacity Building workshops participants, Annex VI - Questionnaire for MAP members receiving innovation support services)
Related Task	Task 4.1
Timing & Frequency	Ad hoc
Data collector / processor	MIP leaders
Data controller / owner	Q-PLAN
Procedure	MIP leaders are responsible for collecting this data through different activities and tools and send it to Q-PLAN. In order to avoid multiple questionnaires and overhead for MIP members, the indicators that are linked to this method have been translated into questions and incorporated into other tools.
Data utilisation (Steps forward)	• All partners can use it for mutual learning purposes. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• MIP leaders make the data anonymised before sending it to Q-PLAN • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M3Q (Method 3 – Questionnaire)

4.1.4 *Method 4: Collection of data from Capacity Building workshops participants through questionnaires*

Method 4 Summary	
Purpose	The objective of this method is to collect valuable feedback through the project's Capacity Building workshops, to fine-tune the content and functionalities of MainstreamBIO Digital toolkit.
Target Group(s)	Workshop participants (MIP members, external stakeholders)
Data collection (Tools)	Questionnaire for Capacity Building workshops participants (Annex III - Questionnaire for Capacity Building workshops participants)
Related Task	Task 3.2

Timing & Frequency	After every capacity building workshop (1 per MIP)
Data collector/ processor	MIP leaders
Data controller / owner	Task 3.2 leader (DRAXIS)
Procedure	DRAXIS developed and shared with MIP leaders a questionnaire to capture participants' feedback on the functionalities of MainstreamBIO Digital toolkit. Each MIP leader shares the questionnaire with all the participants after the completion of each capacity building workshop in their MIP. Participants complete the questionnaire and send it back to the respective MIP leader. MIP leaders can send reminders to participants to collect their feedback. Following the collection of the questionnaires, MIP leaders anonymised and sent the data to DRAXIS, which is the leader of the relative task. Finally, DRAXIS aggregates the results and shares them with Q-PLAN for monitoring and evaluation activities.
Data utilisation (Steps forward)	• DRAXIS will use is for improving the Digital toolkit. • All partners can use it for mutual learning purposes. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Participants that are not MIP members sign an Informed Consent Form. • MIP leaders make the data anonymised before sending it to DRAXIS. • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M4Q (Method 4 – Questionnaire)

4.1.5 *Method 5: Collection of data from Networking events participants through questionnaires*

Method 5 Summary	
Purpose	Each MIP of MainstreamBIO organises networking events to facilitate connections between the supported cases and suitable partners (e.g., customers, tech providers) and inspire further actors to get engaged in bioeconomy. Through this method, we try to capture the impact of the networking events in terms of stakeholders' willingness to engage in small-scale bioeconomy projects as well as new collaborations among participants.

Target Group(s)	Event participants (MIP members, MAPs and Use Cases supported, external stakeholders)
Data collection (Tools)	Feedback Questionnaire
Related Task	Task 3.4
Timing & Frequency	After every networking event (2 per MIP)
Data collector/ processor	MIP leaders
Data controller / owner	Task 3.4 leader (FBCD)
Procedure	Q-PLAN develops and shares with MIP leaders a questionnaire to capture participants' feedback. Each MIP leader shares the questionnaire with all the participants after the completion of each networking event in their MIP. Participants must complete the questionnaire and send it back to the respective MIP leader. MIP leaders can send reminders to participants to collect their feedback. Following the collection of the questionnaires, MIP leaders anonymise and send the data to FBCD, which is the leader of the relative task. Finally, FBCD share the results with Q-PLAN for monitoring and evaluation activities.
Data utilisation (Steps forward)	• All partners can use it for mutual learning purposes. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Participants that are not MIP members will sign an Informed Consent Form. • MIP leaders will make the data anonymised before sending it to FBCD. • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M5Q (Method 5 – Questionnaire)

4.1.6 *Method 6: Collection of data from Scale-up workshops participants through questionnaires*

Method 6 Summary	
Purpose	Each MIP organises regional Scale-up workshop to foster discussions among supported cases and stakeholders about their experiences in MainstreamBIO activities and explore the possibilities of scaling-up

	their bio-based solutions. This method helps us to measure and assess the scaling readiness of small-scale bio-based solutions as well as the impact of these workshops in terms of stakeholders' business development.
Target Group(s)	Workshop participants (MIP members, MAPs and Use Cases supported, external stakeholders)
Data collection (Tools)	Questionnaire for Scale-up workshops participants
Related Task	Task 4.2
Timing & Frequency	After every Scale-up workshop (1 per MIP)
Data collector/ processor	MIP leaders
Data controller / owner	Task 4.2 leader (WHITE)
Procedure	Q-PLAN develops and shares with MIP leaders a dedicated to the workshops Questionnaire to capture participants' feedback. Each MIP leader shares the questionnaire with all the participants after the completion of each Scale-up workshop in their MIP. Participants must complete the questionnaire and send it back to the respective MIP leader. MIP leaders can send reminders to participants to collect their feedback. Following the collection of the questionnaires, MIP leaders will anonymise and send the data to WHITE, which is the leader of the relative task. Finally, WHITE shares the results with Q-PLAN for monitoring and evaluation activities.
Data utilisation (Steps forward)	• All partners can use it for mutual learning purposes. • Service providers can use it to fine-tune the service portfolio. • Data can feed the organisation of MainstreamBIO Mutual Learning workshops. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Participants that are not MIP members will sign an Informed Consent Form (to be retrieved from the MainstreamBIO Data Management Plan). • MIP leaders will make the data anonymised before sending it to WHITE. • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M6Q (Method 6 – Questionnaire)

4.1.7 *Method 7: Collection of data from Mutual Learning workshops participants through questionnaires*

Method 7 Summary	
Purpose	Mutual Learning workshops are organised to foster international exchange of knowledge, enabling also external stakeholders to attend demonstrations of small-scale bio-based solutions. Through this method we try to assess the inspiration of field visits for the replication of small-scale bio-based solutions, as well as the impact on participants' networks.
Target Group(s)	Workshop participants (MIP members, MAPs and Use Cases supported, external stakeholders)
Data collection (Tools)	Questionnaire for Mutual Learning workshops participants (not developed yet)
Related Task	Task 4.3
Timing & Frequency	After every Mutual Learning workshop (1 per MIP)
Data collector/ processor	MIP leaders
Data controller / owner	Task 4.3 leader (FBCD)
Procedure	FBCD develops in collaboration with each MIP the learning topics of each Mutual Learning workshop, while Q-PLAN shares a feedback Questionnaire for the participants. Each MIP leader collects feedback through the Questionnaire after the completion of each workshop. Participants must complete the questionnaire and send it back to the respective MIP leader. MIP leaders can send reminders to participants to collect their feedback. Following the collection of the questionnaires, MIP leaders anonymise and send the data to FBCD, which is the leader of the relative task. Finally, FBCD shares the results with Q-PLAN for monitoring and evaluation activities.
Data utilisation (Steps forward)	• All partners can use it for mutual learning purposes. • Service providers can use it to fine-tune the service portfolio. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Participants that are not MIP members will sign an Informed Consent Form. • MIP leaders will make the data anonymised before sending it to FBCD.

	• The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M7Q (Method 7 – Questionnaire)

4.1.8 *Method 8: Collection of feedback from Policy Roundtable policy-makers attendants through questionnaires*

Method 8 Summary	
Purpose	A dedicated Policy Roundtable is organised to facilitate discussions that helps MainstreamBIO partners to refine the MainstreamBIO Replication Guide and Toolkit, as well as to draw meaningful information for elaborating the final set of "Policy Recommendations and briefs". Through this method, we collect and analyse valuable feedback towards achieving the above activities and assessing the potential impact of MainstreamBIO policy insights.
Target Group(s)	Policy roundtable attendants
Data collection (Tools)	Feedback Questionnaire (not developed yet)
Related Task	Task 4.4
Timing & Frequency	After the Policy Roundtable and near the end of the project
Data collector/ processor	IUNG
Data controller / owner	Task 4.4 leader (IUNG)
Procedure	IUNG will organise in collaboration with all partners the Policy Roundtable, along with guidelines for the discussions while Q-PLAN will share a feedback Questionnaire for the policy makers that will participate. IUNG, as the task leader, will share the Questionnaire to collect feedback after the completion of the Policy Roundtable. Participants must complete the questionnaire and send it back to IUNG. Following the collection of the questionnaires, IUNG will anonymise and send the data to Q-PLAN for monitoring and evaluation activities.
Data utilisation (Steps forward)	• All partners can use it for mutual learning purposes. • Feedback will feed to the development of MainstreamBIO Replication Guide and Toolkit. • Feedback will feed to the development of Policy Recommendations.

	• T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Participants will sign an Informed Consent Form (to be retrieved from the MainstreamBIO Data Management Plan). • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M8Q (Method 8 – Questionnaire)

4.1.9 *Method 9: Collection of data from Business Models validation survey participants through questionnaires*

Method 9 Summary	
Purpose	This method aims to assess and validate the business models for MIPs, to elaborate concise business plans for the MIPs and MainstreamBIO Digital toolkit.
Target Group(s)	Survey respondents (MIP members, MAPs and use cases supported)
Data collection (Tools)	Questionnaire for Business Models validation survey participants (Annex IV - Questionnaire for Business Models validation survey participants)
Related Task	Task 5.4
Timing & Frequency	After M18
Data collector/ processor	INNV
Data controller / owner	Task 5.4 leader (INNV)
Procedure	INNV developed and shared with MIP leaders a Questionnaire to collect feedback regarding the operation of MIPs. Each service provider sends the Questionnaire via email to the supported use cases after delivering the relative services. The use cases must complete the Questionnaire and send it back to the respective service provider. Following that, all service providers send the completed Questionnaires to INNV. Service providers can send reminders to their use cases in order to avoid delays on delivery times. Finally, INNV anonymises and sends the data to Q-PLAN for monitoring and evaluation activities. In addition, all partners, particularly MIP leaders, can share via email (or on-site) the Questionnaire with stakeholders through their

	workshops and events in order to collect further feedback. After completing the Questionnaire, stakeholders send their feedback to the respective MainstreamBIO partner, who forwards the data to INNV. Finally, INNV sends the data anonymised to Q-PLAN.
Data utilisation (Steps forward)	• All partners can use it for mutual learning purposes. • Feedback will feed into business model validation of the MIPs and toolkit. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Participants that are not MIP members or supported use cases/MAPs will sign an Informed Consent Form. • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M9Q (Method 9 – Questionnaire)

4.1.10 *Method 10: Collection of data from Awareness Raising and Educational events participants through questionnaires*

Method 10 Summary	
Purpose	This method aims to measure the impact of MainstreamBIO Awareness Raising campaigns and Educational events on the interest and knowledge of stakeholders about bioeconomy and small-scale bio-based solutions.
Target Group(s)	Event participants (MIP members, external stakeholders)
Data collection (Tools)	Questionnaire for Awareness raising and Educational events participants (Annex V - Questionnaire for Awareness raising and Educational events participants)
Related Task	Task 3.5
Timing & Frequency	After each webinar and every event (1 per round)
Data collector/ processor	MIP leaders and MTU
Data controller / owner	Task 3.5 leader (MTU)
Procedure	Data is collected through 2 different activities: 1) MTU in collaboration with partners develops a series of educational webinars for each Innovation Round. Interested

	stakeholders must sign in to participate in each webinar. During the webinars a QR code accompanied by a link for the feedback questionnaire is shared through the chat to the participants. In addition, after the completion of each webinar, an automated mail is sent to participants including the feedback questionnaire (developed by Q-PLAN). Participants fill in the questionnaire and send it to MTU. After collecting all the questionnaires, MTU anonymises the data and send it to Q-PLAN for monitoring and evaluation activities. 2) Based on the baseline specs defined by MTU, each MIP organises a local event per round (e.g., field visit). MIP leaders utilise the same questionnaire, either on-site or via email, to collect feedback from the participants. Participants complete the questionnaire and send it to the respective MIP leader (in case of email). MIP leaders send the data to MTU to prepare an aggregation. Following that, MTU anonymises the data and send it to Q-PLAN for monitoring and evaluation activities.
Data utilisation (Steps forward)	• All partners can use it for mutual learning purposes. • Feedback can contribute to fine-tuning the MainstreamBIO Digital toolkit. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Participants that are not MIP members or supported use cases/MAPs will sign an Informed Consent Form (for local events). • MIP leaders will make the data anonymised before sending it to MTU (for local events). • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M10Q (Method 10 – Questionnaire)

4.1.11 *Method 11: Collection of feedback from MAP members receiving Innovation Support Services through questionnaires*

Method 11 Summary	
Purpose	Through this method we aim to measure the level of collaboration between service providers and use cases as well as their satisfaction for the provided services, in order to improve the provision of MainstreamBIO Innovation Support Services.
Target Group(s)	Use Cases and MAPs

Data collection (Tools)	Questionnaire for MAP members receiving innovation support services (Annex VI - Questionnaire for MAP members receiving innovation support services)
Related Task	Task 3.3
Timing & Frequency	After the provision of each service
Data collector/ processor	Service Providers along with the respective MIP leader
Data controller / owner	INNV
Procedure	INNV in collaboration with Q-PLAN developed the guidelines for the service provision along with a dedicated Questionnaire to collect feedback from the supported cases. The Questionnaire is shared with all service providers to use it. After the successful provision of a service, service providers share via email the Questionnaire with their case to complete it. Each case must fill in the Questionnaire based on their collaboration with the service provider and the quality of the provided service and send it back to the respective service provider. Reminders can be sent to use cases to avoid delays on delivery times. After collecting the Questionnaires, each service provider sends them to INNV, which is the Task leader. INNV gathers the completed Questionnaires from all the use cases and send them to Q-PLAN for monitoring and evaluation activities.
Data utilisation (Steps forward)	• All partners can use it for mutual learning purposes. • Feedback will feed into fine-tuning the MainstreamBIO service provision. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• Participants that are not MIP members will sign an Informed Consent Form. • The data is stored in a trusted repository where only MainstreamBIO partners have access. Data that is going to be publicly available is anonymised.
Method Symbol	• M11Q (Method 11 – Questionnaire)

4.1.12 *Method 12: Collection of data from Project Coordinator*

Method 11 Summary	
Purpose	The objective of this method is to measure several achievement indicators and KPIs defined in the Grant Agreement (GA), in order to

	monitor the overall progress of the project and identify any deviations from the initial planning.
Target Group(s)	Project Coordinator (Q-PLAN)
Data collection (Tools)	Reporting templates
Related Task	Task 4.1
Timing & Frequency	Every 6 months (starting from M18)
Data collector/ processor	Task 4.1 leader (Q-PLAN)
Data controller / owner	Project Coordinator (Q-PLAN)
Procedure	Every six months, the Project Coordinator measures the progress against the KPIs, and achievement indicators defined in the GA through all the available monitoring tools. The coordinator prepares and shares with partners via email reporting templates to fill in information about their work progress. Partners must complete the template according to their work progress and send it back to the coordinator within a specific time period. The Project Coordinator sends reminders to avoid any delays on delivery times. After collecting all the templates, the Project Coordinator aggregates the data and requests for further information, if necessary, to estimate the progress against the KPIs, and achievement indicators. In addition, through Google Analytics, the Dissemination and Communication (D&C) Manager (WHITE) collects the D&C statistics and sends them to the coordinator to estimate the D&C related KPIs. As the Project Coordinator is also the T4.1 leader (Q-PLAN), no further data flow is required for monitoring and evaluation activities.
Data utilisation (Steps forward)	• Data will be used for reporting. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• The data is stored in a trusted repository where only MainstreamBIO partners have access.
Method Symbol	• M12D (Method 12 – Information)

4.1.13 *Method 13: Collection of data from developers through Toolkit analytics*

Method 11 Summary

Purpose	This method aims to measure the interest of stakeholders for the MainstreamBIO Digital toolkit and its individual tools, in order to assess user needs and preferences as well as to detect areas for improvement.
Target Group(s)	Online users
Data collection (Tools)	N/A
Related Task	Task 2.5
Timing & Frequency	Ad hoc through toolkit analytics
Data collector/ processor	Task 2.5 leader (DRAXIS)
Data controller / owner	DRAXIS
Procedure	Each time an online user navigates through the MainstreamBIO Digital toolkit, their browsing is recorded in a database. The Digital toolkit's developer (DRAXIS) has access to this database and collects the relative analytics at any time. When requested, DRAXIS exports and sends the data to Q-PLAN for monitoring and evaluation activities.
Data utilisation (Steps forward)	• Data can be used by DRAXIS for improving the Digital toolkit. • Data will be used for reporting. • T4.1 leader (Q-PLAN) can use it for assessment and evaluation purposes.
Ethical considerations	• The data is stored in a trusted repository where only MainstreamBIO partners have access.
Method Symbol	• M13D (Method 13 – Information)

4.1.14 *Summary*

A summary of data collection methods and tools that are used in MainstreamBIO project is presented in Table 2.

Table 2: Summary of data collection methods and tools

Method #	Project Activity	Tool	Timing	Data Processor
M1M	Operation of MIPs	Stakeholders' matrix	Continuous update	T1.1 Leader (Q-PLAN)
M2R	Operation of MIPs	Short report	Every 6 months	T4.1 Leader (Q-PLAN)

Method #	Project Activity	Tool	Timing	Data Processor
M3Q	Operation of MIPs	Feedback questionnaire	Ad hoc	MIP leaders
M4Q	Capacity Building workshops	Feedback questionnaire	After every workshop	MIP leaders
M5Q	Networking events	Feedback questionnaire	After every event	MIP leaders
M6Q	Scale-up workshops	Feedback questionnaire	After every Workshop	MIP leaders
M7Q	Mutual learning workshops	Feedback questionnaire	After every Workshop	MIP leaders
M8Q	Policy	Feedback questionnaire	After Policy Roundtable	T4.4 Leader (IUNG)
M9Q	Business Model Validation	Feedback Questionnaire	After M18	T5.4 Leader (INNV)
M10Q	Awareness raising and education	Feedback questionnaire	After every event	MIP leaders and MTU
M11Q	Innovation support services	Feedback questionnaire	After the provision of each service	Service Providers & MIP leaders
M12D	Coordination	Reporting templates	Every 6 months	T4.1 leader (Q-PLAN)
M13D	Toolkit	N/A	Ad hoc	T2.5 leader (DRAXIS)

4.2 Data Management Provisions

The MainstreamBIO consortium handles personal data with due diligence and according to its Data Management Plan guidelines (D6.3). It respects the provisions set by the General Data Protection Regulation (GDPR) and takes any steps required to make the data collected/generated FAIR (Findable, Accessible, Interoperable, and Reusable). In the context of T4.1, a few personal details are collected, such as the stakeholder group, gender and job position. Thus, all involved partners must adopt measures to comply with the Art. 5 GDPR principles relating to the processing of personal data[10].

- **Principle 1: Lawfulness, fairness and transparency principle**
  The personal data must be processed lawfully, fairly, and transparently concerning the data subject. After reading the consent form and privacy policy, all questionnaire respondents must provide their consent to handle their personal data. At the same time, a data subject request form must be provided to them to support any future data requests.

  Within the MainstreamBIO Data Management Plan (D6.3), there are Privacy Policy and Data Subject Request Form templates to support this process. In a similar context, a consent form is attached to the questionnaires available in Annexes III, IV, V and VI whenever they are communicated to the data subjects. However, each MIP is responsible for appropriately adjusting and translating the templates to fit their needs and local laws whenever necessary. Also, they are responsible for developing any additional privacy policy that may be needed.

- **Principle 2: Purpose limitation**

  The personal data must be collected for specified, explicit and legitimate purposes (i.e., to evaluate the impact of key MainstreamBIO activities) and not be further processed in a manner incompatible with those purposes.

- **Principle 3: Data minimisation**

  The personal data must be adequate, relevant and limited to what is necessary to the purposes for which they are processed. For example, the responsibility for contacting stakeholders and sharing the questionnaires has been appointed to the MIP leaders. Thus, no personal data such as names and emails should be collected by the task leaders (e.g., Q-PLAN).

- **Principle 4: Accuracy**

  The personal data must be accurate and, where necessary, kept up to date. To this end, checks must be implemented to correct, update, or erase incorrect or incomplete data.

- **Principle 5: Storage limitation**

  Personal data must be retained to achieve our research purposes and comply with applicable laws, regulations, and contractual obligations to which the MainstreamBIO consortium is subject. For instance, the partners are obliged to retain data concerning projects funded by the Horizon Europe Framework Programme for Research and Innovation of the European Union for up to five years after the end of the project (unless further retention is requested by

[10] Intersoft consulting. Principles relating to processing of personal data. Available at https://gdpr-info.eu/art-5-gdpr/

auditors). After the expiry of the retention period, and unless further legitimate grounds for retention arise, all MainstreamBIO partners must dispose of personal data in a secure manner.

- **Principle 6: Integrity and confidentiality**

  If applicable, MIP leaders must apply a personal data risk assessment process to identify, analyse, and evaluate the security risks that may threaten personal data of MIP members and external stakeholders. Based on the results of this risk assessment, they must define and apply a set of both technical and organisational measures to mitigate security risks.

On top of the above, after completing the T4.1 activities, any necessary action will be taken to make the data collected/generated FAIR. In particular, no later than 120 days after the publication of D4.1 or any other relevant publication prepared by MainstreamBIO partners, the data collected/generated will be made freely available to the public. Aggregate and anonymised data will be uploaded to Zenodo, which automatically links to OpenAIRE. Finally, data findability will be fostered thanks to the metadata that will be included.

4.3 MainstreamBIO set of Indicators

Section 4.3 presents the set of indicators (117 in total) employed to measure the progress towards each of the MainstreamBIO objectives. The indicators were configured based on the output of previous M&E works (Section 2.2), the MainstreamBIO consortium partners, and the feedback received from AB members. They are grouped according to the objective or category to which they are related.

The left side of each table contains information on the indicator activity and the particular indicator identifier. The right side contains information on the collection method employed for each indicator.

4.3.1 *O1 - Enhance cooperation of key players and knowledge holders for bio-based innovations in rural areas*

O1a - Stakeholders' engagement through MIPs

Table 3: Indicators related to the objective O1a

Activity	Identifier	Indicator	Method
Operation of MIPs	O1a1.1	Number of stakeholders engaged in each MIP (mean number from all MIPs)	M12D
	O1a1.2	Number of stakeholders participating in interviews of WP1	M12D
	O1a1.3	Percentage of existing local agricultural and bioeconomy innovation intermediaries (agri-food clusters, local institutions, innovation hubs, advisory services, research centres etc.) representatives involved in each MIP/ total stakeholders per MIP	M1M
	O1a1.4	Percentage of biomass producers/ total stakeholders per MIP	M1M
	O1a1.5	Percentage of business/ local industry representatives/ total stakeholders per MIP	M1M

Activity	Identifier	Indicator	Method
	O1a1.6	Percentage of academics and researchers/ total stakeholders per MIP	M1M
	O1a1.7	Percentage of public authorities' representatives/ total stakeholders per MIP	M1M
	O1a1.8	Percentage of policy makers representatives/ total stakeholders per MIP	M1M
	O1a1.9	Percentage of women/ total number of stakeholders per MIP	M1M
	O1a1.10	Percentage of civil society representatives/ total stakeholders per MIP	M1M
	O1a1.11	Percentage of young farmers (<40 years of age)/ total stakeholders per MIP	M1M
	O1a1.12	Percentage of MIP members that dropped out before the project timeline/ total number of MIP members	M2R
	O1a1.13	Number of MIPs members believing that the involvement and contribution of farmers to MainstreamBIO activities has been significant/ total number of MIPs members	M3Q
	O1a1.14	Number of MIPs members who reported that the activities of the MIP took place in a gender-equal environment/ Total number of MIPs members	M3Q
	O1a1.15	Number of MIPs members who reported being satisfied by the experience of participating in MainstreamBIO MIPs/ Total number of MIPs members	M3Q
	O1a1.16	Number of MIPs members believing that the synthesis of MIP was adequately diverse to allow various opinions to be considered and fruitful synergies to be developed/ Total number of MIPs members	M3Q
	O1a1.17	Increase rate of MIPs members/ MIP	M2R
	O1a1.18	Number of MIPs members who reported they got involved in MainstreamBIO MIPs through a contact that is already partaking in the MainstreamBIO activities/ Total number of MIPs members	M3Q
	O1a1.19	Number of MIPs members (rural stakeholders/ business representatives) who reported that their participation in MIPs served well their business benefits/ Total number of MIPs members	M3Q
	O1a1.20	Number of MIPs members (research stakeholders) who reported that their participation in MIPs did not hinder freedom of research activities/ Total number of MIPs members	M3Q

O1b - Cooperation in innovative business models through MAPs

Table 4: Indicators related to the objective O1b

Activity	Identifier	Indicator	Method
Operation of MIPs	O1b1.1	Level of trust among MIPs members/ MIP	M2R
	O1b1.2	Number of MIPs members willing to take action/ total number of MIPs members	M2R
	O1b1.3	Level of presence of prime movers/ MIP	M2R
Innovation support services	O1b2.1	Number of MAPs supported	M12D
	O1b2.2	Number of stakeholders taking part in MAPs	M2R
	O1b2.3	Percentage of farmers/ Total MAP members	M2R
	O1b2.4	Number of applicants in MainstreamBIO open calls- first round	M12D
	O1b2.5	Number of applicants in MainstreamBIO open calls- second round	M12D
	O1b2.6	Number of MAPs in long lists from open calls- first round	M12D
	O1b2.7	Number of MAPs in long lists from open calls- second round	M12D
	O1b2.8	Number of MAPs members who reported a good collaboration in their project/ Total number of MAPs members	M11I
	O1b2.9	Number of MAPs members who reported being satisfied by the experience of being supported by MainstreamBIO services/ Total number of MAPs members	M11I
	O1b2.10	Number of MAPs members who reported that they would like to receive additional services from MainstreamBIO	M11I
	O1b2.11	Percentage of women/ total number of MAPs members	M2R
	O1b2.12	Number of MAPs members who reported that their participation in MainstreamBIO activities improved their income diversification/ Total number of MAPs members	M11I
Business Model validation	O1b3.1	Number of MAP members who reported that the value propositions respond to the needs of the region / Total number of MAPs members	M9Q
	O1b3.2	Number of MAP members who added new Key Activities on the associated Business Model / Total number of MAPs members	M9Q

O1c - Development of connections for targeted stakeholders

Table 5: Indicators related to the objective O1c

Activity	Identifier	Indicator	Method
Operation of MIPs	O1c1.1	Number of stakeholders participating in MainstreamBIO co-creation workshops	M12D
	O1c1.2	Number of MIPs members not previously engaged in bioeconomy or rural local networks/ Total number of MIPs members	M3Q
	O1c1.3	Number of MIPs members reporting that participating in MIPs events has improved their connections with agricultural, business and research stakeholders/ Total number of MIPs members	M3Q
Capacity building workshops	O1c2.1	Number of stakeholders participating in MainstreamBIO capacity building workshops	M12D
Networking events	O1c3.1	Number of participants in MainstreamBIO networking events-first round	M12D
	O1c3.2	Number of participants in MainstreamBIO networking events-second round	M12D
	O1c3.3	Number of participants in MainstreamBIO demo days	M2R
	O1c3.4	Number of participants in MainstreamBIO networking events reporting that their participation facilitated connections with possible partners/ Total number of participants	M5Q
	O1c3.5	Number of participants in MainstreamBIO networking events and demo days reporting that the show cases inspired them to get engaged in small-scale bioeconomy projects ventures/ Total number of participants	M5Q

4.3.2 *O2 - Support innovators to accelerate the development of marketable products and services and improve market penetration of bio-based solutions*

O2a - Adoption of small-scale bio-based solutions

Table 6: Indicators related to the objective O2a

Activity	Identifier	Indicator	Method
All Activities	O2a1.1	Number of sustainable business model pathways co-created	M12D
	O2a1.2	Number of bio-based products or services accelerated	M12D
	O2a1.3	Increase in sales of bio-based products / services accelerated (baseline: T1.3)	M12D
	O2a1.4	Increase in income diversification (baseline: T1.3)	M12D
	O2a1.5	Number of farmers adopting better nutrient recycling practices	M12D
	O2a1.6	Number of jobs created or safeguarded	M12D
	O2a2.1	Number of services/ types delivered	M12D

Activity	Identifier	Indicator	Method
Innovation support services	O2a2.2	Percentage of MAPs members who reported that they were provided with sufficient support through MainstreamBIO services/ Total number of MAPs members	M11I
	O2a2.3	Number of MAPs members who reported that participating in MainstreamBIO MAPs and services improved their team-working skills/ Total number of MAPs members	M11I

O2b - Delivery and iterative improvement of MainstreamBIO innovation services

Table 7: Indicators related to the objective O2b

Activity	Identifier	Indicator	Method
Innovation support services	O2b1.1	Number of business support services delivered	M2R
	O2b1.2	Number of technical support services delivered	M2R
	O2b1.3	Number of innovation support services in total delivered	M2R
	O2b1.4	Number of innovators supported to deploy and/or scale up small-scale bio-based solutions	M2R
	O2b1.5	Number of MIPs members believing that MainstreamBIO services and toolkit promoted the engagement of farmers in bioeconomy/ Total number of MIPs members	M3Q

O2c - Delivery and iterative improvement of MainstreamBIO toolkit

Table 8: Indicators related to the objective O2c

Activity	Identifier	Indicator	Method
Toolkit	O2c1.1	Number of participants who reported at least satisfactory feeling with the Toolkit in the Capacity Building workshops/ Number of participants	M4Q
	O2c1.2	Number of downloads of replication guide and toolkit	M13D
	O2c1.3	Number of toolkit users who reported that the colour scheme contributed positively to the overall experience / number of participants	M4Q
	O2c1.4	Number of registered users	M13D
	O2c1.5	Number of active users / Total number of users	M13D
	O2c1.6	Number of page views	M13D
	O2c1.7	User session duration	M13D
	O2c1.8	Number of sessions within 30 minutes	M13D
	O2c1.9	Bounce rate (the % of single-page visits without taking an action)	M13D
	O2c1.10	Number of posts & uploads in Bioforum	M13D
	O2c1.11	Number of downloads (users who downloaded material)	M13D
	O2c1.12	Net Promoter Score (NPS)	M13D
	O2c1.13	Customer satisfaction (CSAT)	M13D

Activity	Identifier	Indicator	Method
	O2c1.14	Number of participants who reported a good overall experience in using the Toolkit in the capacity building workshops / Number of participants	M4Q
	O2c1.15	Number of participants who reported that the Toolkit was easy to navigate and use in the capacity building workshops / Number of participants	M4Q
	O2c1.16	Number of participants who reported that were able to easily find all the information there were looking for in the Toolkit in the capacity building workshops / Number of participants	M4Q
	O2c1.17	Number of participants who reported that the menu and the navigation structure were clear and easy to understand in the Toolkit in the capacity building workshops / Number of participants	M4Q
	O2c1.18	Number of participants who reported that the Toolkit was visually appealing in the capacity building workshops / Number of participants	M4Q
	O2c1.19	Number of participants who reported that the overall design of the Toolkit was good in the capacity building workshops / Number of participants	M4Q
	O2c1.20	Number of participants who reported that the content of the Toolkit meets their expectations in the capacity building workshops / Number of participants	M4Q
	O2c1.21	Number of participants who reported that they encounter challenges in navigating the Toolkit in the capacity building workshops / Number of participants	M4Q
	O2c1.22	Number of participants who reported delays or errors in accessing different pages of the Toolkit in the capacity building workshops / Number of participants	M4Q
	O2c1.23	Number of participants who shared any suggestions for improvement in the capacity building workshops / Number of participants	M4Q

O2d - Support of scale-up and transferability

Table 9: Indicators related to the objective O2d

Activity	Identifier	Indicator	Method
All	O2d1.1	Number of replication guides shared	M12D
	O2d1.2	Stakeholders involved in exploitation/ validation though business model validation survey	M12D
Scale-up workshops	O2d2.1	Number of participants in MainstreamBIO regional scale-up workshops reporting that small-scale biobased solutions have a good scaling readiness in their region/ total number of participants	M6Q
	O2d2.2	Number of participants in MainstreamBIO regional scale-up workshops reporting that case studies and success stories presented served as inspiration for their business activities/ Total number of participants	M6Q

Activity	Identifier	Indicator	Method
	O2d2.3	Number of participants in MainstreamBIO regional scale-up workshops reporting that realistic business models pathways have been created, answering their needs and challenges/ Total number of participants	M6Q
	O2d2.4	Number of scale-up workshops participants	M2R
Mutual learning workshops	O2d3.1	Number of participants in MainstreamBIO mutual learning workshops and missions	M2R
	O2d3.2	Number of external invitees (outside MainstreamBIO partnership) participating in MainstreamBIO mutual learning workshops and missions	M2R
	O2d3.3	Number of participants in mutual learning workshops reporting that the events enabled international contacts for them/ total number of participants	M7Q
	O2d3.4	Number of participants in mutual learning workshops reporting that field visits have been an inspiration for replicating showcased solutions/ total number of participants	M7Q
Policy	O2d4.1	Number of policy makers attending MainstreamBIO policy roundtable	M12D
	O2d4.2	Number of policy makers reporting that MainstreamBIO policy insights are relevant towards relevant EU policy objectives (EU Bioeconomy strategy, Green Deal, Long-Term Vision for Rural areas, new CAP)	M8Q
	O2d4.3	Number of policy makers reporting that MainstreamBIO policy insights facilitate actors from different backgrounds to find overlapping areas of interest/ total number of policy makers in policy roundtable	M8Q
	O2d4.4	Number of policy makers reporting that MainstreamBIO policy insights contribute to filling any policy implementation gaps and challenges for mainstreaming bioeconomy in rural areas	M8Q

4.3.3 *O3 - Deploy existing knowledge to increase number of implemented bio-based solutions in rural areas*

Table 10: Indicators related to the objective O3

Activity	Identifier	Indicator	Method
All	O31.1	Number of bio-based technology solutions catalogued	M12D
	O31.2	Number of bio-based social innovations catalogued	M12D
	O31.3	Number of bio-based innovative business models catalogued	M12D
	O31.4	Number of total bio-based solutions catalogued	M12D
	O31.5	Number of good practices for nutrient recycling collected	M12D
	O31.6	Number of existing digital tools integrated in MainstreamBIO toolkit	M12D
	O31.7	Number of synergies with clustered projects	M12D

4.3.4 *O4 - Build awareness and knowledge on bioeconomy*

Table 11: Indicators related to the objective O4

Activity	Identifier	Indicator	Method
All activities	O41.1	Number of stakeholders reached through dissemination activities	M12D
	O41.2	Number of stakeholders directly engaged	M12D
	O41.3	Unique visits to the project website	M12D
	O41.4	Followers on social media	M12D
	O41.5	External events/conferences attended	M12D
	O41.6	Views of the promotional video	M12D
	O41.7	Number of newsletters released	M12D
	O41.8	Promotional material distributed	M12D
Awareness raising and education	O42.1	Number of stakeholders reached in MainstreamBIO awareness raising campaigns	M10Q
	O42.2	Number of participants in MainstreamBIO awareness raising and education events	M10Q
	O42.3	Percentage of stakeholders reached through building awareness activities (T3.5) interested in receiving information about MainstreamBIO outcomes/ total number of stakeholders reached	M10Q
	O42.4	Number of stakeholders who reported that in the future they would more actively search information about bioeconomy or read related articles/ news/ total number of stakeholders reached	M10Q
	O42.5	Number of stakeholders who reported that they gained a better understanding about bioeconomy/ total number of stakeholders reached	M10Q

5. Assessment and Evaluation Framework

The MainstreamBIO Assessment and Evaluation framework is set to process the data and information collected by the MainstreamBIO Monitoring framework (see Section 4). It aims to generate valuable insights, assess the progress towards the project objectives and evaluate our MIPs' performance and impact. In the current section, we elaborate on the design, techniques and tools that will be used to perform a thorough Assessment and Evaluation.

5.1 Purpose

Assessment and **Evaluation** are two words whose meaning is quite close yet different from each other. The meaning of Assessment is to review the data about something or someone with the purpose to improve the current performance. The meaning of Evaluation is to judge the performance of something or someone by measuring the performance based on existing standards. Assessment is an ongoing process, while evaluation provides closure on the existing process.

In the context of MainstreamBIO, we mainly focus on assessing MIPs' performance to fuel the iterative improvement of the innovation support services and the digital toolkit. However, we also evaluate the impact of our MIPs to inform respective policy recommendations and a replication guide. In particular, the purposes of the MainstreamBIO Assessment and Evaluation framework are the following:

- Identifying the strong and weak parts of our approach, inferring the success and prohibiting factors and ultimately, improving the MainstreamBIO activities.
- Understanding the specificities of each MIP, its strengths and weaknesses and ultimately, improving their replication potential.
- Improve our innovation support services and the digital Toolkit.
- Capture our performance in meeting the objectives of our support measures and their impact.
- Providing ourselves with a sense of success or failure.

5.2 Assessment and Evaluation Techniques

Three key ways (techniques) have been selected to process the collected data and other information for assessment and evaluation purposes. Each technique sheds light on a different and unique aspect and generates valuable information. Some of the monitored indicators will be compared with their respective targets, while others will be validated by the values of the other MIPs. Finally, we will try to compare a few selected indicators with European and worldwide trends identified in the literature. The following subsections describe in more detail each of the selected techniques.

5.2.1 *Technique 1: Comparison with the Targets*

Target setting is an important tool for clarifying direction and assessing organizational progress. It provides a MIP with a long-term vision and short-term motivation. In addition, if a MIP knows where it wants to go, it will be in a better position to know whether or not the target has been accomplished.

The targets are set either by the Grant Agreement (GA) or the MIP leaders. Then Q-PLAN created a first draft of potential/suggested targets for the MIPs. Particular attention is paid to making the target values of all indicators S.M.A.R.T., meaning:

- Specific (i.e., specific about what is to be accomplished),
- Measurable (i.e., to ensure that there are measurement methods available),

- Achievable (concerning the baseline situation identified previously),
- Relevant (i.e., relevant to the direction a CS Hub want to go in), and
- Time-bound (because targets without a timeframe may be forgotten or pushed to the side)[11]

Some of the targets are also based on previous research and the profiles of the targeted rural areas of the MIPs (T1.2 and T1.3).

Afterwards, the MIP leaders will be invited to comment and adjust the target values (if needed), considering their realistic circumstances and available resources. The final draft of the targets will be shared by Q-PLAN.

5.2.2 *Technique 2: Comparison with the values of the other MIPs*

In addition to the previous technique, inter-MIP comparisons can generate valuable insights. It is well-known that each targeted rural area of the MIPs is different from the others in various aspects, including available feedstocks, level of maturity on bioeconomy, and regional value chains. So, comparing the values of monitored indicators of each MIP with the values of other MIPs can shed more light on these differences. The current technique can contribute to understanding better the progress of mainstreaming small-scale bio-based solutions across rural areas in Europe.

5.2.3 *Technique 3: Results compared to European / Worldwide trends*

This technique aims to investigate whether the results achieved by the MIPs during the MainstreamBIO project are aligned with the results commonly achieved in Europe and worldwide. In particular, we pick a few indicators, calculate their final values (i.e. the percentage increase from one year to the next or from the 1st round to the 2nd round) and compare these results with relevant European and/or worldwide trends. For instance, Q-PLAN will compare the yearly increase in better understanding/awareness about bioeconomy gained by the MainstreamBIO activities compared to the one achieved globally/in Europe.

[11] Australian Government. (2021). Set goals for your business. https://business.gov.au/planning/business-plans/set-goals-for-your-business#:~:text=Why%20goal%20setting%20is%20important,-Goals%20are%20an&text=They%20can%20give%20you%20a,if%20your%20business%20is%20succeeding.

5.2.4 *Summary and Timeline*

The figure below shows a rough estimation of the MainstreamBIO M&E activities that will take place during the 2nd Innovation Round.

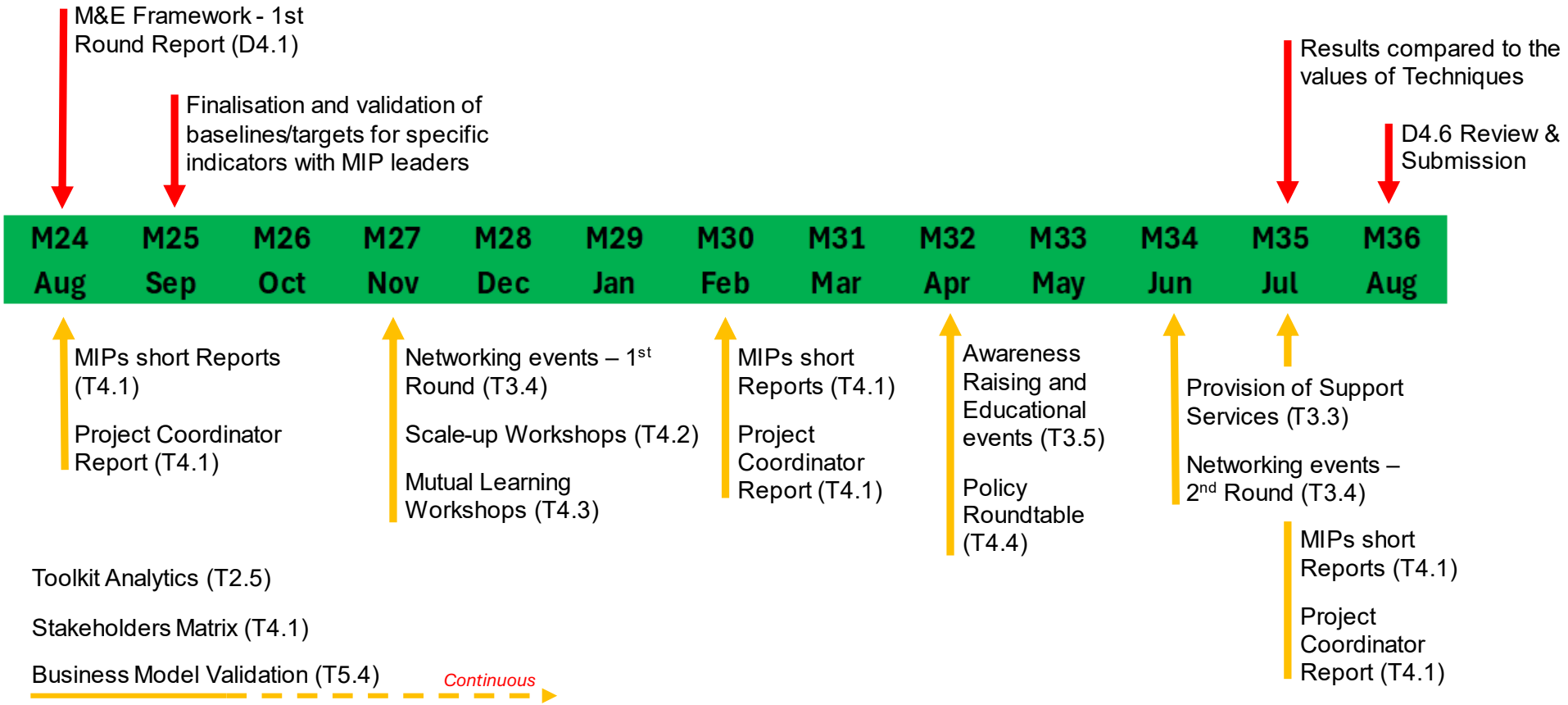


Figure 3: Timeline of the MainstreamBIO M&E activities

6. Analytical results of Evaluation and Impact Assessment

This section addresses an **evaluation of the project per M&E framework objective** (O), offering a comprehensive analysis of the overall performance and outcomes of the MIPs and projects' activities. Additionally, this section delves into meaningful insights for the seven MIPs, aiding in a more nuanced understanding of the results per MIP.

The data assessed for the 1st Innovation support round came from several project activities and more specifically:

- Operation of MIPs
- Capacity building workshops
- Awareness raising and education campaigns
- Innovation support services and
- Business model validation

To collect the data from the abovementioned project activities, 7 data collection methods were used, in particular: 7 short reports (1 per MIP), 107 MIP members recorded in the Stakeholder Matrix, 60 participants from the Capacity building workshops, 67 participants from the Awareness raising and education campaigns, 16 replies from the cases received Innovation Support Services which also validated the MIPs Business Models, and information from the Project Coordination.

This section delves into the meticulous process of measuring the project's impact, shedding light on its significance and the extent to which it has contributed to its intended goals and objectives. Section 6 is an essential segment that allows for a comprehensive and structured examination of the project's outcomes and their implications.

6.1 Enhance cooperation of key players and knowledge holders for bio-based innovations in rural areas (O1)

This part presents the efforts of MainstreamBIO to enhance the cooperation of key players and stakeholders for bio-based innovation in rural areas. To that end, three sub-objectives were set by the M&E framework, each of them including multiple aspects, helping us to extract valuable insights from the monitored performance of the MIPs. More specifically:

- **"Stakeholders' engagement through MIPs"** includes 20 indicators to be evaluated regarding the MIP members.
- **"Cooperation in innovative business models through MAPs**" includes 17 indicators about the innovation support services and the business model validation activities.
- **"Development of connections for targeted stakeholders"** includes 9 indicators to evaluate mainly the networking activities of the project.

6.1.1 *Stakeholders' engagement through MIPs (O1a)*

The stakeholders' engagement through the regional MIPs is an ongoing process throughout the projects' duration. Until now, 107 stakeholders have been formally engaged in the MIPs accomplishing the minimum target of 105 total stakeholders. However, not all MIPs have achieved the target of at least 15 members per MIP, thus additional efforts are needed to engage more stakeholders. The number of MIP members per regional MIP is presented in the figure below.

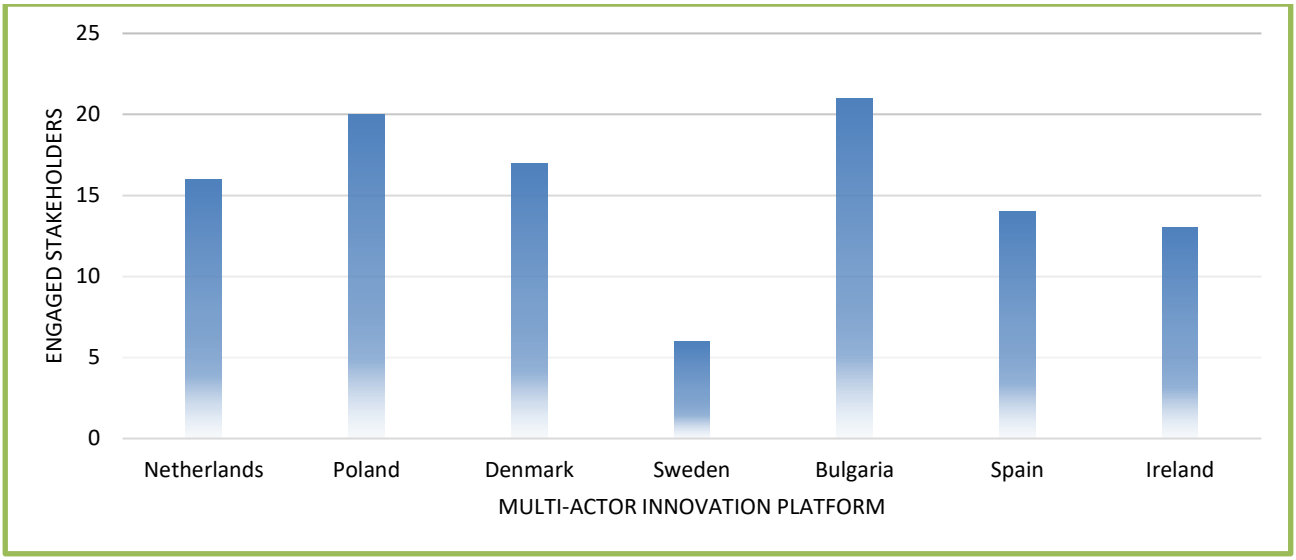


Figure 4: Number of engaged stakeholders per MIP

Overall, the MIP in Bulgaria and in Poland are most successful in engaging stakeholders, while additional efforts ae need in Sweden to engage more members (there are reluctant to sign documents such as Informed Consent form, Declaration of Acceptance). In addition, only 0.01% (1 member from MIP in Ireland) has dropped out the participation from the regional MIP.

Although the existing gender balance is quite good considering the specificities of the bioeconomy sector, we will try to achieve a percentage of women **above 40%**.

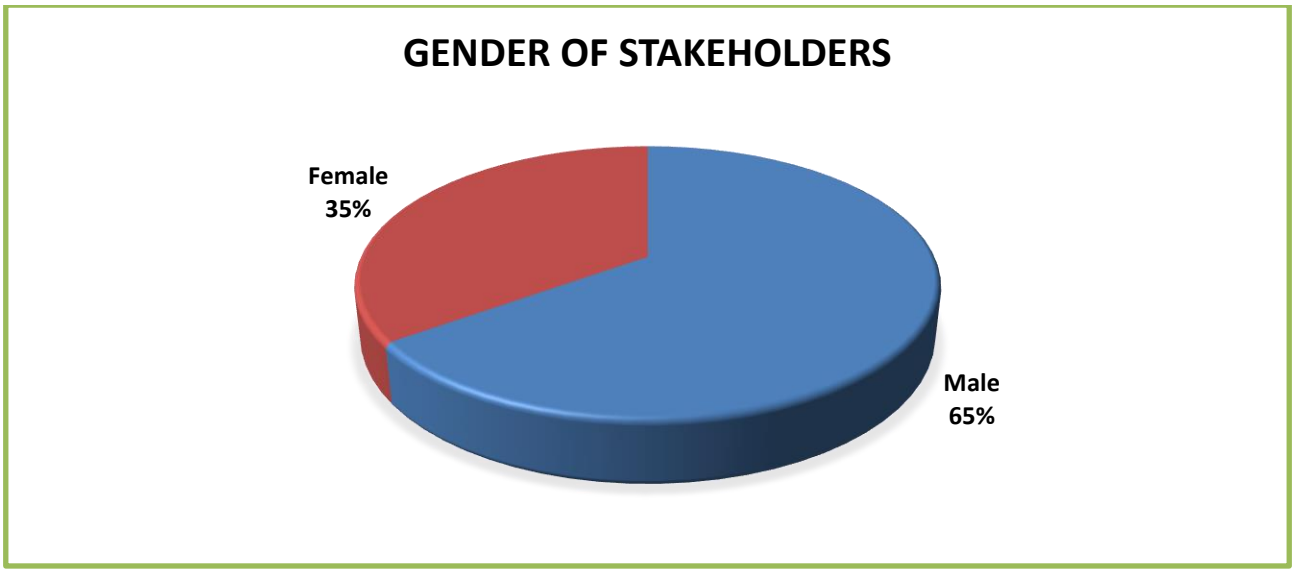


Figure 5: Gender of stakeholders in MainstreamBIO MIPs

Regarding the distribution of the engaged stakeholders between the different stakeholder groups, the results are quite satisfactory, however more efforts are needed to engage stakeholders from specific groups (Civil society, Policy and Biomass producers). The total distribution of the stakeholders is highlighted below.

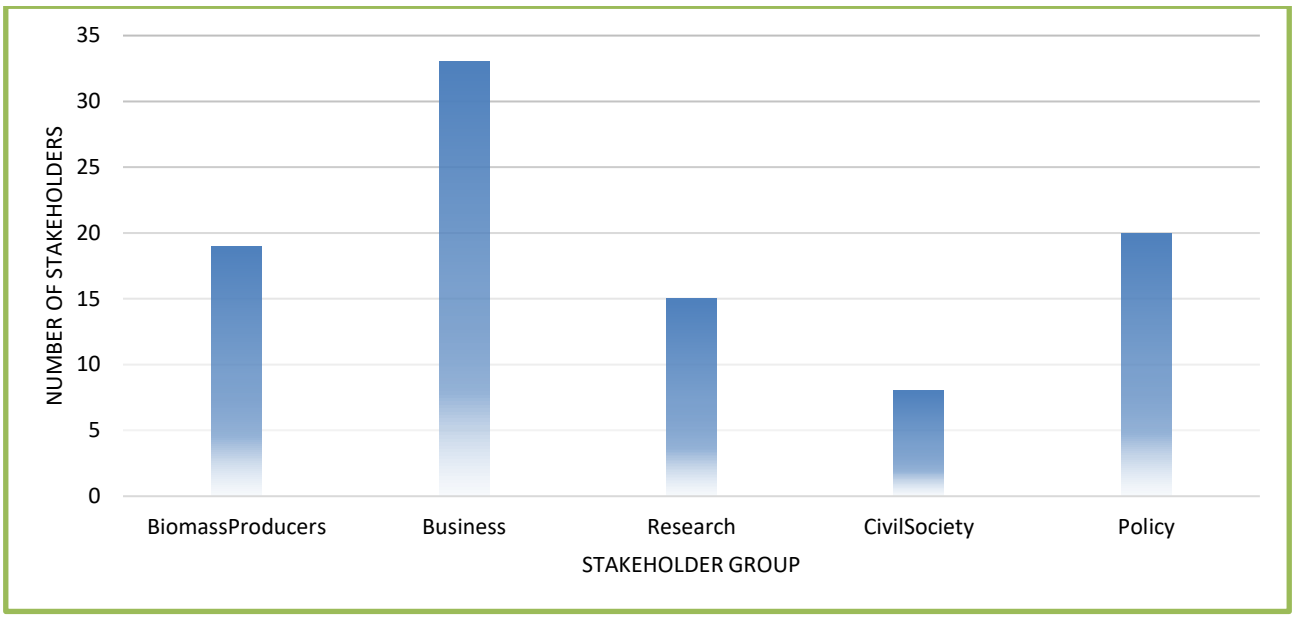


Figure 6: Number of stakeholders per each stakeholder group

Finally, 32% of the total biomass producers engaged so far are young farmers (under 40 years old). Even though there is already a significant number of young biomass producers engaged in the project activities, more efforts are needed to further increase that number.

6.1.2 *Cooperation in innovative business models through MAPs (O1b)*

The 1st round of Innovation support services had very positive results. More specifically, 36 unique applications were received across all 7 MIPs during the 1st MainstreamBIO Open Call, requesting more than 100 services. However, additional efforts will be needed to achieve even better results at the end of the 2nd innovation support round in terms of supporting more Multi-Actor Partnerships. Moreover, 67% (72/107) of the MIP members were reported truly willing to take bioeconomy-related actions, while 37% (40/107) MIP members characterized as “prime movers” in bioeconomy.

In addition, 67% (18/27) of the supported cases are already MIP members. More efforts are needed from the MIP leaders and the service providers to motivate supported cases to join the MainstreamBIO MIPs.

6.1.3 *Development of connections for targeted stakeholders (O1c)*

Significant efforts towards developing connections for targeted stakeholders started during the 1st Innovation Support round but will be accelerated in the upcoming period. The co-creation workshops and the capacity building workshops were the most significant activities towards this direction so far. More specifically, 92 people participated in the co-creation workshops across all focal regions, exceeding the minimum target of 70 participants. In addition, an astonishing number of 160 participants (the target was 70) in the capacity building workshops revealed that there is a critical mass of key stakeholders that are willing to be informed about innovative bioeconomy concepts and more specifically about the MainstreamBIO digital Toolkit which was the main topic of these workshops.

Additional efforts will be made during the 2nd Innovation Support round to foster more meaningful connections for our stakeholders.

6.2 Support innovators to accelerate the development of marketable products and services and improve market penetration of bio-based solutions (O2)

This objective summarises the efforts of MainstreamBIO to support innovators to accelerate the development of marketable products and services and improve market penetration of bio-based solutions. To that end, four sub-objectives were set by the M&E framework, each of them including various aspects, helping us to extract valuable insights from the monitored performance of the MIPs. More specifically:

- **"Adoption of small-scale biobased solutions"** includes 9 indicators to be evaluated through two data collection methods, most of which have their targets set by the GA.
- **"Delivery and iterative improvement of MainstreamBIO innovation services"** includes 5 indicators to be evaluated from the innovation support services activity.
- **"Delivery and iterative improvement of MainstreamBIO toolkit"** includes 23 indicators to be evaluated from the capacity building workshops and the Toolkit analytics.
- **"Support of scale-up and transferability"** includes 14 indicators to be evaluated from various project activities mainly in the 2nd innovation support round.

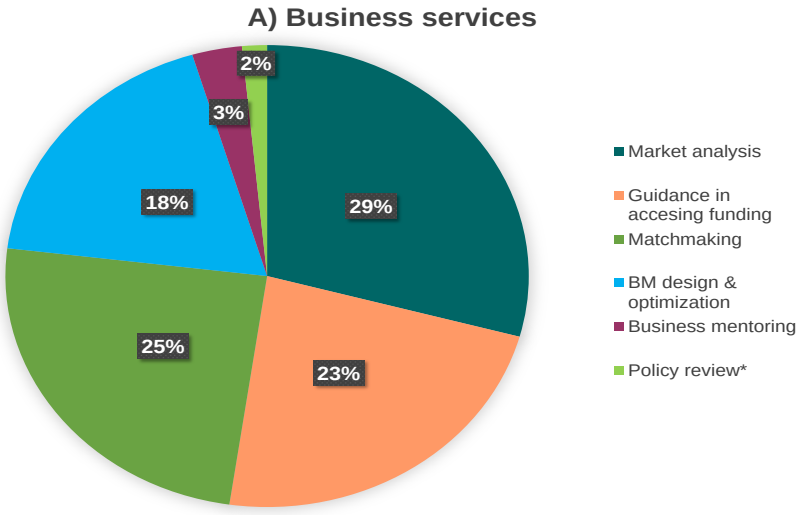
6.2.1 *Adoption of small-scale biobased solutions (O2a)*

During the 1st Innovation Support round, 35 services (both technical and business) were delivered, approaching the total target of 50 services. More efforts are needed to provide even more sufficient support and meaningful services aiming to result in an increased income diversification.

In addition, 28/35 sustainable business model pathways were co-created through the support of MainstreamBIO service providers in the focal regions.

6.2.2 *Delivery and iterative improvement of MainstreamBIO innovation services (O2b)*

As indicated above, 35 services were delivered in the 1st innovation support round, while more than 100 services were requested from the applicants in the 1st Open Call. The most requested business service was Market Analysis (29%), followed by Matchmaking (25%), Guidance in accessing funding (23%) and Business model design (18%). The most requested technical service was Scale-up advisory (38%), followed by Technology scouting (19%) and Nutrient management and fertilization (19%).



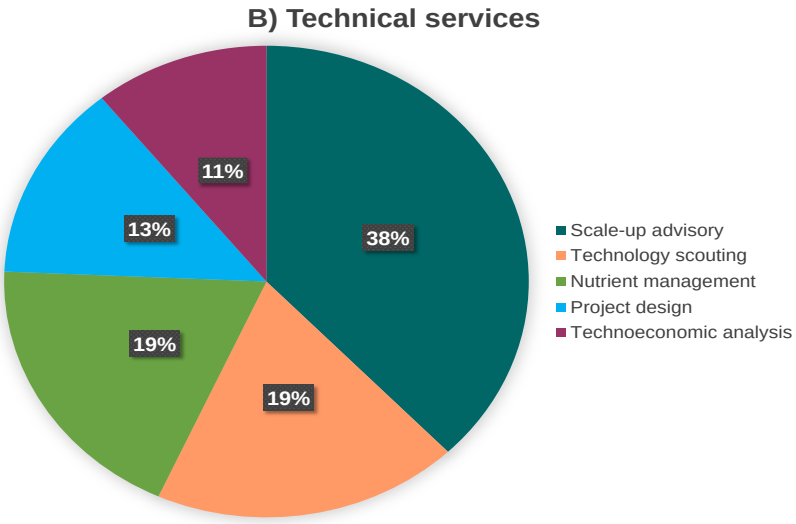


Figure 7:Demand for innovation support services in the first open call

Of the 35 services that were actually provided, 34% (12/35) were technical, while 66% (23/35) were business services, showing that there was a clear preference for business services from the cases requested for support.

6.2.3 *Delivery and iterative improvement of MainstreamBIO toolkit (O2c)*

The main activity that contributed to this sub-objective during the 1st innovation support round was the capacity building workshops. Additional data will be collected through the MainstreamBIO Toolkit analytics during the 2nd round where more users will be familiar with the Toolkit and its components. In general, the feedback for the MainstreamBIO Toolkit was very positive, while there are always areas for further improvement. More specifically, 58% of the participants in the capacity building workshops (60 in total) reported that they had a satisfactory experience with the toolkit's website.

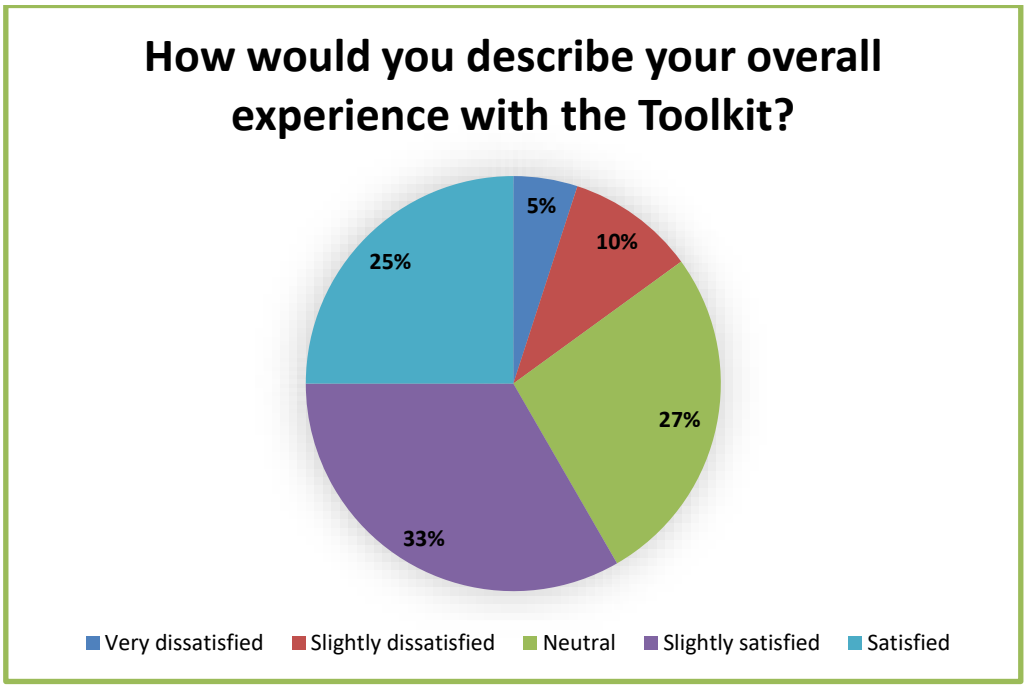


Figure 8: Overall experience with the MainstreamBIO Toolkit

In addition, more than 90% of participants reported that they had no difficulty navigating the toolkit which was very positive result.

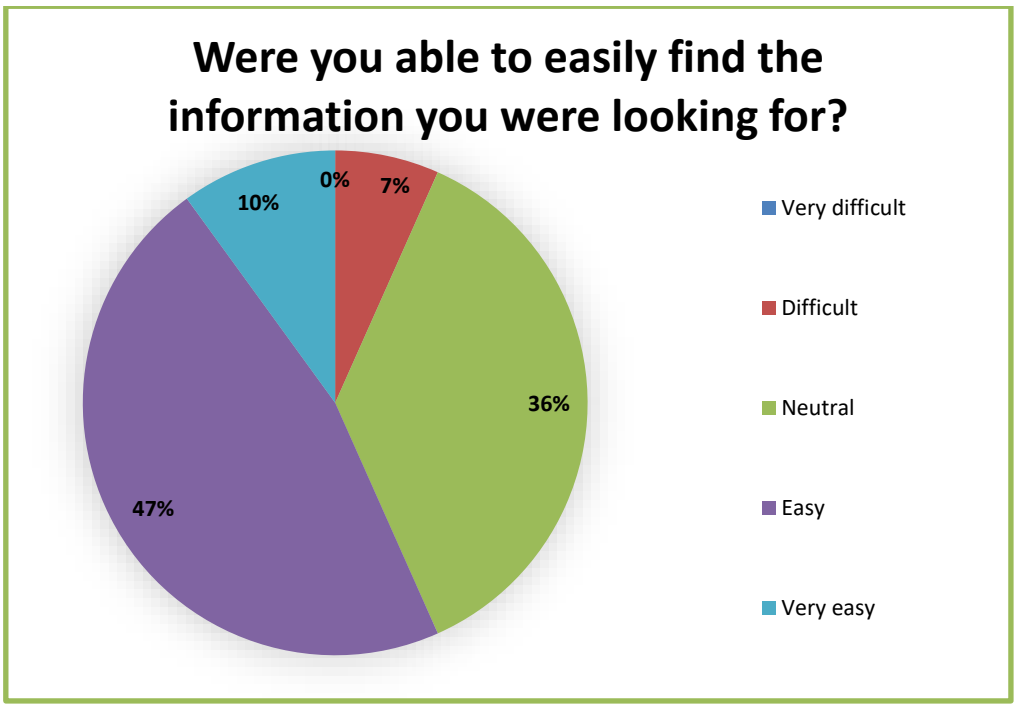


Figure 9: Ease of navigation in MainstreamBIO Toolkit

Moreover, the majority of the users (78%) found the overall design of the MainstreamBIO Toolkit either good or excellent, having only mirror suggestions for improvement.

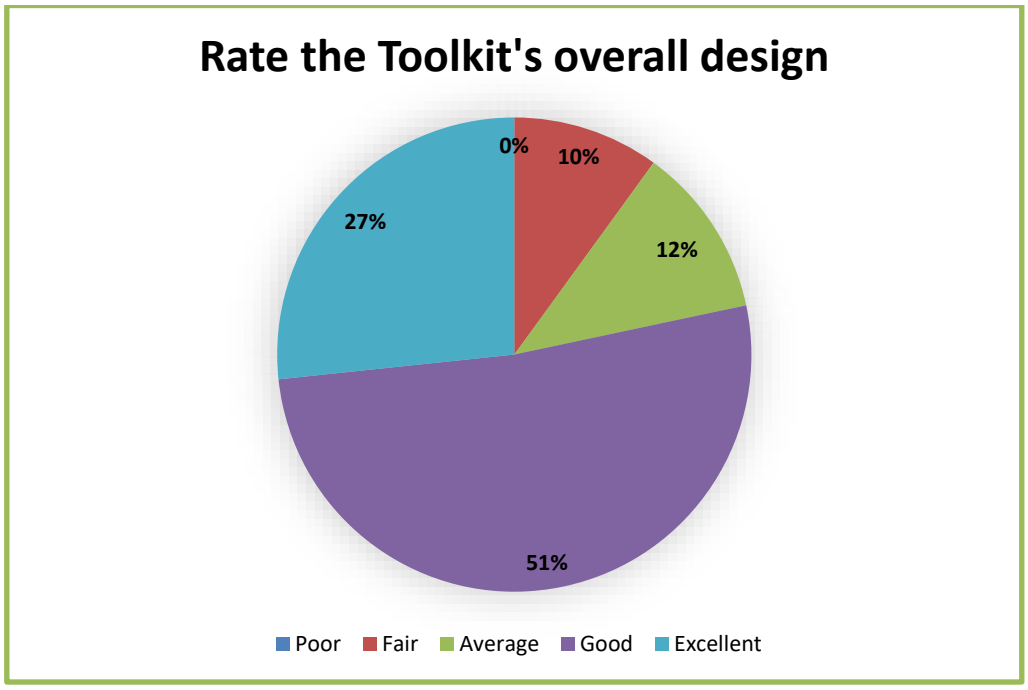


Figure 10: Overall design of MainstreamBIO Toolkit

In particular, the participants were asked if any of the components of the Toolkit has limited or unclear content. According to the results, we can see that there is not any individual tool or Digital toolkit tab that needs significant improvement. However, participants stated, based on their needs, that there are areas for improvement for the Toolkit in general (DSS).

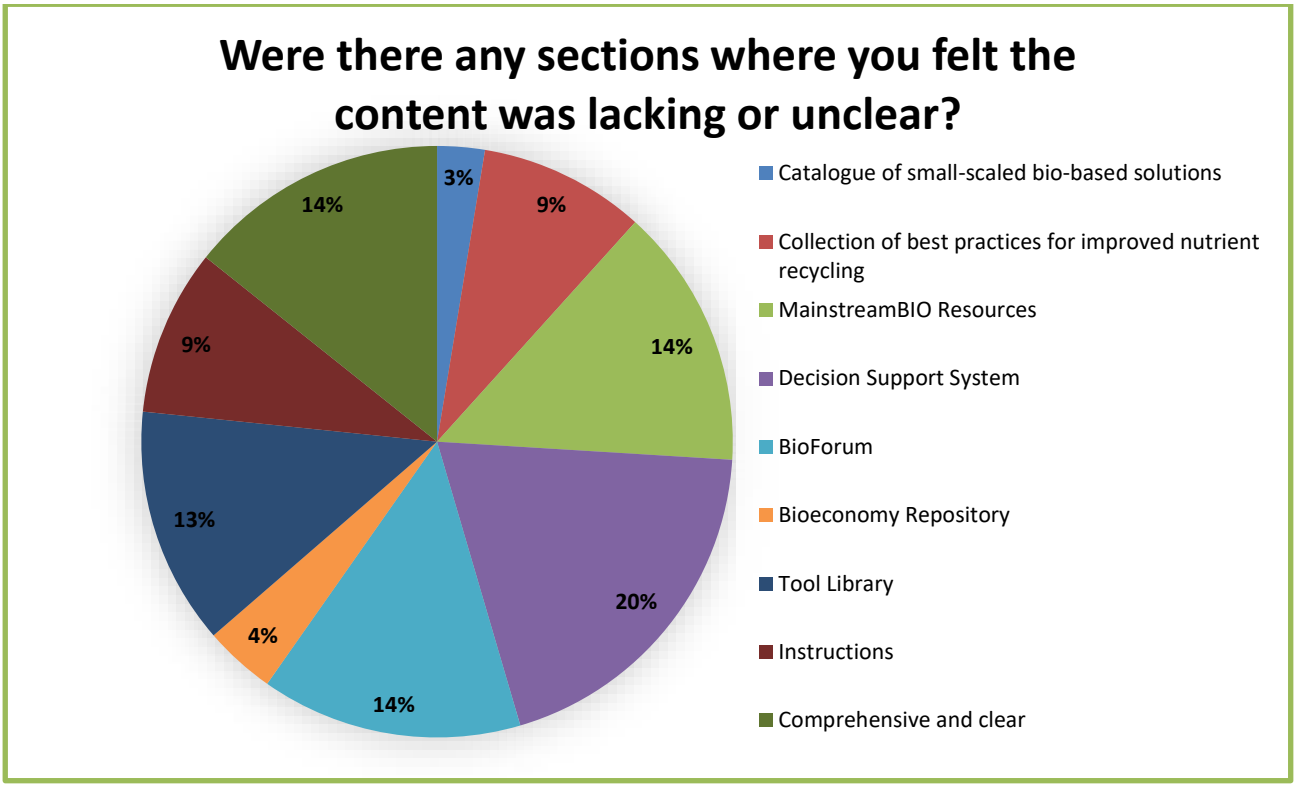


Figure 11: Sections with unclear content in the Toolkit

It can be seen that the initial results were very positive, but significant effort will be needed to attract more users, increase their engagement to the Toolkit, and increase the traffic in specific components of the MainstreamBIO Toolkit (e.g. Bioforum).

6.2.4 *Support of scale-up and transferability (O2d)*

During the 1st Innovation Support round, no sufficient data was collected to extract some results on this sub-objective. The main project activities towards the scale-up and transferability of the bio-based solutions are expected in the 2nd Innovation Support round and will be reported in deliverable D4.6.

6.3 Deploy existing knowledge to increase number of implemented bio-based solutions in rural areas (O3)

The MainstreamBIO partners deployed existing knowledge to successfully increase the number of implemented bio-based solutions in the targeted focal regions. More specifically, they catalogued 16 technology solutions, 34 bio-based innovative business models and 19 social innovations resulting in a total number of 69 solutions, thus exceeding by far the target set by the GA (50 Bio-based solutions/social innovations catalogued).

In addition, 31 good practices for nutrient recycling practices were collected from the regional MIPs, thus accomplishing the target set by the GA (30 Good practices for nutrient recycling collected).

6.4 Build awareness and knowledge on bioeconomy (O4)

Overall, the results of the 1st Innovation Support round on building awareness and knowledge on bioeconomy through targeted webinars and dedicated regional events were very positive. More

specifically, more than 85% of the participants reported that the webinars were extremely supportive of their understanding of the bioeconomy concept.

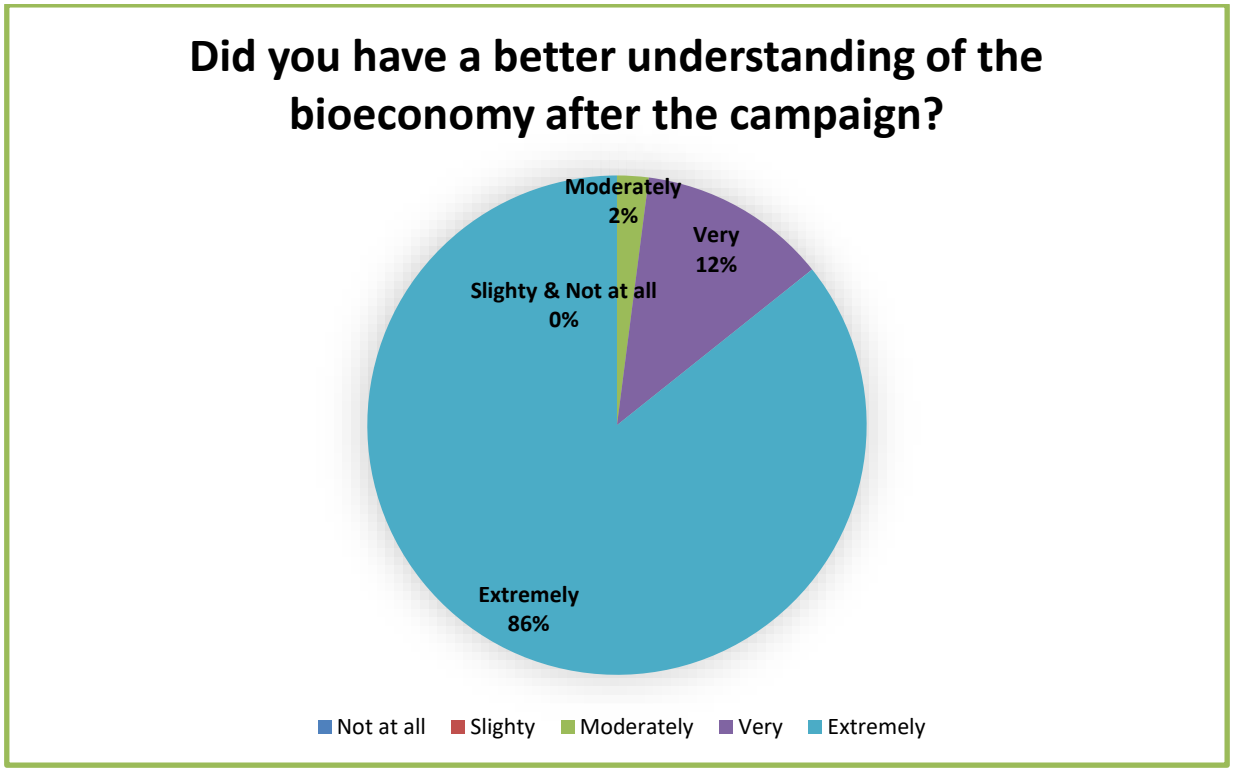


Figure 12: Participants who have better understanding of the bioeconomy after the campaign

Finally, about **50%** of the participants indicated that they would actively seek more information about bioeconomy in the future, while the remaining participants reported that they would try to expand their knowledge of bioeconomy.

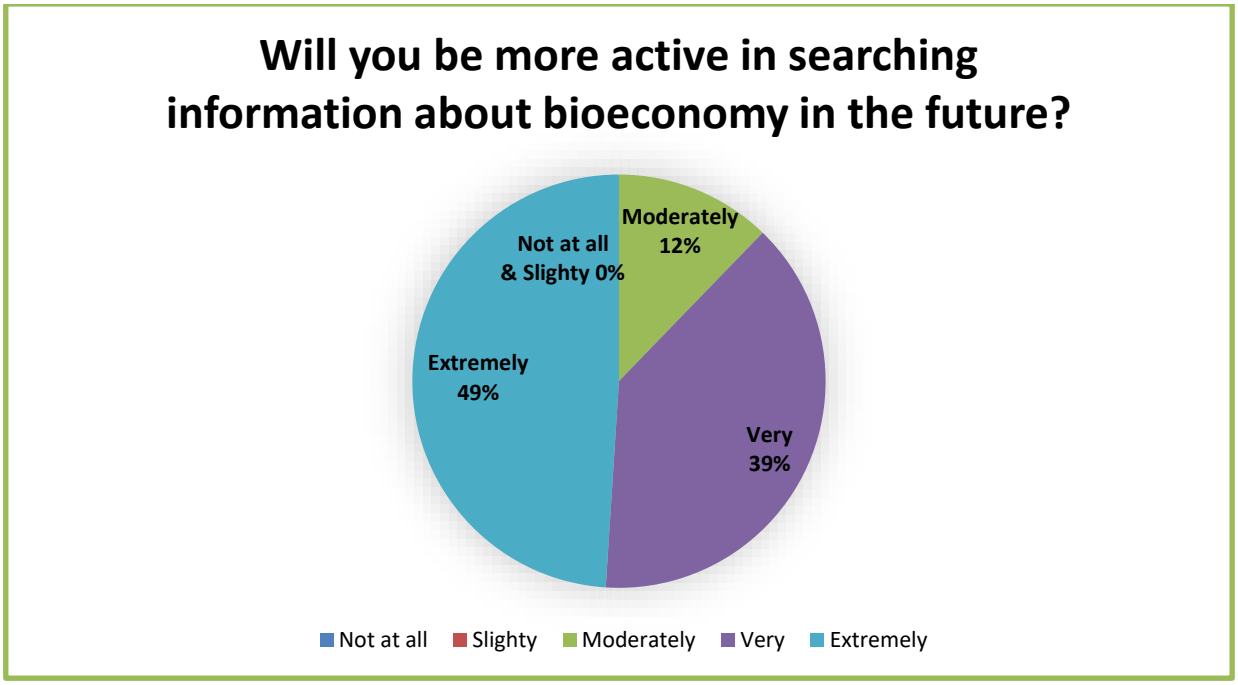


Figure 13: Participants who will be more active in searching information about bioeconomy in the future

7. Recommendations for improvement

The monitoring and evaluation system developed for measuring the performance of regional MIPs requires a clear understanding of the monitoring process, primarily in tracking activities. Our experience in this endeavour highlighted several challenges, especially during data collection. Addressing these challenges is important for the 2nd Innovation Support round as well as for future replications.

Challenges in data collection process

- **Clarification of responsibilities**: Clear definition of roles and responsibilities is crucial. The MIP leaders, Task leaders and activity leaders occasionally lacked clarity about their roles in coherent and explicit data collection. This led to limited data collection from some activities and sometimes incomplete data.
- **Simplified data collection tools**: Even though the data collection methods and the corresponding data collection tools were simple and short, there was a number of "I don't know" responses which shows that some of the respondents did not fully understand the process and the feedback requested from them. Future endeavors will try to simplify even more the requested information in order to collect valuable information from the different project activities.

Recommendations for the next round

- **Provide clear guidelines:** To prevent ambiguity, MIPs and all data collectors should be furnished with clear guidelines regarding their roles in data collection. Periodic training sessions or workshops could be organized to inform the MIPs about the importance and methodology of coherent data collection.
- **Data collection during the events:** To increase the response rate of the event participants to the feedback questionnaires, we will need additional efforts to complete the data collection process before the end of each event. It was noted that after the completion of the events, it was difficult to engage all participants to complete the feedback questionnaire, thus resulting in lower response rates than the actual participation on the events.
- **Regular review and feedback:** Regularly review the data collection process and provide feedback to the MIPs and data collectors (various Task leaders, see Section 4.1). Continuous feedback could help them identify challenges early on and enable the implementation of timely corrective measures.
- **Leave flexibility in terms of the reporting forms:** The MIPs operate in different contexts and have varied set of stakeholders and capacities. The reporting mechanism has to ensure the flexibility to report the results from the various project activities in different ways if needed (short report from the MIP leader, modified data collection tool).

8. Conclusions

The deliverable D4.1 - Report on evaluation of MIP performance - first round, describes the performance monitoring and evaluation system to fuel the iterative improvement of our innovation support services and digital toolkit. The MainstreamBIO project, through the establishment of its MIPs, has played a significant role in cultivating a conducive environment for bringing small-scale bio-based solutions into mainstream across rural areas. The MIPs have actively involved a wide range of key stakeholders by hosting a variety of activities. To effectively capture the diverse activities and their consequent impacts, the MainstreamBIO Monitoring framework embraced a mixed-method data collection approach.

The M&E framework aims to capture the progress towards i) Enhance cooperation of key players and knowledge holders for bio-based innovations in rural areas, ii) Support innovators to accelerate the development of marketable products and services and improve market penetration of bio-based solutions, iii) Deploy existing knowledge to increase number of implemented bio-based solutions in rural areas, and iv) Build awareness and knowledge on bioeconomy. It includes a reliable monitoring framework comprised of 13 data collection methods and 117 indicators to measure the performance of our MIPs and allow for improvements when necessary. This detailed approach, which combined both qualitative and quantitative methods, offered an in-depth insight into the MIPs performance, the perceptions of their stakeholders, and the overall impact of the initiative. This harmonized methodology, resulting from the close collaboration of Q-PLAN with all MainstreamBIO partners, struck a balance: it's deployable by the MIPs while aligning with the Grant Agreement's provisions, and efficiently gauges the initiative's performance and impact.

In addition, the report provides the assessment and evaluation framework along with the results from the activities of the 1st Innovation Support round. The assessment and evaluation activity focused on various project activities during the first round and engaged a wide range of stakeholders, including our AB members. This document highlights a concise report of the activities and their outcomes, offering insights into the MainstreamBIO's achievements and guiding directions for future small-scale bio-based related research.

A broad range of conclusions was drawn from the first round. Firstly, the efforts on engaging key stakeholders through the MIPs had mainly positive results. However, additional efforts are needed in some MIPs to engage more stakeholders and in all MIPs to engage specific stakeholders from targeted groups (civil society, policy makers and biomass producers). Moreover, despite our significant efforts to have gender-balanced MIPs, we will need more efforts to engage more women as well as more young farmers. In addition, our efforts towards providing innovation support services had very positive results in the first round. Additional efforts will be needed though to provide more targeted services that could improve the income diversification and the team-working skills inside the Multi-Actor Partnerships.

Regarding the support on innovators to accelerate the development of marketable products and services and improve market penetration of bio-based solutions, the total number of services provided in the first round almost reached the total target and we will continue to offer tailored support to more innovators through our services. Moreover, the initial results from the MainstreamBIO Toolkit shows a useful and attractive digital tool which needs more efforts to get additional users and increase the engagement of the already existing ones.

Significant efforts on deploying the MainstreamBIO's existing knowledge to increase the number of implemented bio-based solutions in the focal regions were taken, resulting in the identification, classification, description and matching of 69 bio-based solutions, thus exceeding the overall target.

Finally, the first round of awareness raising, and educational campaign had very positive results, gathering numerous interested stakeholders in the webinars (305 participants) which found the series extremely useful and in the in-person events. In addition, the majority of the participants reported that the campaign helped them to build knowledge on bioeconomy. However, improvements on the content of the next campaign will be made, trying to be more tailored to the needs of targeted stakeholders and also capture emerging topics of the bioeconomy in general.

The M&E framework proved to be a valuable tool in the hands of our MIPs, offering meaningful insights on their progress. It is thus our priority to disseminate the work done and to make it available for further use. To that end: i) D4.1 "Report on evaluation of MIP performance - first round" is a public deliverable and is available through the project's website, ii) the main results is an openly shared dataset on Zenodo open repository.

9. Annexes

Annex I - Stakeholder Matrix

MainstreamBIO Aggregate Stakeholders Matrix												
Organisation name	**Demographics**									**Classification**		
Organisation name	Stakeholder Group	Actor within value chain	Relevant existing network	Feedstock to be used	Bio-based Technology used / Experience in Bioeconomy ventures	Region	Country	Age of MIP Member	Gender of MIP Member	Interest Level	Power/ Influence Level	Attention and interaction

Annex II - Report from MIP leaders

Introduction: This is a short report requested from all MIP leaders to evaluate the operation of their respective MIPs every 6 months. The aim of the report is to capture and regularly monitor some Key Performance Indicators (KPIs) of the MainstreamBIO project. Each MIP leader should collect the required data and fill in the report on semester basis. The data will be included in the Semester reports, starting from the 3rd Semester report.

Total estimated duration: 5'

MIP Leader /	[First Name] [Last Name]	MIP	[Country]
Date	[Date]		

It is highly recommended that always the same person files the report to facilitate comparisons between different periods.

Part 1: Questionnaire for MIP

Please reply to the following questions

#	Question	Data
1	How many MIP members dropped out in the last Semester?	
2	How many new MIP members did you engage in the last Semester?	
3	How many MIP members are truly willing to take bioeconomy-related actions?	
4	How many MIP members could be characterized as "prime movers" in bioeconomy?	

#	Question	Not good	Somewhat good	Neutral	Good	Very good
1	How do you perceive the level of trust between MIP members?					
2	How do you perceive the level of presence among MIP members?					

Apart from the above, did your MIP members recently undertake any other initiative to adopt any bioeconomy-related practices? If yes, then could you please describe them? ***Examples of such initiatives could be (i) the adoption of new waste processing methods/techniques; (ii) employ bioeconomy strategy to develop new products; and (iii) introduction of a new bioeconomy related policy. If nothing changed since <month that the last MIP report was filled in>, please write "nothing changed".***

Finally, if you wish, you are welcome to add any other indicators that you would like to monitor.

#	Indicator / Question	Data
1		
2		
3		

Part 2: Questionnaire for MAPs

Please reply to the following questions

#	Question	Data
1	How many stakeholders are taking part in the MAPs?	
2	How many of the MAP members are farmers?	
3	How many of the MAP members are women?	
4	How many business support services were provided to the MAP stakeholders?	
5	How many technical support services were provided to the MAP stakeholders?	
6	How many of the supported cases are also members of the MIP?	
7	How many of the supported cases are actually Multi-actor Partnerships (more than 1 member)?	
8	How many of the supported cases will become Multi-actor Partnerships?	

When will they become MAPs?

Case number	Name of the applicant/candidate case	Data

Annex III - Questionnaire for Capacity Building workshops participants

1. General Impressions:

- How would you describe your overall experience with the website?
  - Very dissatisfied
  - Slightly dissatisfied
  - Neutral
  - Slightly satisfied
  - Satisfied
- Rate the website's overall design.
  - Poor
  - Fair
  - Average
  - Good
  - Excellent
- What emotions or feelings did you associate with the website?
  - Frustration
  - Confusion
  - Indifference
  - Satisfaction
  - Delight

2. Navigation:

- Were you able to easily find the information you were looking for?
  - Very difficult
  - Difficult
  - Neutral
  - Easy
  - Very easy
- Did the navigation menu and structure make sense to you?
  - Not at all
  - A little
  - Neutral
  - Sometimes
  - It is intuitive
- Were there any challenges or confusion in moving from one section of the website to another?
  - Confusing
  - Somewhat confusing
  - Neutral
  - Somewhat clear
  - Clear

3. Visual Design:

- How visually appealing do you find the website?
  - Not at all appealing
  - Slightly appealing

    - Indifference
    - Moderately appealing
    - Very appealing
    - Extremely appealing
- Does the color scheme contribute positively to the overall experience?
    - Not at all
    - A little
    - Neutral
    - Sometimes
    - It contributes positively
- Are the font styles and sizes easy to read?
    - Extremely difficult
    - Somewhat difficult
    - Neither easy nor difficult
    - Somewhat easy
    - Very easy

4. Content:

- Did the content on the website meet your expectations?
    - Didn't meet expectations
    - Somewhat failed to meet expectations
    - Neither more nor less
    - Met expectations
    - Completely met expectations
- Were you able to understand the main message or purpose of the website?
    - Unable
    - Difficult
    - Neutral
    - Understood
    - Fully grasped
- Were there any sections where you felt the content was lacking or unclear?
    - Catalogue of small-scaled bio-based solutions
    - Collection of best practices for improved nutrient recycling
    - MainstreamBIO Resources
    - Decision Support System
    - BioForum
    - Bioeconomy Repository
    - Tool Library
    - Instructions

5. Interactivity:

- Did interactive elements (buttons, forms, etc.) work as expected?
    - Not at all
    - Rarely
    - Sometimes
    - Often
    - Always
- Were you able to easily interact with features like sliders, pop-ups, or dropdown menus?

    - Not at all
    - Rarely
    - Sometimes
    - Often
    - Always
- Were there any interactive elements that you found confusing or unnecessary?
    - Write your answer

6. Mobile Responsiveness:

- How would you rate the website's performance and usability on a mobile device?
    - Poor
    - Fair
    - Average
    - Good
    - Excellent
- Were there any elements that did not display or function well on a smaller screen?
    - Not at all
    - A little
    - Neutral
    - Sometimes
    - It is intuitive

7. Load Time:

- How fast did the website load for you?
    - Very slow
    - Slow
    - Average
    - Fast
    - Very fast
- Were there any delays or issues in accessing different pages?
    - Yes, there were significant delays or issues
    - There were some delays or issues
    - There were minor delays or issues
    - I did not notice any delays or issues
    - No, there were no delays or issues

8. Call to action (Click to procced/Buttons):

- Did you find the buttons clear and compelling?
    - Yes
    - No
- Were you encouraged to take the desired actions on the website?
    - Not at all
    - Somewhat
    - Neutral
    - Quite a bit
    - Very much

9. Accessibility:

- Did the website seem accessible to users with disabilities?

    - No
    - Maybe
    - Yes
    - Other
- Were there any features that could be improved for better inclusivity?
    - No
    - Maybe
    - Yes
    - Other

10. Suggestions for Improvement:

- What specific improvements would you recommend for enhancing the user experience?
    - Write your answer
- Is there anything else you would like to share about your experience with the website?
    - Write your answer

Annex IV - Questionnaire for Business Models validation survey participants

Feedback for MIP Business Model validation

MainstreamBIO has established Multi-actor Innovation Platforms (MIPs) in 7 regions of Europe. These platforms are composed of key regional stakeholders (farmers, agri-food and bio-based industry, government, academia, civil society) that have contributed to characterize the region and shaped the support services that have been provided to different cases along the 7 regions.

Now, MainstreamBIO partners are working on the sustainability of the MIPs in the long term, with the aim of supporting the development and establishment of small-scale rural bio-based business models in each of the study regions. To this end, we are proposing that the **MIPs established** during the project **become consolidated as a cluster or regional association** with different activities and services to help local actors who want to develop or improve their business ideas around the small-scale rural bioeconomy.

Based on the previous characterisation of the region and the needs identified by local actors, for the region XXX (XX) we have devised a cluster/association business model with a specific value proposition and activities. Please, look into the information in the following page and answer the questions below in order to improve the upcoming cluster / association usefulness.

- Do you think the value propositions respond to the needs of the region? Are there any needs that you are missing that need to be covered?
  - <Answer>
- Would you include any additional key activities, key partners or customers (considering that we are targeting people in the rural bioeconomy who can benefit from this cluster)?
  - <Answer>
- Please include any comments/suggestions that come to mind.
  - <Answer>

XXX (Country) MIP

MainstreamBIO regional characterization: XXXX.

Value proposition and activities of the proposed cluster/association: The value proposition of the business model for the XXX MIP focuses on XXX

Value proposition	Key activities (free services)
1. XXX 2. XXX 3. ……	1. XXX ○ YYY ○ YYY 2. XXX ○ YYY ○ YYY ○ YYY X. …..

Annex V - Questionnaire for Awareness raising and Educational events participants

MIP member	[First Name] [Last Name]	Title	
Date	[Date]		
Organization	[Organization Name]		

Introduction: You have been invited to participate in a short questionnaire survey. Your replies will help us to evaluate the performance and impact of the key project activities.

Total estimated duration: 5'

Part 1: Background Information

1) Which of the following stakeholder groups do you associate with?
   - ❑ Biomass producer (farmers, forestry, aquaculture, unions, associations, etc.)
   - ❑ Business (agri-food & bio-based industry, logistics, financing)
   - ❑ Academic/Researcher
   - ❑ Government/policy-maker/public authority
   - ❑ Civil Society
   - ❑ Other, specify _____

2) Your Gender:
   - ❑ Female
   - ❑ Male
   - ❑ Diverse / Non-binary
   - ❑ Rather not to say

3) Your region: _____

4) What is your highest educational degree achieved?
   - ❑ Less than high school diploma
   - ❑ High school diploma
   - ❑ Some college, but no degree
   - ❑ Bachelor's degree or equivalent
   - ❑ Master's degree or equivalent
   - ❑ Doctorate or Professional degree

Part 2: Questionnaire

Please reply to the following questions

#	Question	Not at all	Slightly	Moderately	Very	Extremely	Don't know
1	Did you have a better understanding of the bioeconomy after the campaign?						
2	Did you find the content of the awareness raising & education campaign relevant to your needs?						
3	Will you be more active in searching information about bioeconomy in the future?						
4	Did you find the webinar educational series useful?						

Part 3: Final thoughts

5: What improvements would you suggest complementing the webinar educational series?

6: What improvements would you suggest making the regional awareness raising event more interesting?

Annex VI - Questionnaire for MAP members receiving innovation support services

MIP Leader / Partner providing the service	[First Name] [Last Name]	Title	
Date	[Date]		
Participant (MAP member)	[First Name] [Last Name]		

Introduction: You have been invited to participate in a short questionnaire survey. Your replies will help us to evaluate the performance and impact of the key project activities.

Total estimated duration: 5'

Part 1: Background Information

5) Which of the following stakeholder groups do you associate with?
   - ❑ Biomass producer (farmers, forestry, aquaculture, unions, associations, etc.)
   - ❑ Business (agri-food & bio-based industry, logistics, financing)
   - ❑ Academic/Researcher
   - ❑ Government/policy-maker/public authority
   - ❑ Civil Society
   - ❑ Other, specify _____

6) Your Gender:
   - ❑ Female
   - ❑ Male
   - ❑ Diverse / Non-binary
   - ❑ Rather not to say

7) Your region: _____

8) What is your highest educational degree achieved?
   - ❑ Less than high school diploma
   - ❑ High school diploma
   - ❑ Some college, but no degree
   - ❑ Bachelor's degree or equivalent
   - ❑ Master's degree or equivalent
   - ❑ Doctorate or Professional degree

Part 2: Questionnaire

Please reply to the following questions

#	Question	Very much	Somew hat	Undeci ded	Not really	Not at all	Don't know
1	Do you believe that you had a good collaboration with the service provider during the project?						
2	Do you believe that the support from MainstreamBIO services was satisfactory?						
3	Would you like to receive additional services from MainstreamBIO?						
4	Do you believe that your participation in MainstreamBIO activities improved your income diversification?						
5	Do you believe that the support received from MainstreamBIO services was sufficient?						
6	Do you believe that you participation in MainstreamBIO MAPs improved your team-working skills?						

MAINSTREAM BIO
MAINSTREAMING SMALL-SCALE BIO-BASED SOLUTIONS ACROSS RURAL EUROPE

The project

MainstreamBIO is a Horizon Europe EU funded project, which sets out to get small-scale bio-based solutions into mainstream practice across rural Europe, providing a broader range of rural actors with the opportunity to engage in and speed up the development of the bioeconomy. Recognizing the paramount importance of bioeconomy for addressing key global environmental and societal challenges, MainstreamBIO develops regional Multi-actor Innovation Platforms in 7 EU countries (PL, DK, SE, BG, ES, IE & NL). The project aims to enhance cooperation among key rural players towards co-creating sustainable business model pathways in line with regional potentials and policy initiatives. MainstreamBIO supports 35 multiactor partnerships to overcome barriers and get bio-based innovations to market with hands-on innovation support, accelerating the development of over 70 marketable bio-based products and services. Furthermore, the project develops and employs a digital toolkit to better match bio-based technologies, social innovations and good nutrient recycling practices with available biomass and market trends as well as to enhance understanding of the bioeconomy with a suite of educational resources building on existing research results and tools. To achieve these targets, MainstreamBIO involves 10 partners across Europe, coming from various fields. Thus, all partners combine their knowledge and experience to promote the growth of bioeconomy in a sustainable and inclusive manner.

Coordinator: Q-**PLAN INTERNATIONAL ADVISORS PC (Q-PLAN**)

Partner		Short Name
Q-PLAN INTERNATIONAL	Q-PLAN INTERNATIONAL ADVISORS PC	Q-PLAN
MTU Ollscoil Teicneolaíochta na Mumhan Munster Technological University	MUNSTER TECHNOLOGICAL UNIVERSITY	MTU
WAGENINGEN UNIVERSITY & RESEARCH	STICHTING WAGENINGEN RESEARCH	WR
IUNG Institute of Soil Science and Plant Cultivation State Research Institute	INSTYTUT UPRAWY NAWOZENIA I GLEBOZNAWSTWA, PANSTWOWY INSTYTUT BADAWCZY	IUNG
RI. SE	RISE PROCESSUM AB	PROC
AGRARIAN UNIVERSITY PLOVDIV	AGRAREN UNIVERSITET - PLOVDIV	AUP
Food & Bio Cluster Denmark	FBCD AS	FBCD
innovarum	EURIZON SL	INNV
DRAXIS ENVIRONMENTAL TECHNOLOGIES	DRAXIS ENVIRONMENTAL SA	DRAXIS
WHITE	WHITE RESEARCH SPRL	WHITE

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