



# MAINSTREAM BIO

MAINSTREAMING SMALL-SCALE BIO-BASED SOLUTIONS ACROSS RURAL EUROPE

## D2.5

# MainstreamBIO digital toolkit – initial version

DRAXIS

5/6/2024



Funded by  
the European Union

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## ABBREVIATIONS

<b>MIPs</b>	Multi-Actor Innovation Platforms
<b>DSS</b>	Decision Support System
<b>WR</b>	Wageningen University & Research
<b>GDPR</b>	General Data Protection Regulation
<b>EU</b>	European Union

## Executive summary

MainstreamBIO is a HORIZON Coordination and Support Actions project funded by the European Union under grant agreement 101059420. It started in September 2022 and will have a duration of 36 months (August 2025). The project aims to co-develop innovation support services and digital tools to build awareness, understanding and capacity to uptake small-scale bio-based solutions in line with market demand and regional specificities. This report presents the work performed related to the development of the MainstreamBIO digital toolkit. The digital toolkit is a product of extensive research and implementation efforts encompassed within Work Package 2.

This current document is D2.5 MainstreamBIO digital toolkit of the MainstreamBIO project. Led by DRAXIS, this Task is dedicated to the development of the MainstreamBIO digital toolkit, envisioned as an application that will serve as a comprehensive online platform. It aims to provide individuals interested in the bioeconomy with a dynamic digital environment where they can educate themselves and gain access to the tools, knowledge, and resources necessary to make a tangible impact in the real world. Moreover, the toolkit is tailored to enhance the research and professional endeavors of those already immersed in the field of bioeconomy, empowering them with cutting-edge resources and insights to advance their work further.

The digital toolkit offers a user-friendly online platform that aims to facilitate the adoption of small-scale bio-based solutions across rural Europe. The toolkit consists of seven (7) main components:

- **Catalogue of small-scale bio-based technologies, business models and social innovations**, for cross-case comparison and assessment of opportunities for business endeavours.
- **Collection of best practices for improved nutrient recycling**, to successfully manage nutrients and organic matter recycling back to soils.
- **Decision Support System**, which helps users match the available biomass and waste streams with small-scale bio-based technologies, business models and social innovations.
- **Bioeconomy Repository**, whose purpose is to aggregate educational material from such bio-based projects and raise awareness on bioeconomy educational resources.
- **Tool Library**, which provides users with access to many bioeconomy tools (bioresource mapping, catalogues, side stream value tool, etc.) from other projects relative to bioeconomy.
- **BioForum**, to communicate, exchange ideas, solutions and good practices and connect with other members of the Multi-actor Innovation Platforms.
- **Instructions**, delivering a comprehensive introduction and clear instructions on optimal toolkit utilization through both video and textual formats.

Finally, this document outlines the fully functional webpages developed along with the wireframes and mockups. It explains the purpose of each page, its functionality, and the objectives it aims to achieve. The development process was highly iterative, guided by feedback and research insights. Beginning with wireframes, and then creating mockups to visualize the user interface, incorporating visual design elements and interactive features.

# 1. Introduction

One of the main objectives of MainstreamBIO is the development and employment of a digital toolkit that effectively aligns bio-based technologies, social innovations, and sustainable nutrient recycling practices with the existing biomass and market trends. Additionally, it aims to enhance comprehension of the bioeconomy through a set of educational resources, building upon existing research findings and tools.

## 1.1 Description of Task 2.5 in Grant Agreement

The development and maintenance of MainstreamBIO digital toolkit is included in *Task 2.5: Development, upgrade and integration of digital tools in the MainstreamBIO digital toolkit* leading by DRAXIS and supporting by the entire consortium of the project.

The description of the task as described in the Grant Agreement is:

*“DRAXIS will develop and maintain the MainstreamBIO digital toolkit during the project. WR will be responsible for providing the necessary material for the implementation of the decision support system developed under Task 2.4 with support from INNV (for available business models), IUNG (for nutrients recycling practices), WHITE (for social innovations) and MTU (for education and awareness raising practices). Q-PLAN will be responsible for collecting the material for the Bioeconomy Repository and Tool Library, using as a starting point the respective TRANSITION2BIO awareness, communication and education toolkits. The digital toolkit (D2.4) will be fine-tuned based on data collected from its practical use across each of the project’s two innovation support rounds.”*

The MainstreamBIO digital toolkit holds a significant importance for the project's progress and serves as a **crucial milestone**. Consequently, DRAXIS, with the support of all the partners, has devised a plan and timeline to ensure the efficient and on time development of the toolkit.

## 1.2 Approach and methodology

The development approach followed a three-step methodology, beginning with the analysis phase subsequent to the elicitation of user requirements, which was conducted through a comprehensive 50-question survey.

Our initial step involved crafting mockups using Whimsical, the details of which can be accessed in the ANNEX II. Following this, the first drafts underwent a rigorous review process, incorporating feedback received on these preliminary designs, which were shaped by user stories and supplementary materials like catalogues.

Transitioning from the conceptual stage to a more visually refined design, Figma was utilized, a widely recognized and extensively utilized design application, which can be found in the ANNEX II. Figma proved instrumental in helping us visualize the application's aesthetics, content, and navigation across its diverse functionalities.

Finally, the importing feature was used to integrate the designed pages from Figma into bubble.io to initiate the development phase of the toolkit. Bubble.io stands out as a no-code platform, renowned for its capability to facilitate the rapid creation of platforms like ours. It empowers us with high scalability, ease of use, and the flexibility to implement swift changes while ensuring that the end result is both functional and visually appealing.



## 1.3 Action Plan

The action plan in [Table 1](#) was presented at kick-off meeting in Thessaloniki and updated at 2<sup>nd</sup> project meeting in Cork and at the 3<sup>rd</sup> project meeting in Almere.

*Table 1: Action plan for Task 2.5 was presented at kick-off meeting and updated at 2<sup>nd</sup> and 3<sup>rd</sup> project meeting.*

No.	Action point	Who	By When	Month
1	Align with sister projects on synergies and avoiding overlaps regarding the toolkits	DRAXIS, WR, Q-PLAN	15/4/23	M8
2	Receive catalogue of small-scale bio-based technologies, business models and social innovations	WR, WHITE, INVV	30/4/23	M8
3	Receive catalogue of the collected nutrient recycling practices	IUNG	30/4/23	M8
4	Online meetings with material providers for the design and functionality of the toolkit	DRAXIS, WR, INVV, WHITE, MTU, Q-PLAN, IUNG	20/6/23	M10
5	Receive material for Bioeconomy Repository	Q-PLAN	30/6/23	M10
6	Results from the questionnaire for user requirements	DRAXIS	30/6/23	M10
7	Discuss implementation of multi-criteria decision model in Toolkit	WR, INN V	30/6/23	M10
8	Receive results for the MainstreamBIO digital toolkit functionality from the participants in the co – creation workshops	INVV	15/7/23	M11
9	Delivery 1 <sup>st</sup> design multi-criteria decision model	WR, INN V	20/7/23	M11
10	Receive outcomes from WP1, which will be included in the toolkit	MTU, WHITE	31/7/23	M11
11	Creation of 1 <sup>st</sup> MainstreamBIO digital toolkit's functional design	DRAXIS	31/7/23	M11
12	MainstreamBIO digital toolkit's development – 1 <sup>st</sup> prototype	DRAXIS	30/11/23	M15
13	1 <sup>st</sup> innovation support round	All partners	31/12/23	M16

14	Delivery of toolkit's 1 <sup>st</sup> version	DRAXIS	29/2/24	M18
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## 1.4 Content of deliverable

This deliverable outlines the development, content, and deployment of the initial version of the MainstreamBIO digital toolkit under T2.5. Here is the link to access the newly launched MainstreamBIO digital toolkit, now available to the public: <https://mainstreambio-digital-toolkit.eu/>

## 2. MainstreamBIO Digital Toolkit

### 2.1 Home Page (Pop-up)

As shown in Figure 1, the user is welcomed by an introductory pop-up presenting vital information about the digital toolkit. This pop-up appears only once during the user's visit to the [toolkit](#).

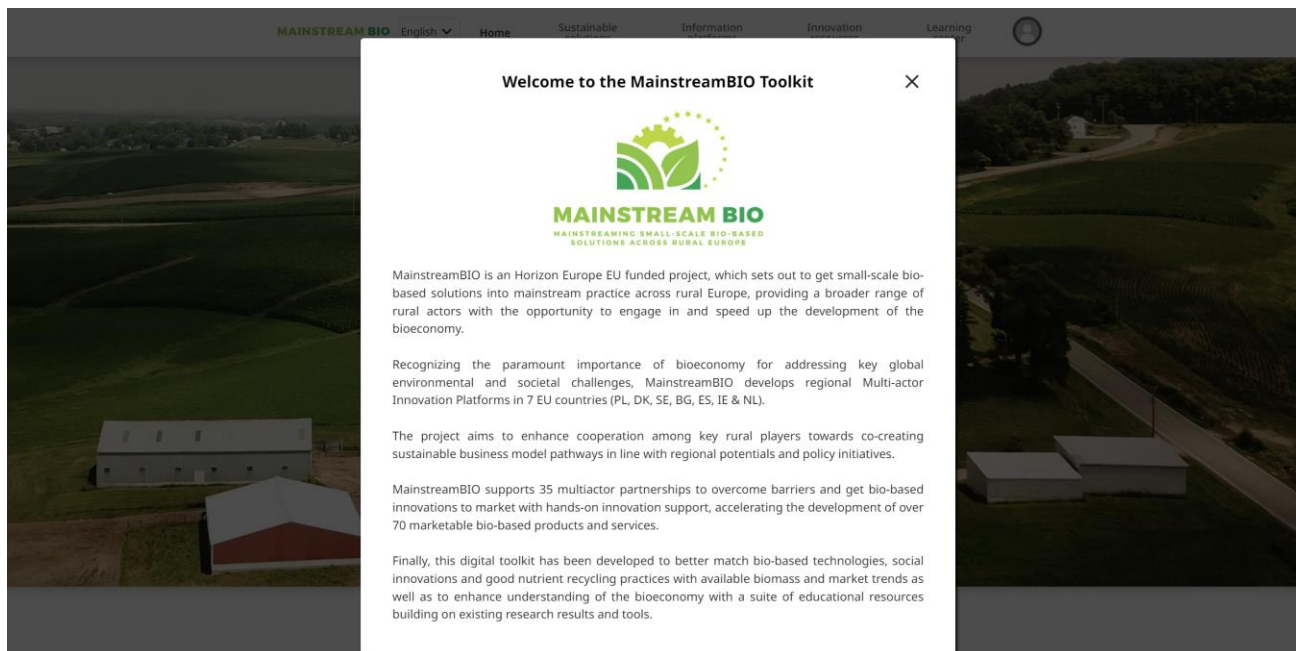


Figure 1: Home Page (Welcoming Pop-up)

### 2.2 Home Page

Upon closing the pop-up using the "X" button located at the top right corner or by clicking outside its contents, the user lands to the [home page](#). In the header section, users are provided with several options. They can select their preferred language and explore the four main pillars of the toolkit: Sustainable Solutions, Information Platforms, Innovation Resources, and the Learning Center. These sections serve as gateways to all seven functionalities of the toolkit. Additionally, users can access the login or signup feature to create their own decision support systems (DSS) or participate in discussions on the BioForum. On the bottom of the page there is the "Find Out More" button, users can either scroll down or click this button to obtain a detailed overview of each functionality.

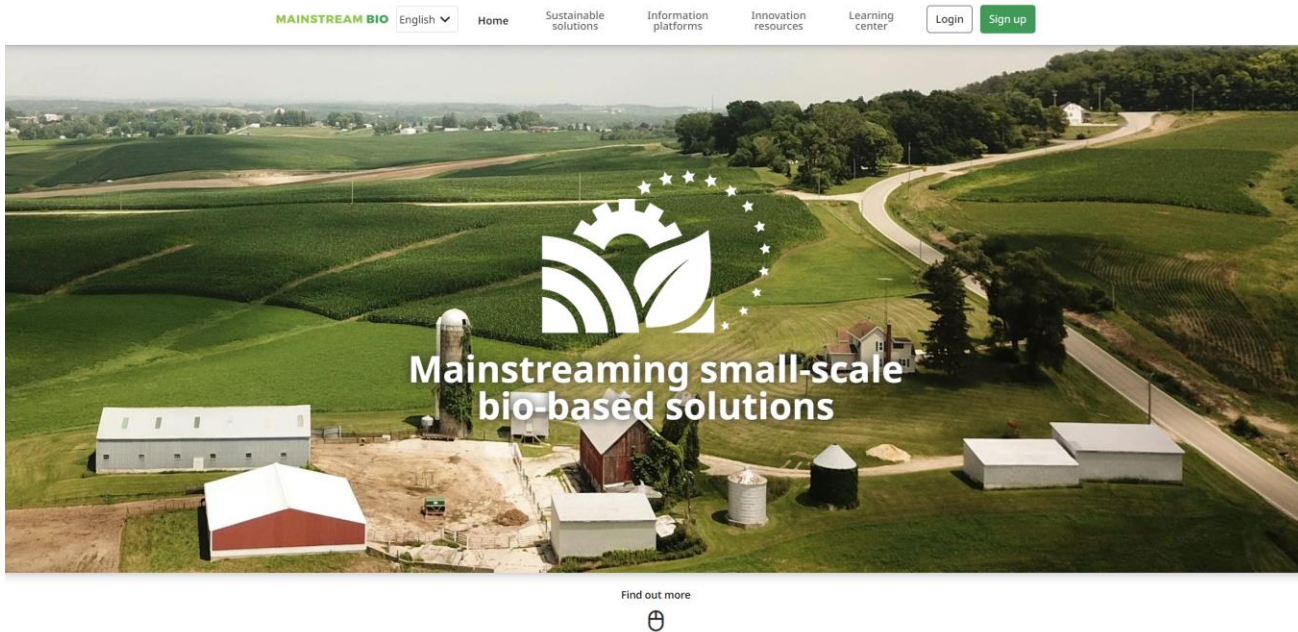


Figure 2: Home Page

## 2.3 Header (Sustainable solutions)

The Sustainable Solutions section of the toolkit encompasses three essential functionalities: the catalogue of small-scale bio-based solutions, nutrient recycling best practices, and the MainstreamBIO resources. Each functionality is accompanied by a brief description outlining its purpose and relevance within the toolkit.

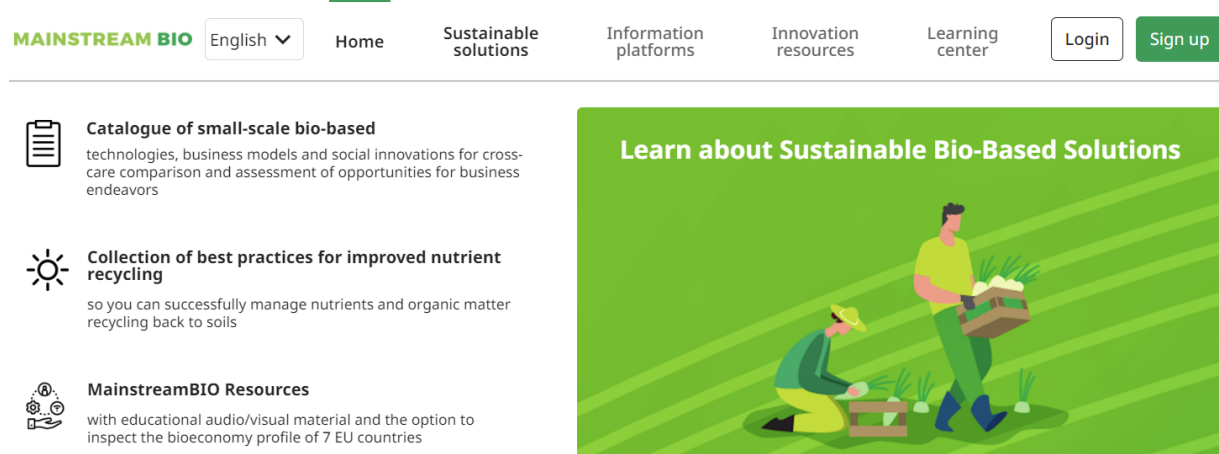


Figure 3: Sustainable solutions section (Header)

## 2.4 Header (Information platforms)

The Information platforms section houses the two primary features of the toolkit: the Decision Support System and the BioForum. These crucial components provide users with essential tools for decision-making and collaborative discussion within the bioeconomy community.

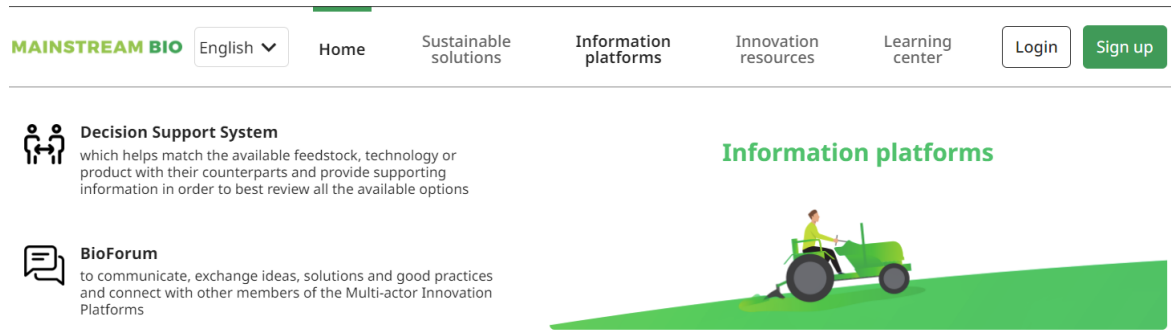


Figure 4: Information platforms section (Header)

## 2.5 Header (Innovation resources)

The Innovation resources section comprises the Bioeconomy Repository and the Tool Library, providing users with essential resources and tools for innovation in the field.

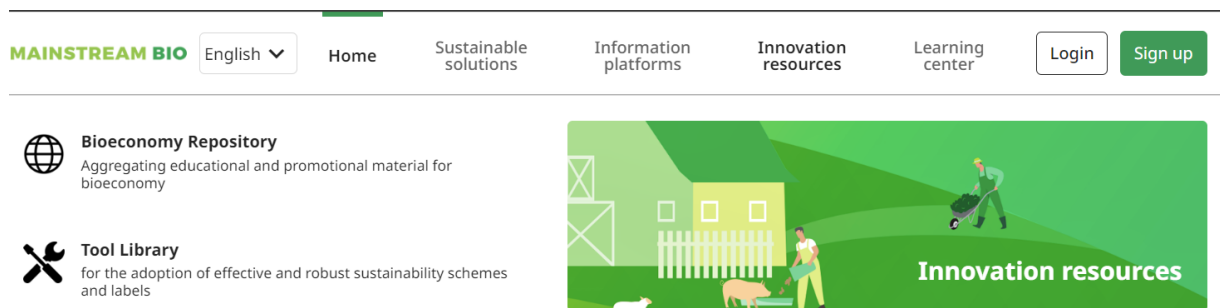


Figure 5: Innovation resources section (Header)

## 2.6 Header (Learning center)

Finally, the Learning center serves as the hub for instructional resources, featuring the Instructions page. Additionally, it has the potential to host future webinars offered by our esteemed partners.

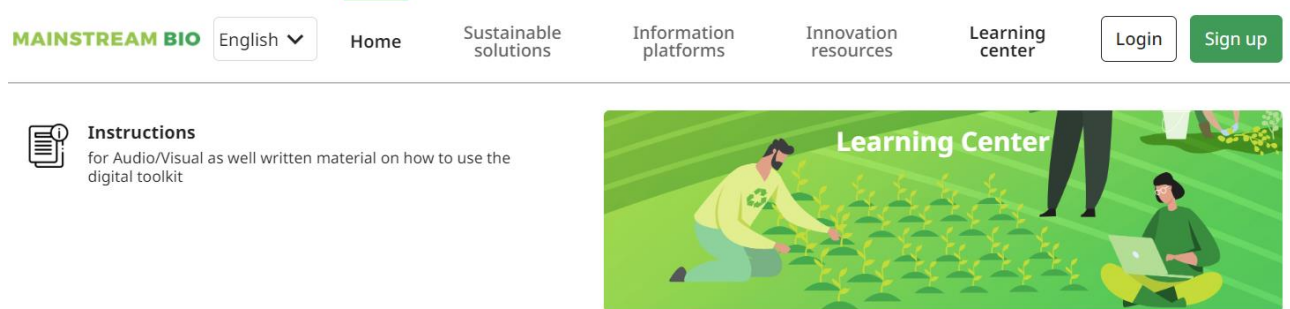


Figure 6: Learning center section (Header)

## 2.7 MainstreamBIO Login/Signup Page

Users can effortlessly log in using their email address and password. Additionally, if they've forgotten their password, they can easily reset it by clicking the "Forgot your password?" button. For those who do not have an account yet, they simply need to provide their desired username, email address, password, and confirm the password.





Figure 7: MainstreamBIO Log in Page



Figure 8: MainstreamBIO Sign up Page

## 2.8 Home page (Sustainable solutions)

On the home page's Sustainable solutions section, users will find a concise overview along with direct access to select the specific functionality they desire, between the Catalogue of small-scaled bio-based solutions, Nutrient recycling practices and MainstreamBIO Resources.

## Sustainable solutions

This section covers a wide range of small-scale bio-based technologies, innovative business models, and social solutions. It also includes a collection of practices that aim to recycle nutrients and organic matter back to soils. Finally, it provides audio-visual resources and bioresources from 7 EU rural communities for a more sustainable future.

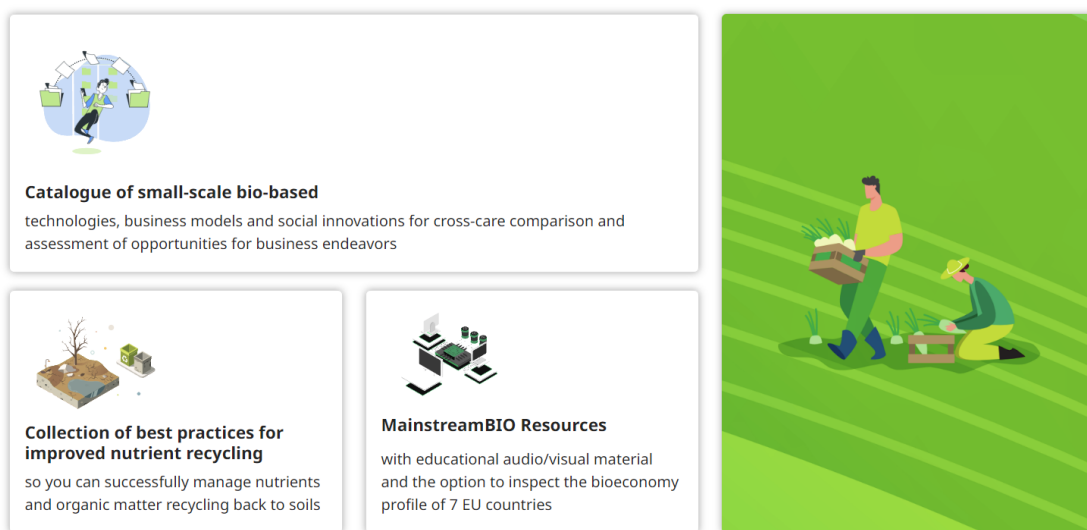


Figure 9: Home Page (Sustainable solutions)

## 2.9 Home page (Information platforms)

The Information platforms section offers users the option to navigate to either the Decision Support System or the BioForum within the toolkit.

### Information platforms

This section includes the decision support system, which assists in making informed choices, and bioforum, online platforms for discussion and collaboration within the field of biotechnology and related topics.

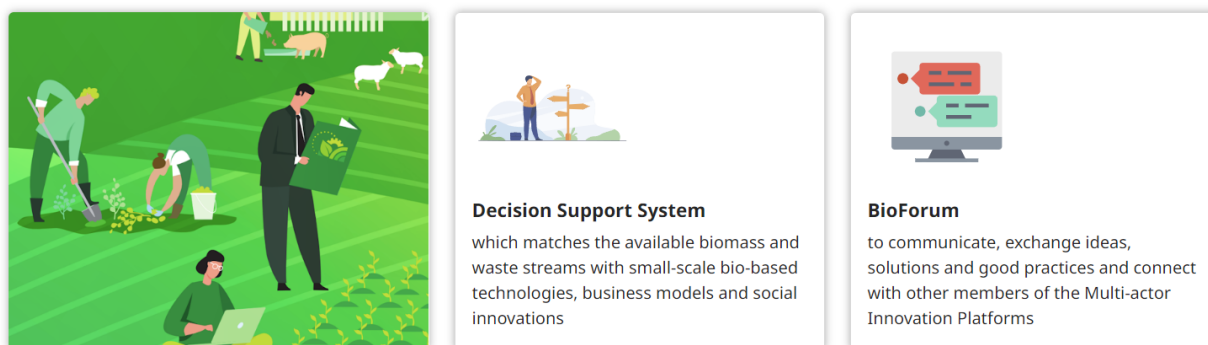


Figure 10: Home Page (Information platforms)

## 2.10 Home page (Innovation resources)

On the home page's Innovation resources section, users will discover the Bioeconomy Repository and the Tool Library.

## Innovation resources

This section comprises a repository of resources and a library of tools dedicated to advancing the bioeconomy, offering valuable information, data, and software to support research, development, and sustainable practices in the field of biotechnology and related industries.

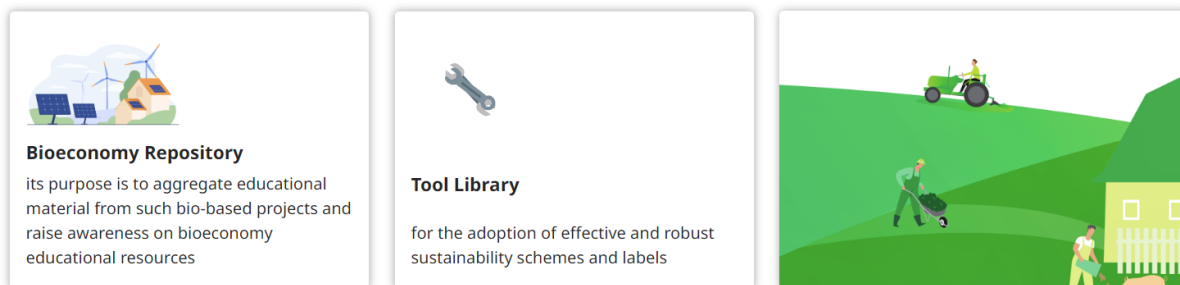


Figure 11: Home Page (Innovation resources)

## 2.11 Home page (Partners)

In this section of the home page, users can simply click on any of the partner buttons to be redirected to their respective webpages.

### Partners

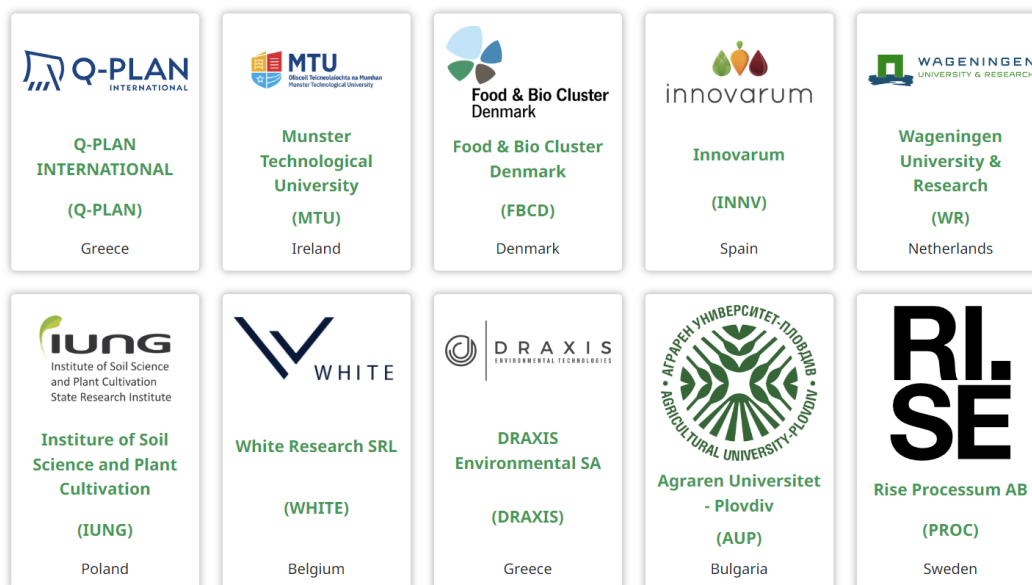


Figure 12: Home Page (Partners)

## 2.12 Footer

In the footer of the digital toolkit, users can locate the MainstreamBIO project logo. Clicking on this logo will redirect users to the official website of the project. Positioned centrally within the footer is the appropriate disclaimer indicating that this project is funded by the European Union. To the right of the footer, users will find the project's social media links along with a feedback section. This feedback

section allows any user to provide valuable input to help us enhance, expand, and rectify any aspects of the toolkit. Finally, at the bottom of the header, the copyright section can be found.



Figure 13: Footer

## 2.13 Catalogue of small-scale bio-based solutions (Selection Table)

The [Catalogue page](#) serves as a comprehensive repository of diverse bio-based technologies, meticulously categorized into biochemical, mechanical, and thermomechanical domains. Encompassing innovations such as aerobic digestion, blending or mixing, combustion, and thirteen others, it actively advocates sustainable practices, elevates environmental consciousness, and promotes technological diversity. Furthermore, users have the opportunity to explore thirty-four distinct business models originating from eighteen different countries. This extensive collection offers a panoramic view of global markets, inspiring innovation and furnishing strategic insights. Notably, users can refine their search criteria by description keyword or by country, thus enhancing their browsing experience. In the Catalogue section, users can immerse themselves in eighteen social innovations hailing from fourteen countries. These initiatives embody community-driven approaches that prioritize both environmental stewardship and social impact. This section facilitates comparative analysis, enabling users to evaluate the strengths and weaknesses of each solution comprehensively. Additionally, users can employ filters based on description keyword, country, or keyword for enhanced search precision.

Code	Title	Brief description
B1	Aerobic conversion (composting)	An aerobic conversion process relies on microorganisms that thrive under aerobic conditions i.e. where plenty of oxygen is available and a sufficient amount of feedstock is present.
B2	Anaerobic digestion	Anaerobic digestion is a series of biological process in which micro-organisms break down organic material under oxygen-free conditions.
B2b	Upgrading biogas	During the upgrading process all contaminations are filtered from the biogas and it is dried. Also almost all of the carbon dioxide is selectively extracted.
B3	Fermentation	Fermentation is a process in which micro-organisms (bacteria, yeasts, moulds) are used to convert organic material into alcohol, acids or hydrogen, for instance and carbon dioxide.
B4	Insect-based bioconversion	Insect-based bioconversion also known as insect farming is based on the selection of insect species e.g. Black Soldier Fly (BSF) larvae, house fly maggots, mealworms, and grasshoppers crickets and different rearing substrates.
B5a	Cultivation Mushrooms	The production system of mushrooms.
B5b	Cultivation Algae	The production system of algae.

Figure 14: Catalogue of small-scale bio-based solutions (Selection Table – Technologies)

CATALOGUES

MAINSTREAM BIO English Home Sustainable solutions Information platforms Innovation resources Learning center Login Sign up

Catalogues of small-scale bio-based solutions

Technologies Business models Social innovations

Please decide whether you want to search by code, by typing a description or by country

Type description keyword Filter by country Type keyword

Code	Title	Brief description	Country	Keywords
C1.1	Pindos	This Greek company converts poultry manure into organic fertilizers using aerobic conversion.	Greece	Fertilizer, Manure, Poultry, Broiler
C1.2	Pedrin	This Spanish company converts goat and sheep manure into organic fertilizers using aerobic conversion.	Spain	Fertilizer, Manure, Goat, Sheep
C2.1	Blowert	This German company converts grass juice and food residues into biogas through anaerobic digestion. Biogas is converted into electricity.	Germany	Biogas, Grass juice, Food residues, Electricity, Heat, Bioenergy
C2.2	HoSt	This Dutch company uses anaerobic digestion to convert cattle manure into biogas. Three products are derived: biomethane, electricity and nitrogen-rich fertilizer.	The Netherlands	Anaerobic digestion, Manure, Biogas, Biomethane, Small scale, Natural gas, Farm
C2.3	Pilze-Nagy	This Hungarian company uses anaerobic digestion to convert spent mushroom substrate and other agri-food wastes into biogas. Besides electricity, they also obtain solid and liquid fertilizers.	Hungary	Electricity, biogas, Anaerobic digestion, Spent mushroom substrate, Oyster

Figure 15: Catalogue of small-scale bio-based solutions (Selection Table – Business models)

CATALOGUES

MAINSTREAM BIO English Home Sustainable solutions Information platforms Innovation resources Learning center Login Sign up

Catalogues of small-scale bio-based solutions

Technologies Business models Social innovations

Please decide whether you want to search by country, by typing a description or by typing a keyword

Type description keyword Filter by country Type keyword

Code	Title	Brief description	Country	Keywords
D1	L'Atelier Paysan	This cooperative aims to empower farmers by promoting technical and technological sovereignty through an open source resource platform for farm production tools, which provides access to online resources, videos, trainings, and knowledge exchange sessions.	France	Awareness raising, Technology utilization, Online resources
D2	Organic Food Valley (EkoLubelszczyzna)	This social innovation project aims to develop a cooperative network between different actors involved in the production, processing, and marketing of organic food and eco-products/services.	Poland	Jobs generation, Access to network
D3	Rural HUB	The Rural HUB connects socially responsible individuals and organizations with traditional farmers through an educational complex and co-working space, offering comprehensive programs for sustainable farm development in rural areas.	Serbia	Financial support, Jobs generation, Education / Training
D4	ARDAC	The reforestation and sustainable forest management project aimed to address deforestation and local development, with an innovative aspect being the management of non-wood forest products from the biggest laurel forest in Lebanon.	Lebanon	Jobs generation, Technology utilization, Public participation

Figure 16: Catalogue of small-scale bio-based solutions (Selection Table – Social innovations)

## 2.14 Catalogue of small-scale bio-based solutions (Specific)

On the specific technology page, users are provided with a succinct overview of the technology they have selected, accompanied by detailed information on potential feedstock, technology specifications, associated product(s), and references for further exploration. As well as downloading all of its information in PDF format through the download button.



Figure 17: Catalogue of small-scaled bio-based solutions (Specific - Technology)

On the specific business model page, users have the capability to review detailed information including feedstock analysis, technological specifications, impact assessment, and reference materials. As well as downloading all of its information in PDF format through the download button.

Figure 18: Catalogue of small-scaled bio-based solutions (Specific – Business model)

Finally, users can explore a specific social innovation in-depth, examining its activities, the stakeholders involved, its impact on bioeconomy development, and its broader social implications. As well as downloading all of its information in PDF format through the download button.

### L'Atelier Paysan

This cooperative of small-scale farmers, employees, and agricultural development organizations is a social innovation dedicated to empowering farmers by disseminating agricultural knowledge and promoting technical and technological sovereignty. Through an open source resource platform for farm production tools, the collective aims to collectively develop tools adapted to the regional agro-ecological practices. This platform provides access to online resources, videos, trainings on construction and autonomy, and knowledge exchange sessions.

**Activities**

**Actors involved**

**Impact for bioeconomy development**

**Social impact**

### Activities

The cooperative supports farmer-led research and development, disseminates open source materials for organic farming, and leads training sessions to create self-sufficient farming systems. The tools developed are adapted to the context in which they are used in concrete terms. The cooperative also encourages farmers to think innovatively and come up with sustainable solutions to the problems they face.

Back

Download

Figure 19: Catalogue of small-scaled bio-based solutions (Specific – Social innovatio)

## 2.15 Nutrient Recycling Practices (Selection Table)

The page of [Nutrient Recycling Practices](#) features a curated selection of 31 agricultural practices, meticulously designed to advance sustainable agricultural and environmental methodologies. Through the consolidation of proven strategies, this collection offers invaluable insights into optimizing nutrient management, minimizing waste, and maximizing resource efficiency. Catering to the needs of farmers, environmentalists, and policymakers alike, it serves as a definitive roadmap for the adoption of practices aimed at not only augmenting crop yields but also mitigating environmental footprints. By placing a strong emphasis on innovation and drawing from successful implementations, this compilation functions as a knowledge reservoir, facilitating the dissemination of efficacious strategies to address global challenges in nutrient cycling within agriculture. Ultimately, its overarching objective is to contribute to the cultivation of a more resilient and environmentally conscientious food production system.

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### Nutrient Recycling Practices

You can further select by clicking on the topics below

Code	Title	Brief description
P1	Algae cultivation	Algae cultivation on manure and digestate offers a sustainable way to utilize excess resources, capture CO <sub>2</sub> , and produce high-protein biomass. While it's ideal for on-farm applications, the high cost and legal restrictions in the Netherlands currently limit its feasibility for direct livestock feed. <span style="float: right; background-color: #2e8b57; color: white; padding: 2px 5px; border-radius: 3px;">Read more</span>
P2	Ammonia stripping & Scrubbing	Ammonia stripping and scrubbing is a treatment method to reduce NH <sub>3</sub> emissions for regulatory compliance. It involves altering pH and temperature to shift the equilibrium of NH <sub>3</sub> to NH <sub>4</sub> <sup>+</sup> and then separating the NH <sub>3</sub> gas, which is subsequently dissolved in an acidic liquid to produce N minerals like ammonium sulfate or ammonium nitrate. Commercial technologies are available for this process. <span style="float: right; background-color: #e6b800; padding: 2px 5px; border-radius: 3px;">Read more</span>
P3	Anaerobic digestion (WUT)	The Green Generation Anaerobic Digestion plant processes 23,000 tons of food waste and pig slurry annually to produce biogas and organic fertilizer rich in nutrients (nitrogen, phosphorus, and potassium). Local farmers use it, some even replacing chemical fertilizers, but due to high water content, it's spread with traditional equipment, with discussions about drying or pelletizing, although current returns don't justify the investment. <span style="float: right; background-color: #e6b800; padding: 2px 5px; border-radius: 3px;">Read more</span>
P4	Anaerobic digestion (WR)	Anaerobic digestion is a fermentation process that converts organic matter like manure and crop residues into biogas (CH <sub>4</sub> ). This biogas can be upgraded for the gas network or used for heat, offering benefits to farmers due to biogas production and nutrient-rich digestate suitable for precise field application. <span style="float: right; background-color: #e6b800; padding: 2px 5px; border-radius: 3px;">Read more</span>
P5	Appropriate manure application	Animal manure contains valuable crop nutrients like N, P, and K, but applying it solely to meet one nutrient's needs may lead to over or under-application of others, necessitating commercial fertilizer use. Properly managed manure application offers environmental benefits, such as

NUTRIENT  
RECYCLING  
PRACTICES

Figure 20: Nutrient Recycling Practices (Selection Table)

## 2.16 Nutrient Recycling Practices (Specific)

Upon selecting a specific [Nutrient recycling practice](#), users gain access to a comprehensive overview comprising its description, objectives, contextual relevance, key elements, and processes. Additionally, users can delve into the intricacies of practice implementation, associated legislation, and a curated list of references for further exploration and validation. As well as downloading all of its information in PDF format through the download button.

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### Anaerobic digestion (WR)

Anaerobic digestion is the fermentation process of organic matter in the absence of oxygen. Feedstocks are manure, crop residues or any other form of organic matter. The product of anaerobic digestion is biogas (CH<sub>4</sub>). Biogas needs to be upgraded to be able to use it in our gas network. The biogas can also directly be burned and used as heat. Anaerobic digestion happens at different levels, from farm to regional levels, to even small scale with kitchen scraps. The technique is widely used and it's even more interesting in recent light, with rising gas and energy prices. The main advantage for farmers is the production of biogas. The digestate (the residual slurry after digestion) is still rich in nutrients and can be directly spread onto the field. It can also be separated into a liquid and a solid fraction, so the nutrients can be applied to the field more precise.

Objective and context

Key elements and processes

Practice implementation

Legislation

References

<b>Spatial coverage</b>	Farm, local or regional
<b>Practice mobility</b>	Static
<b>Level of complexity</b>	Medium
<b>Replication potential</b>	High
<b>Innovation stage</b>	Commercially available (wet digestion), Commercially available to Under development (dry digestion)
<b>Country / Region of implementation</b>	EU
<b>Limitations</b>	With co-digestion there is the amount of material classified as manure is more after digestion than before digestion.

Back
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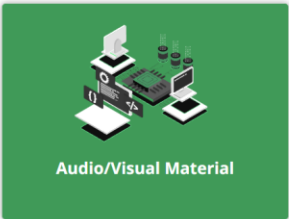
Figure 21: Nutrient Recycling Practices (Specific)

## 2.17 MainstreamBIO Resources (Audio/Visual Material)

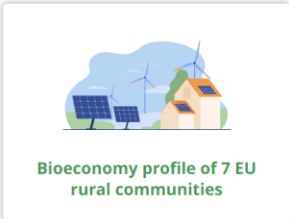
Upon accessing the [MainstreamBIO Resources page](#), users are presented with a choice between two distinct categories: audio/visual material and bioeconomy profiles of seven EU rural communities. First in line is the audio/visual material section, this section will host a number of educational and promotional videos created from our partners.

### MainstreamBIO Resources

You can further select by clicking on the topics below





**Audio/Visual Material**




**Bioeconomy profile of 7 EU rural communities**


#### MainstreamBIO Video 1



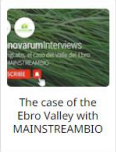


MainstreamBio is an innovative European Union project that aims to revolutionize the field of biotechnology. By leveraging cutting-edge advancements in genetic engineering and synthetic biology, MainstreamBio is committed to developing sustainable and eco-friendly solutions for a wide range of industries, from agriculture to healthcare.






MainstreamBIO Video 1



The case of the Ebro Valley with MAINSTREAMBIO



MainstreamBIO Promo Video

Figure 22: MainstreamBIO Resources (Audio/Visual Material)

## 2.18 MainstreamBIO Resources (Bioeconomy profile of 7 EU rural communities)

Within this page, users will find a diverse array of resources meticulously curated to bolster bio-based projects, comprising comprehensive guidelines and instructional videos. Furthermore, users can explore in-depth bioeconomy profiles of seven distinct EU rural communities, spanning geographical locations such as the [Netherlands](#), [Poland](#), [Denmark](#), [Sweden](#), [Bulgaria](#), [Spain](#), and [Ireland](#). These profiles offer detailed insights into various aspects including regional characteristics, areas of focus, resource utilization, and exemplary value chain models, highlighting resources such as grass, manure, pumpkin, among others. This expansive repository serves as a valuable asset for individuals

actively engaged in bio-based initiatives, providing both practical guidance and inspiring case studies from a myriad of European communities.

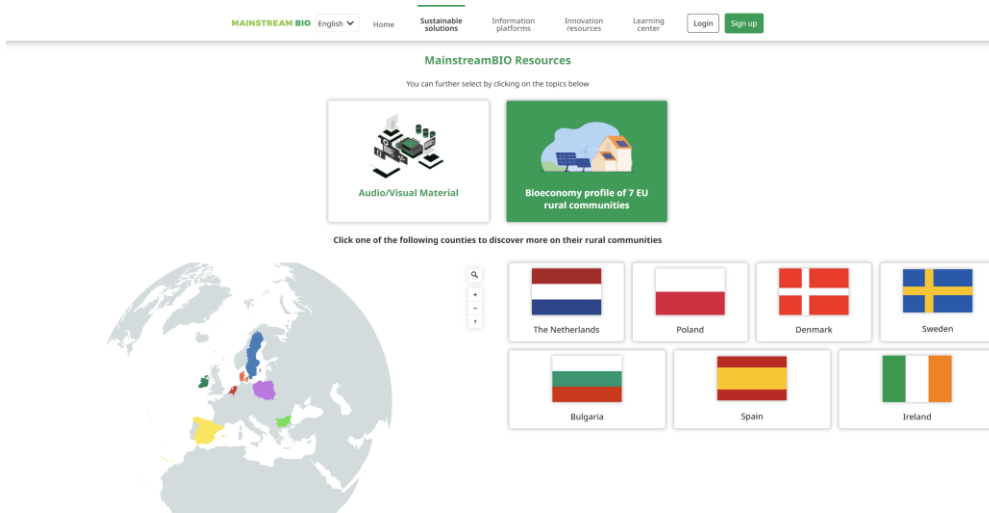


Figure 23: MainstreamBIO Resources (Bioeconomy profile of 7 EU rural communities)



Figure 24: MainstreamBIO Resources (Bioeconomy profile of The Netherlands)

## 2.19 Decision Support System

The Decision Support System (DSS) has been meticulously crafted with a streamlined 3-step system to adeptly guide users through the optimization process. Beginning with the first step, users engage with the Matching Table, facilitating the efficient pairing of feedstock with compatible technologies and products. Progressing further, the Scoring Table equips users with the ability to conduct comprehensive assessments across crucial criteria such as Social Impact, Economic Impact, Environmental Impact, and Requirements for Implementation. Users can make well-informed evaluations by leveraging additional information accessible through the info button positioned at the top left of each criterion. Moreover, users are encouraged to provide insightful comments elucidating the potential influence of each criterion on their project trajectory. Ultimately, the system reaches its culmination with the Radar Chart, presenting users with a visually intuitive summary of their assessments. This dynamic chart empowers users to swiftly identify both the strengths and



weaknesses of their project or solution in terms of implementability, social impact, environmental impact, and economic impact.

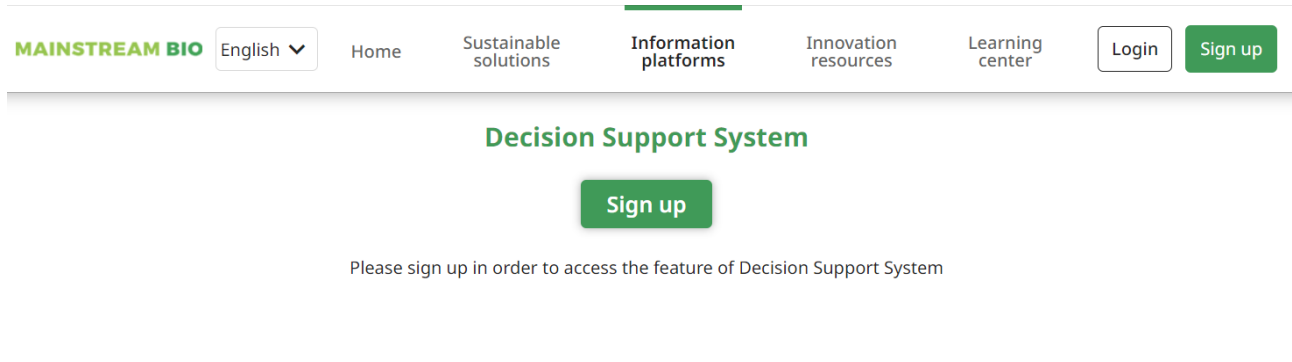


Figure 25: Decision Support System (User Not Logged In)

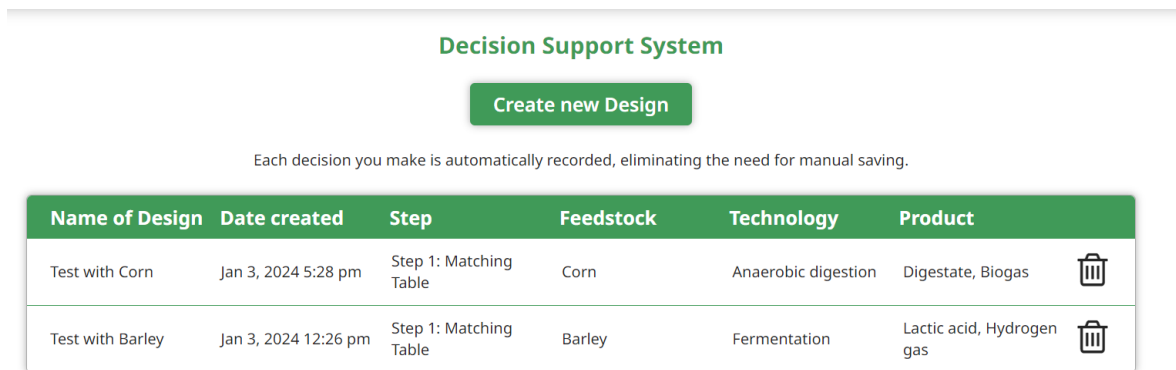


Figure 26: Decision Support System (User is Logged In and has made two previous DSS)

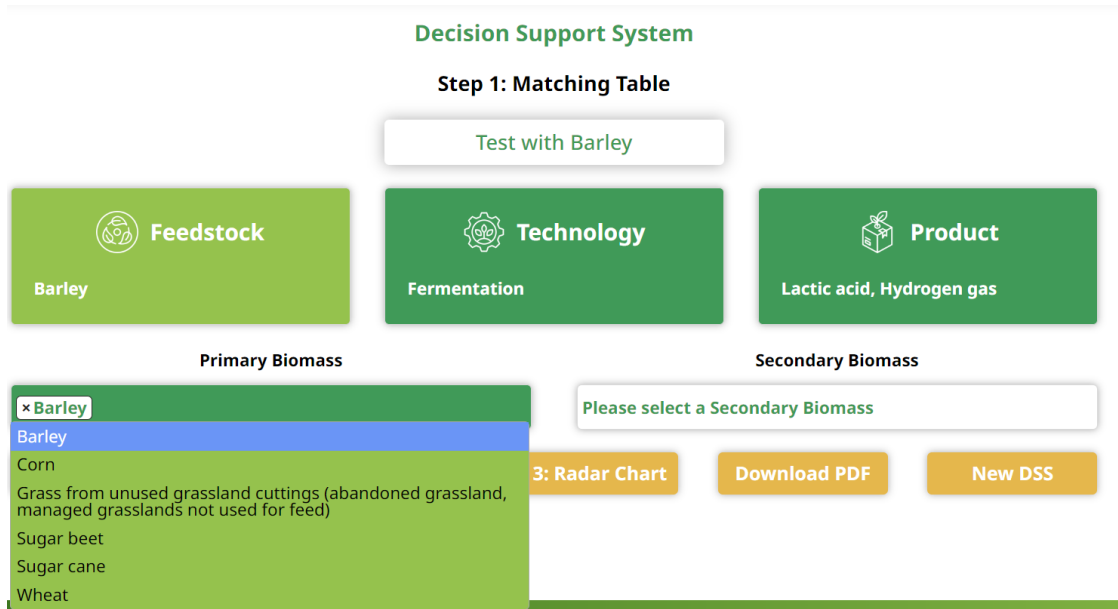






Figure 27: Decision Support System (Step 1: Matching Table)

### Decision Support System

#### Step 2: Scoring Table

##### Social impact

Social impact refers to the significant effects and consequences that your project will have.

Info	Criterion	Rating	Comment
	Creation of new jobs	2	Type here...
	Increased well-being of rural communities	1.5	Type here...
	Increased political attractiveness	2	Type here...
	Provision of education and training opportunities	1	Type here...

##### Economic impact

Economic impact pertains to the measurable influence your particular project will exert on the financial aspects of the beneficiaries




Info	Criterion	Rating	Comment
	Increased use of local biomass resources	2	This is helpful
	Increased rural business opportunities	2	Type here...
	Increased resource use efficiency	0.5	Type here...

Figure 28: Decision Support System (Step 2: Scoring Table)

### Step 3: Radar Chart



[Back to Menu](#)
[Step 1: Matching Table](#)
[Step 2: Scoring Table](#)
[Download PDF](#)
[New DSS](#)

**Step 3: Radar Chart**

- 1. Implementability (Top Left):** This chart assesses how feasible and practical the user finds the implementation of a given project or solution. A higher score indicates that the user perceives it as more achievable.
- 2. Social Impact (Top Right):** Here, the chart gauges the user's assessment of the project's potential social benefits. A higher score suggests a stronger positive impact on society, such as job creation or improved quality of life.
- 3. Environmental Impact (Bottom Left):** This chart measures the user's evaluation of the project's effect on the environment. A higher score signifies a more favorable impact, such as reduced emissions or resource conservation.
- 4. Economic Impact (Bottom Right):** This chart reflects the user's judgment regarding the project's economic viability and financial outcomes. A higher score implies a more positive economic impact, such as cost savings or revenue generation.

The radar chart provides a quick, visual overview of the user's assessments for each criterion, helping to identify the strengths and weaknesses of a project or solution in terms of implementability, social impact, environmental impact, and economic impact.

Figure 29: Decision Support System (Step 3: Radar Chart)

## 2.20 BioForum

The [BioForum](#) offers a collaborative space for user engagement with fellow users and experts dedicated to bio-based solutions. Within this space, the user can engage in inquiries, exchange ideas, share multimedia content such as photos and PDFs, access decision support systems, provide feedback, and actively participate in discussions. It serves as a dynamic hub that fosters knowledge-sharing and community interaction within the realm of bio-based solutions.

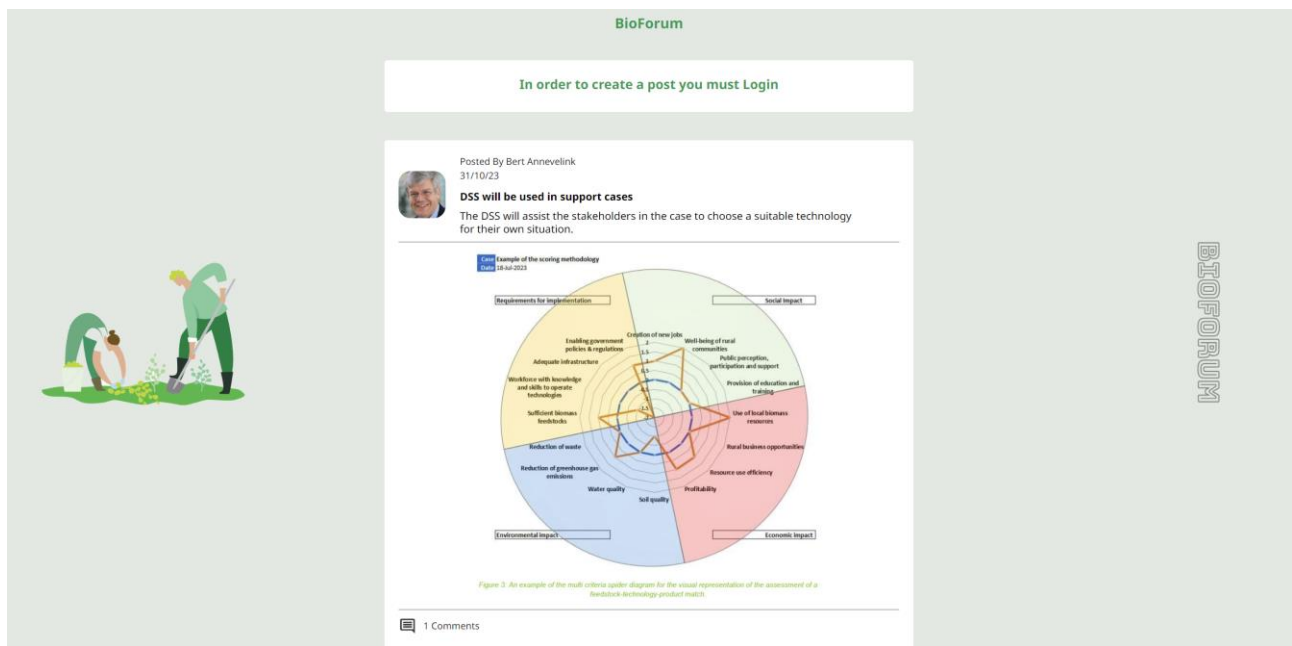


Figure 30: BioForum (User Not Logged In)

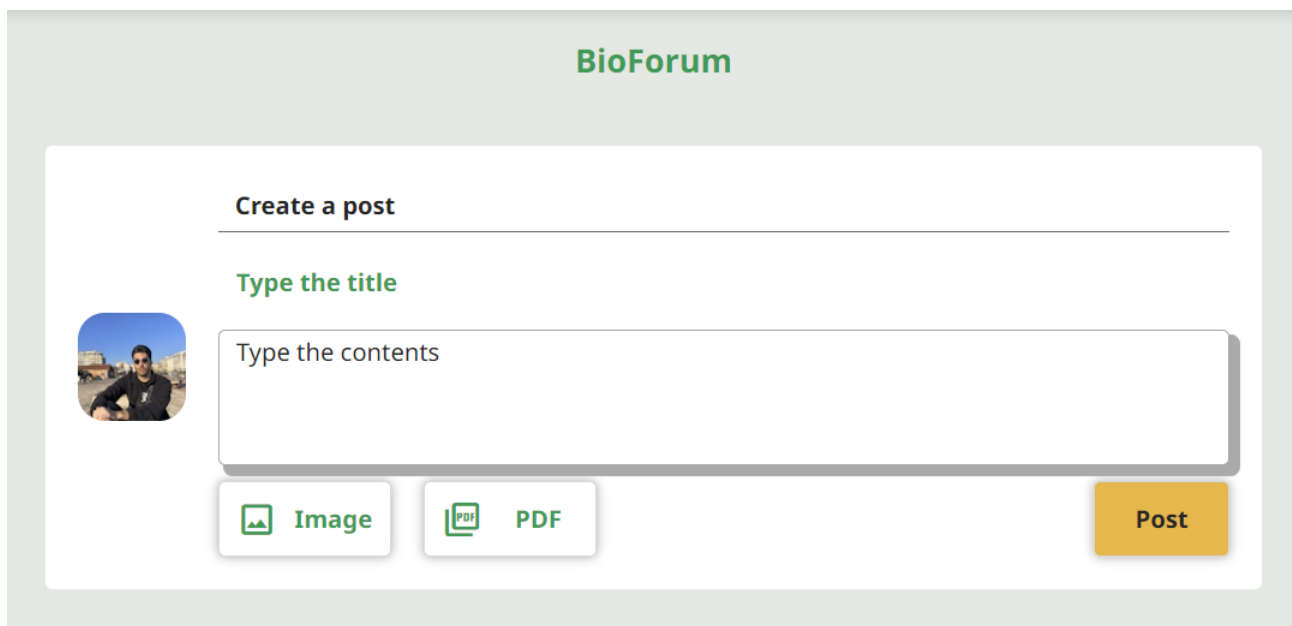


Figure 31: BioForum (User Logged In)

## 2.21 Bioeconomy Repository

In the page of the [Bioeconomy Repository](#) users will uncover a wealth of information spanning a broad spectrum of topics within the bioeconomy. Explore an extensive collection of audiovisual materials and documentation, offering the flexibility to filter content by category, stakeholder, description, language, year, or keyword. This resource hub serves as a comprehensive platform, providing users with valuable insights and keeping them informed about diverse facets of the

bioeconomy.

### Bioeconomy Repository

Are you interested for more topics related to bioeconomy? Please select below

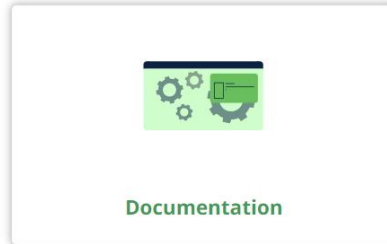



Figure 32: Bioeconomy Repository (Audio/Visual Material)




**Bioeconomy Repository**

Are you interested for more topics related to bioeconomy? Please select below



Audio/Visual Material



Documentation

You can further select by clicking on the topics below

Filter by category
Filter by stakeholder type
Type description keyword
Filter by language
Filter by year
Filter by keyword

Title	Category	Stakeholder type	Brief description	Language	Year	Keywords
Agricultural Advisory Center	Articles/ Publication, Educational material	Farmers/ Biomass Producers, Civil Society, Policy, Research/ Academia	Website with information about organic farming, fertilization planning, nutrient recycling methods, fertilizer regulations	Polish, English	2023	Organic farming, Nitrogen fertilization, Nutrient recycling
eAgronom	Tool	Farmers/ Biomass Producers, Civil Society, Business/ Industry, Policy, Research/ Academia	The climate crisis makes it important to act to reduce the concentration of greenhouse gas emissions into the atmosphere. The eAgronom Carbon Program allows farmers to earn money from the carbon credits they generate through environmentally friendly farming practices. Today, farms can compensate carbon emissions to achieve climate goals and sustainable agriculture.	English, Estonian, Latvian, Lithuanian, Polish, Czech, Spanish, Romanian	2023	Carbon farming, Carbon credits
EDWIN - Online Platform for Consulting and Decision Support in Integrated Pest Management	Tool	Farmers/ Biomass Producers, Civil Society, Business/ Industry, Policy, Research/ Academia	National IT system for plant protection for improve quality and quantity of food produced in Poland, with tracking the origin of agricultural products and sharing of meteorological data	Polish	2023	Plant protection, Product tracking, Meteorological data
FertiSat	Tool	Farmers/ Biomass Producers, Civil Society, Business/ Industry, Policy, Research/ Academia	FertiSat service provides maps of variable fertilization created on the basis of satellite imagery. In the current season we offer maps for precise nitrogen fertilization of grain crops that can be uploaded to controllers of agricultural machines or analyzed on a computer screen.	Polish, English	2023	Nitrogen fertilization, Satellite imagery, Crop monitoring

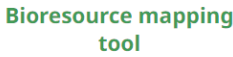
Figure 33: Bioeconomy Repository (Documentation)

## 2.22 Tool Library


In the [Tool Library page](#), the user can explore a range of tools designed to assist in planning, implementing, and monitoring the progress of bio-based projects for optimal sustainability.

**Tool Library**


Explore our toolbox, to access a diverse range of resources and tools for comprehensive solutions




**Bioresource mapping tool**




**BIOeast**  
Virtual Toolbox




**AGRI FOR VALOR**  
Side stream value tool




**BIOSWITCH**  
Toolbox



**POWER4BIO**  
REGIONS FOR BIOECONOMY  
Catalogue



**GO-GRASS**  
Toolbox



**AGRO in LOG**  
INTEGRATED BIOMASS LOGGING CENTRES FOR THE AGRO-INDUSTRY  
IBLC Tool

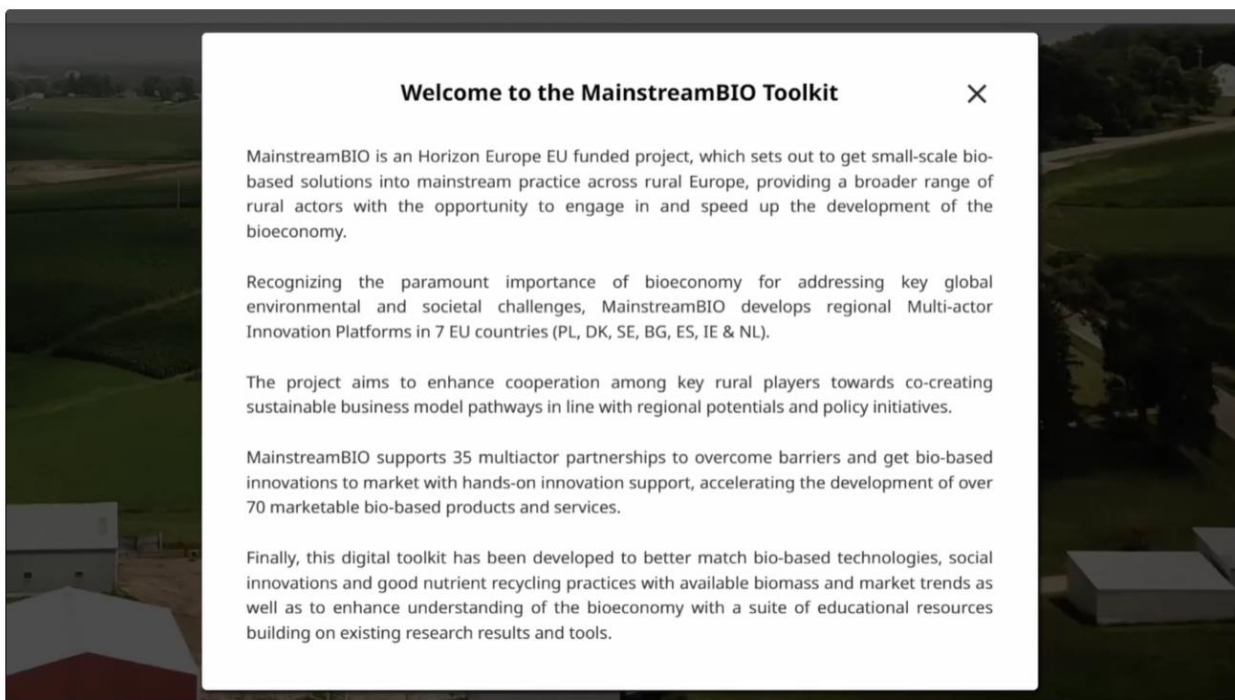
Figure 34: BioForum (User Logged In)

## 2.23 Instructions

In the [Instructions page](#), the user can have a comprehensive overview of the functionalities of the digital toolkit and its navigation with audio/visual material as well as written instructions.

### Instructions

In this section you can see our instructional video on correctly using the toolkit, as it was designed



Following the video instructions you can read through the transcript

### Introduction


Welcome to MainstreamBIO, a digital toolkit that helps you explore small-scale bio-based solutions, best practices for nutrient recycling, the bioeconomy profile of 7 EU countries. In this video, we will guide you through the seven functionalities of MainstreamBIO and show you how to use them effectively.

*Figure 35: BioForum (User Logged In)*

## 2.24 Account

By tapping on the profile icon located on the right side of the header, users can access their account page. Here, they have the option to modify their profile picture, update their email address and username, delete their account, change their password, and review the privacy policy.

### My Account



You can change your Profile picture by clicking here

Email Address

Username

[Delete my account](#) [Save changes](#)

### Account Security

Current password

New password

Confirm new password

[Change password](#)

### Privacy policy

This Privacy Policy applies to MainstreamBIO project website and governs personal data collection and use by the website only. MainstreamBIO project is committed to being transparent and to ensuring your privacy is protected. By using our website, you consent to personal data practices described below. MainstreamBIO project Privacy Policy is effective from 22/12/2022. We reserve the right to update or change the policy at any time, therefore you may want to

Figure 36: Account

## 3. Conclusion

The MainstreamBIO project aims to foster the adoption and diffusion of small-scale bio-based solutions across rural Europe, by providing innovative digital tools and tailored innovation support to key stakeholders. The project has developed a digital toolkit that consists of four main components: a catalogue of bio-based technologies, business models and social innovations; a decision support system that matches biomass and waste streams with suitable bio-based solutions; a bioeconomy repository that aggregates educational material from various bio-based projects; and a Bioforum that facilitates communication and exchange of ideas among the members of the regional multi-actor innovation platforms. The digital toolkit is designed to enhance the understanding, awareness and engagement of rural actors in the bioeconomy, as well as to support them in identifying and implementing sustainable and circular bio-based solutions that fit their local context and needs. The digital toolkit is expected to contribute to the development of local inclusive and circular bioeconomies in rural areas, and ultimately to the creation of a strong EU-wide circular bioeconomy.

## 4. Final Release

In the forthcoming final release of MainstreamBIO's digital toolkit, a comprehensive enhancement initiative is set to unfold, guided by invaluable user feedback sourced from the "Helpful Feedback" section. The primary objective entails meticulous refinement and optimization of the application, leveraging insights gleaned from user interactions. Furthermore, anticipation surrounds the forthcoming workshops, expected to yield additional commentary and insights to inform optimization endeavors.

Concurrently, a commitment to expanding the toolkit's resource repository remains. This involves sourcing additional materials to enhance the offering, ensuring users have access to a comprehensive suite of resources relevant to their bioeconomy needs. Simultaneously, a rigorous review of existing processes and content is underway, aimed at enhancing overall quality, efficacy and user experience.

A notable enhancement to the offering is the introduction of a dedicated webinars section within the learning center. This addition serves to centralize and showcase the wealth of knowledge contributed by partners. Through the curation and hosting of these webinars, users are afforded an opportunity to engage with expert insights and stay informed of the latest developments within the industry.

In summation, the final release of MainstreamBIO's digital toolkit embodies a commitment to continuous improvement and user-centricity. Through refinement and analyzing the data of our how the users of the toolkit use it the goal is to achieve the most optimal version of the toolkit.



## 5. ANNEX I

# MainstreamBIO User Requirement Questionnaire

This questionnaire is created in the framework of the MainstreamBio project, funded by the European Union (<https://mainstreambio-project.eu/>). The scope of this questionnaire is to gather the user requirements for the development of the MainstreamBIO digital toolkit, which will enable better match of bio-based technologies, social innovations and good nutrient recycling practices with available biomass and market trends as well as will enhance the understanding of the bioeconomy with a suite of educational resources building on existing research results and tools (<https://mainstreambio-project.eu/mainstreambio-toolkit/>).

The main components of the MainstreamBIO digital toolkit will be:

- a) Catalogue of small-scale bio-based technologies, business models and social innovations
- b) Collection of best practices for improved nutrient recycling
- c) Decision Support System
- d) Bioeconomy Repository
- e) Tool Library
- f) BioForum
- g) Bioeconomy profile of the 7 EU rural communities

**Disclaimer:** The answers are fully anonymized, and we **do not collect any personal data** from you (email address, name). Your answers will help us to design the tool and adjust it at your needs. Some statistical results will be included in the project's deliverable D2.5: MainstreamBIO digital toolkit – initial version, which will be public and available at 02/2024.

*Skip to question 1*

### Background Information

We want to be sure that all of you are included :)

1. How do you define yourself?

*Mark only one oval.*

- Male
- Female
- Other
- Prefer not to say

2. In which age group do you belong?

*Mark only one oval.*

- < 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- > 60

3. Where do you live now?

*Mark only one oval.*

- Netherlands
- Spain
- Greece
- Bulgaria
- Poland
- Denmark
- Ireland
- Sweden
- Other

4. What's your level of education?

*Mark only one oval.*

- School diploma
- Bachelor
- Master
- PhD
- Other

5. What's your employment status?

*Mark only one oval.*

- Permanently employed
- Periodical employed (e.g., only summertime)
- Employed with contract for a specific period of time
- Unemployed
- Other

6. Years of working experience

---

7. Which of the following categories describe better your stakeholder status?

*Mark only one oval.*

- Biomass Producer
- Academic / researcher
- Agri-food and/or bio-based business
- Policy maker/ advisor
- General Public
- Other

8. If you are a representative of an industry or organization, will your organization/industry grow or downsize over the next 5 years (according to your estimations/anticipations)?

*Mark only one oval.*

- Grow
- Downsize
- Stay stable
- I don't know

9. How did you first learn about our toolkit?

*Mark only one oval.*

- Looking for a similar product
- Just browsing
- Advertising
- Social Media
- From a project's partner
- Other

*Skip to question 10*

## General Questions About the Toolkit

Your opinion matters!

10. How was your first reaction to the idea of the MainstreamBIO digital toolkit?

*Mark only one oval.*

- Very Negative
- Negative
- Neutral
- Positive
- Very Positive

11. How innovative, do you believe, is the MainstreamBIO digital toolkit product(in a scale from 1 to 5)?

*Mark only one oval.*

Not at all

1

2

3

4

5

Very innovative

12. For which of the components of the MainstreamBIO digital toolkit are you more interested in?

*Check all that apply.*

- Catalogue of small-scale bio-based technologies, business models and social innovations
- Collection of best practices for improved nutrient recycling
- Decision Support System
- BioForum
- Bioeconomy Repository
- Tool Library
- Bioeconomy profile of 7 EU rural communities

13. How will you use the toolkit?



*Check all that apply.*

- Design a solution (matching available biomass and waste streams with small-scale bio-based techs, business models and social innovations)
- Search and compare functionality for cross-case comparisons, across catalogue items
- Search for resources for successful management of nutrients and organic matter recycling back to soils in line with circular economy principles
- Search for educational material (fact sheets, publications, webinars, videos etc.) about bioeconomy
- All the above

14. In which way, will you or your organization use the MainstreamBIO digital toolkit?

---

---

---

---

---

15. How long do you expect to use the MainstreamBIO digital toolkit?

*Mark only one oval.*

- < 1 year
- 1 - 2 years
- 3 - 4 years
- > 5 years

16. Do you think this toolkit is something you need, or not?

*Mark only one oval.*

Yes

No

17. Is there any need for any additional services (e.g., contact of product owners, stakeholders, mapping of business models)?

*Mark only one oval.*

Yes

No

18. If yes, which ones?

---

---

---

---

---

19. Are you currently using any advanced technologies to enhance your services?

*Mark only one oval.*

Yes

No

20. If yes, please specify.

---

21. Have you used similar toolkits in the past?

*Mark only one oval.*

Yes

No

Not at all (in case that the idea of a toolkit is something new to you)

22. If yes, which ones?

---

23. Have you been satisfied by them?

*Mark only one oval.*

Yes

No

24. Please explain shortly your answer

---

---

---

---

---

25. Could you please indicate the specific standards or methods (if any) used during the use of similar toolkits (e.g., use of search filter, providing instructions for using the tool, glossary, use of keywords for searching, links to similar projects etc.)?

---

---

---

---

---

26. What are, in your opinion, the user's limitations on these types of toolkits? (You can choose more than one)

*Check all that apply.*

- Require specific information and data that might not be available
- Complicated and time consuming
- Are designed for well-trained users only
- Cannot guarantee secure data handling
- Do not take into account the comfort levels of the use
- Other

27. If you choose other, please specify

---

28. In your opinion, what are the aspects that are not currently taken into account during the application of this type of programs (e.g., comfort level)?

---

29. Do the current toolkits (if you use any) provide interactive user visualization?

Mark only one oval.

No

\_\_\_\_\_

1

\_\_\_\_\_

2

\_\_\_\_\_

3

\_\_\_\_\_

4

\_\_\_\_\_

5

\_\_\_\_\_

Yes

\_\_\_\_\_

30. In your opinion, what type of functions can improve the performance of similar toolkits?

Check *all that apply*.

- User profiling
- Cost signaling
- Customer clustering
- Other
- I don't know

31. If you chose other, please specify

\_\_\_\_\_

32. Are you going to use the toolkit alone or with your partners?



*Mark only one oval.*

- Personally
- In collaboration with partners

33. How much time do you expect to invest on the MainstreamBIO digital toolkit(each time you use it)?

*Mark only one oval.*

- < 1 hour
- 1-3 hours
- 3- 6 hours
- > 6 hours

34. Where will you expect to be/mainly located physically when you access theMainstreamBIO digital toolkit?

*Mark only one oval.*

- At home
- At work (office)
- In the field

35. Which device will you use to access the toolkit?

*Check all that apply.*

- Computer
- Tablet
- Mobile phone
- All the above
- Other

36. When is more possible to use the toolkit?

*Check all that apply.*

- Autumn
- Winter
- Spring
- Summer
- The whole year

37. In which languages do you prefer the MainstreamBIO digital toolkit be?

*Mark only one oval.*

- English
- Local Language
- Both
- Other

38. What do you like the most about the idea of this toolkit?

---

---

---

---

---

39. What problems do you anticipate this digital toolkit to solve?

---

---

---

---

---

*Skip to question 40*

## Functional Questions

Your convenience is a priority!

40. Would you like to provide user identity by placing username and password based on the user access level?

*Mark only one oval.*

Strongly Disagree

1

2

3

4

5

Strongly Agree

41. Would you like to log – in to specific components to the toolkit (e.g., in order to design a solution)?

*Mark only one oval.*

- Log in to all components
- Open access to all components
- Log in specific components

42. If yes, to which components do you want to login (e.g., BioForum, DecisionSupport System etc.)?

---

43. Would you like to save online your designs (through the decision supportsystem), for future use?

*Mark only one oval.*

Yes

No

44. Would you like to download your designs (through the decision supportsystem) instead of saving them on – line?

*Mark only one oval.*

Yes

No

45. As a user would you like to have the option to update or delete your design(through the decision support system)?

*Mark only one oval.*

Yes

No

46. Would you like to back up your data periodically and automatically?

*Mark only one oval.*

Yes

No

47. Would you like to search in the history, your choices (e.g., previous designs, viewed educational material etc.)?

*Mark only one oval.*

Yes

No

48. Would you like the communication be supported through:

*Mark only one oval.*

Email

Platform

Other

49. Who do you prefer to do the updates?

*Mark only one oval.*

Yourself, manually

The web  
developer

*Skip to section 5 (Thank you for your time and answers)*

**Thank you for your time and answers.**

Stay tuned to enjoy the toolkit :)

## 6. ANNEX II

### Mockups (Whimsical/Figma)

Figures from 37 to 61 are Whimsical wireframes.



Figure 37: Wireframe of the header of MainstreamBIO Toolkit

A wireframe of a sign-up pop-up window. It contains three input fields for 'Username', 'Email', and 'Password'. Below the fields is a text block: 'By clicking Sign Up, you agree to our Privacy and Cookies Policy. Learn how we collect, use and share your data and how we use cookies and similar technology in our [Privacy and Cookies Policy](#)'. The text block has a small icon in the bottom right corner.

Figure 38: Wireframe of Sign-Up Pop-up Window

A wireframe of a login form. It features two input fields for 'Email' and 'Password'. Below the fields is a blue 'Log in' button. At the bottom of the form is a link: '[Forgot your password?](#)'.

Figure 39: Log in of MainstreamBIO Toolkit



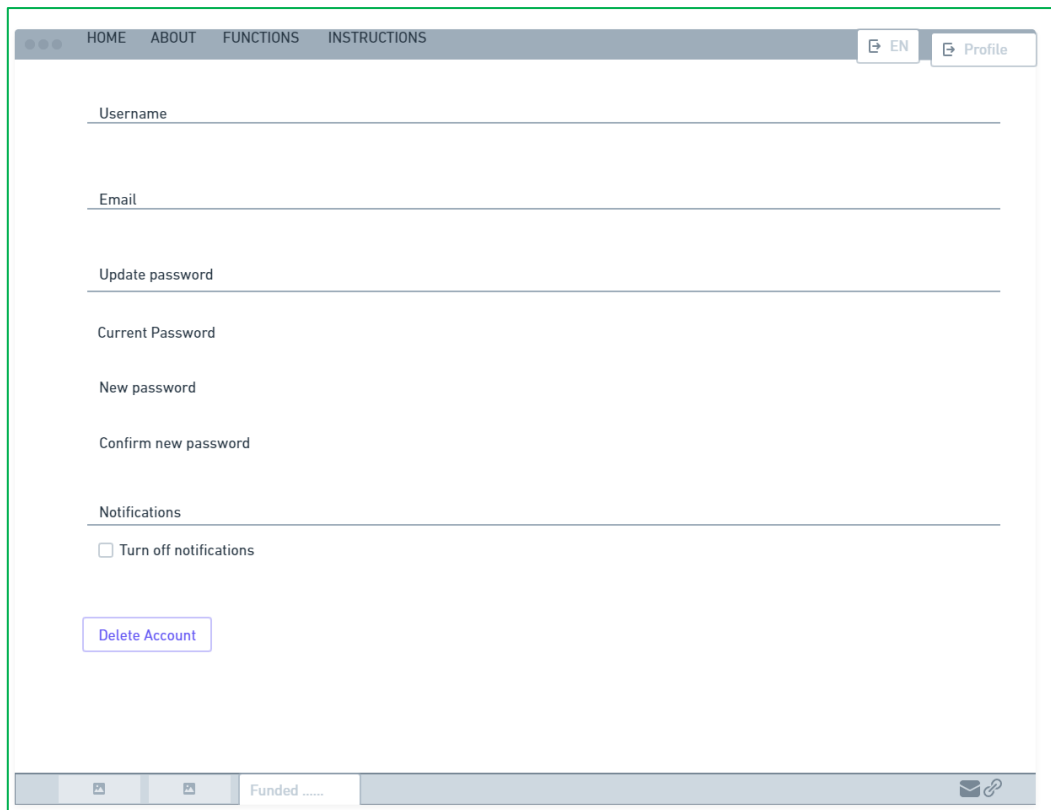


Figure 40: Wireframe of Account Page

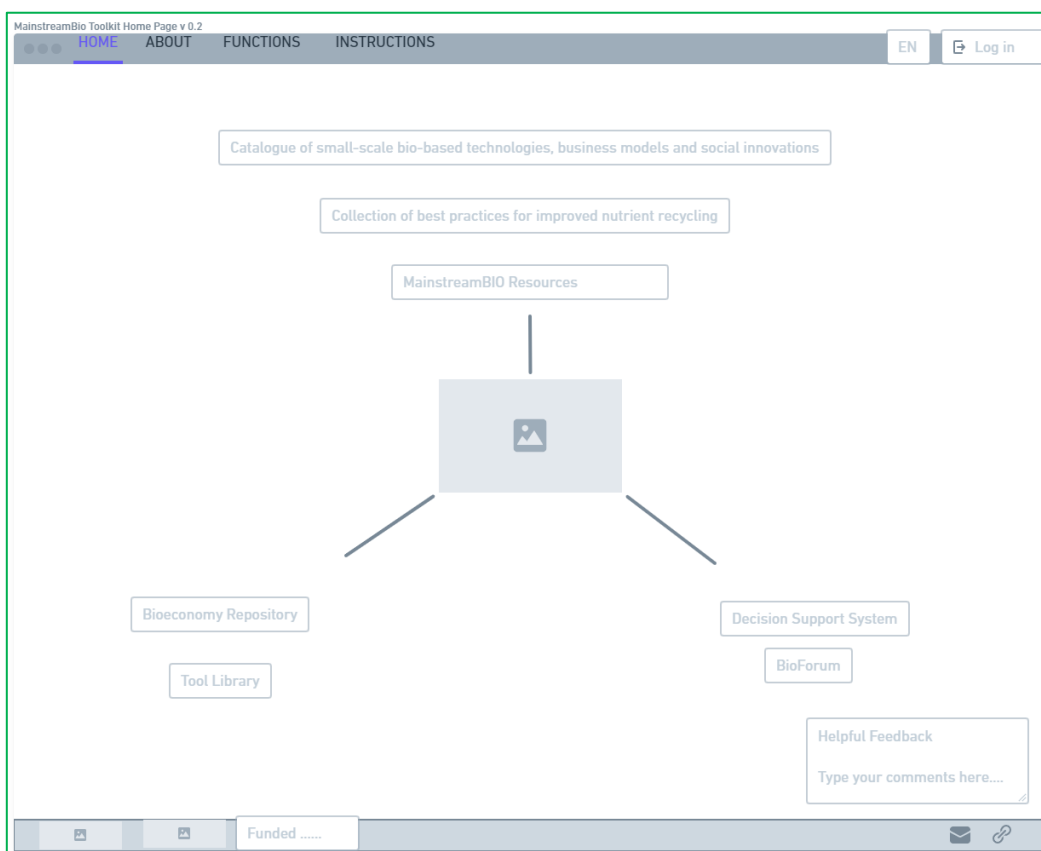


Figure 41: Wireframe of Home Page

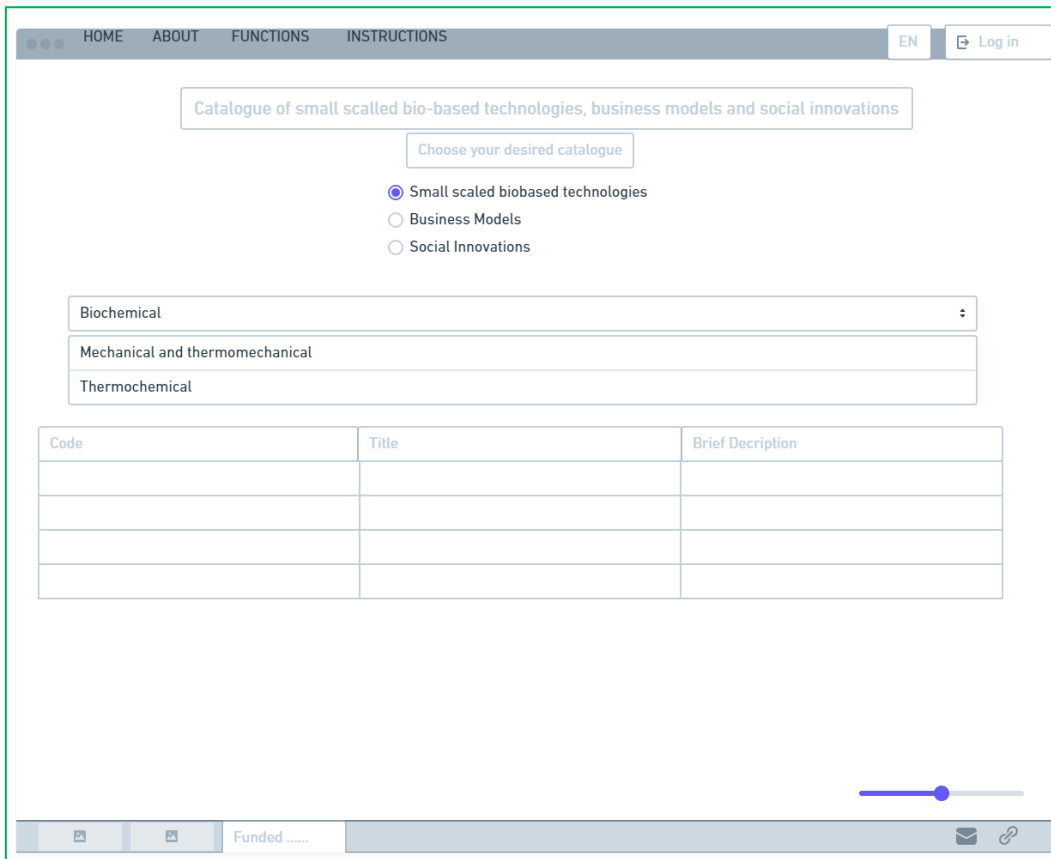


Figure 42: Wireframe of Catalogues Page with small - scale bio-based technologies selected.

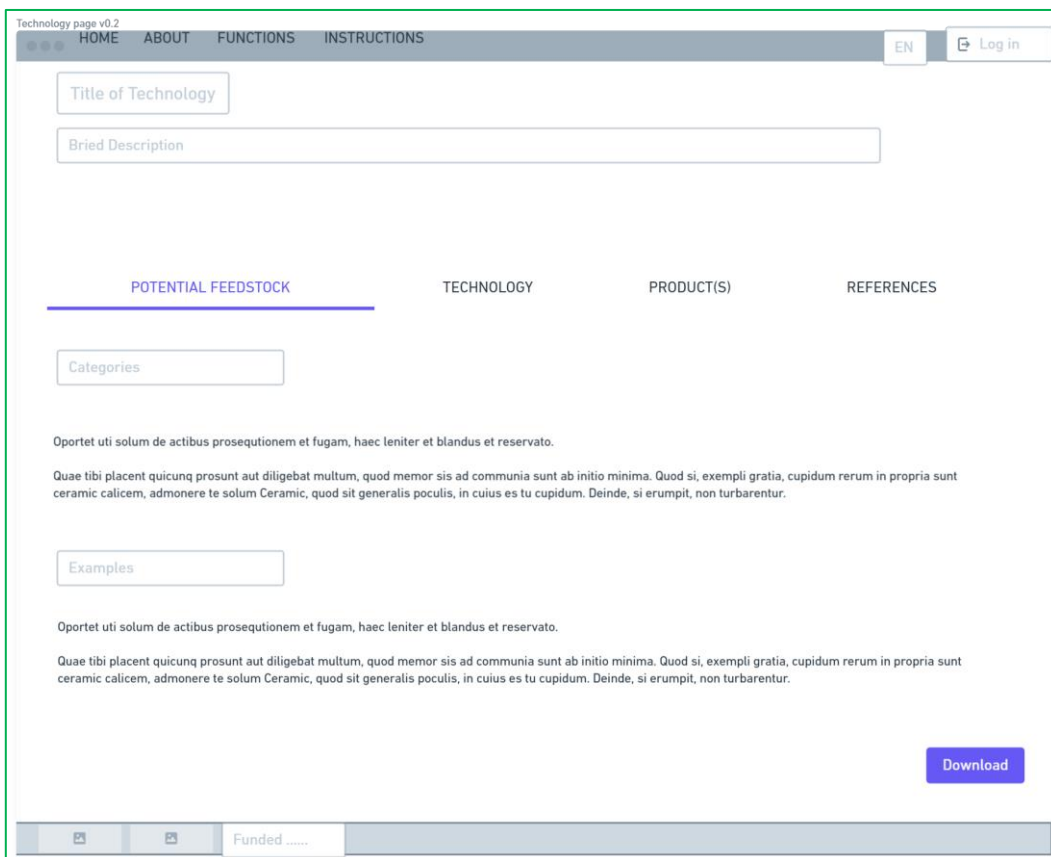


Figure 43: Wireframe of a specific small - scale bio-based technology.

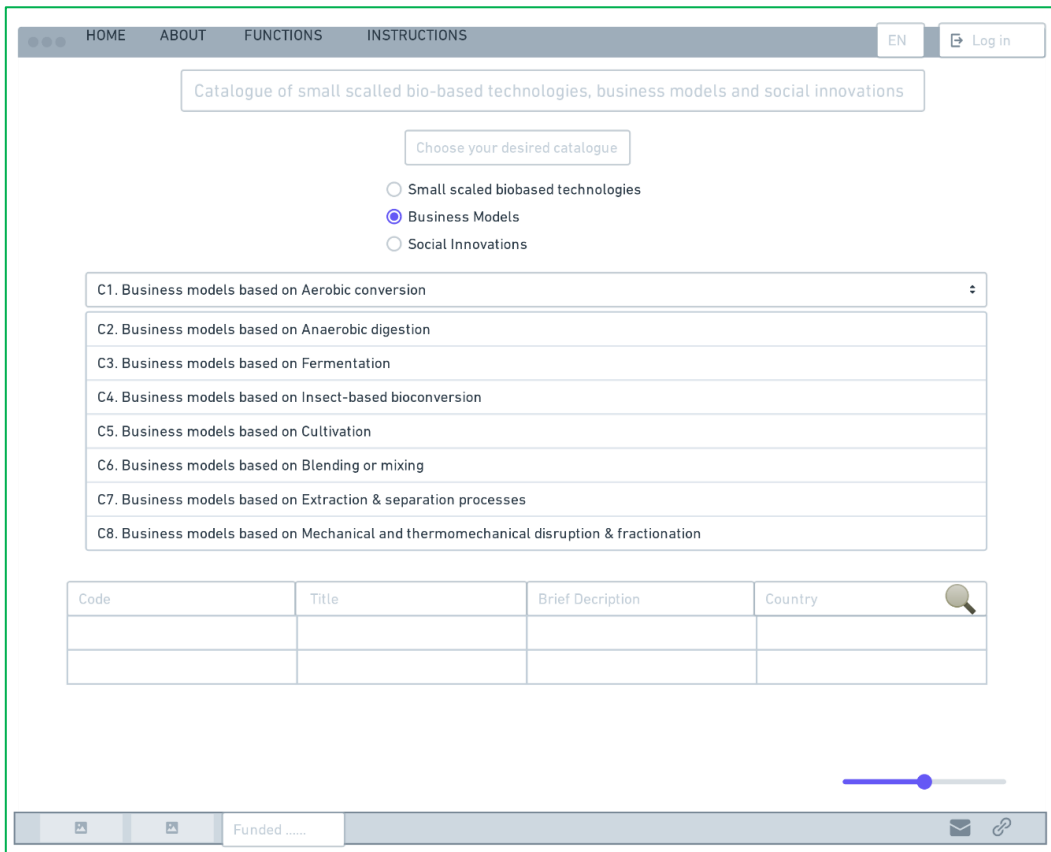


Figure 44: Wireframe of Catalogues Page with business models selected.

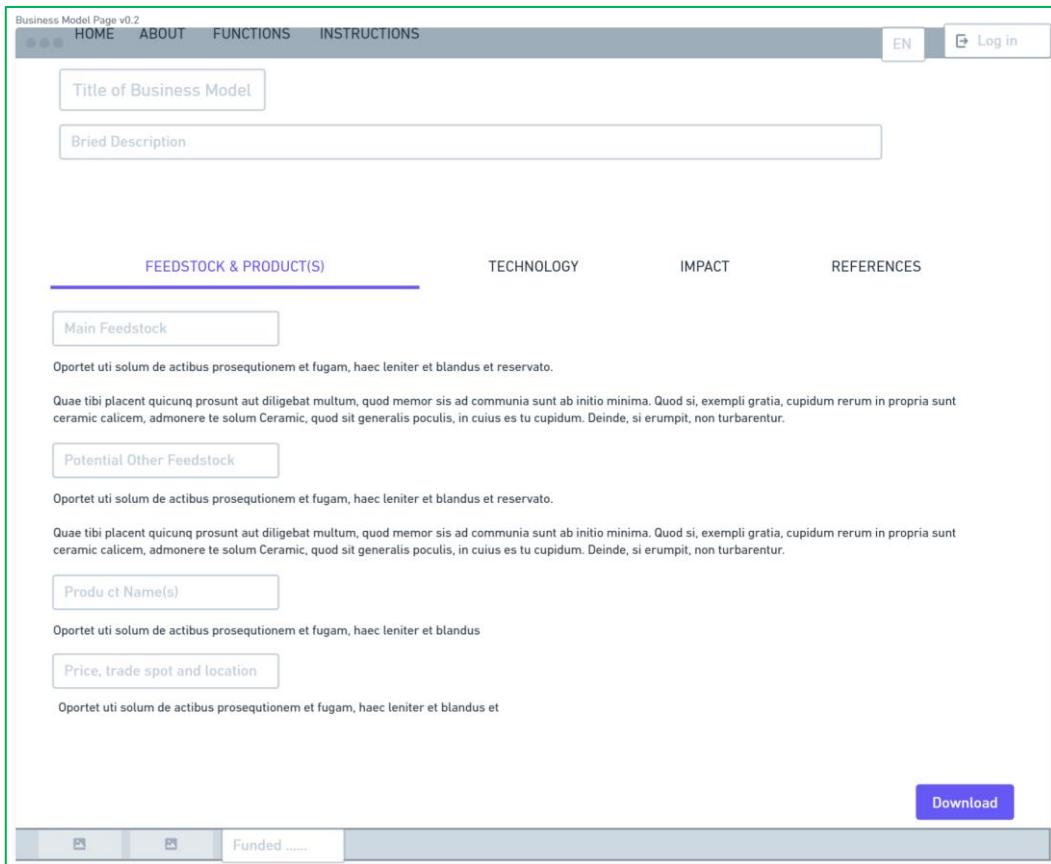


Figure 45: Wireframe of a specific business model

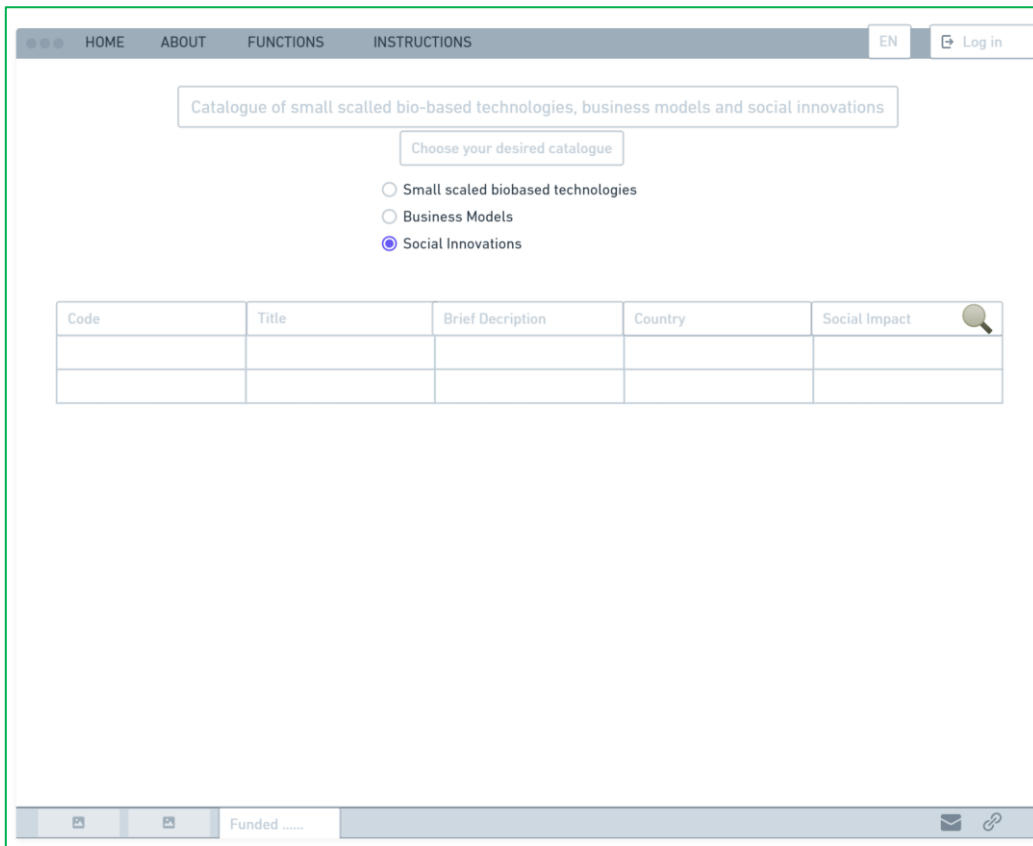


Figure 46: Wireframe of the catalogue Page with social innovations selected

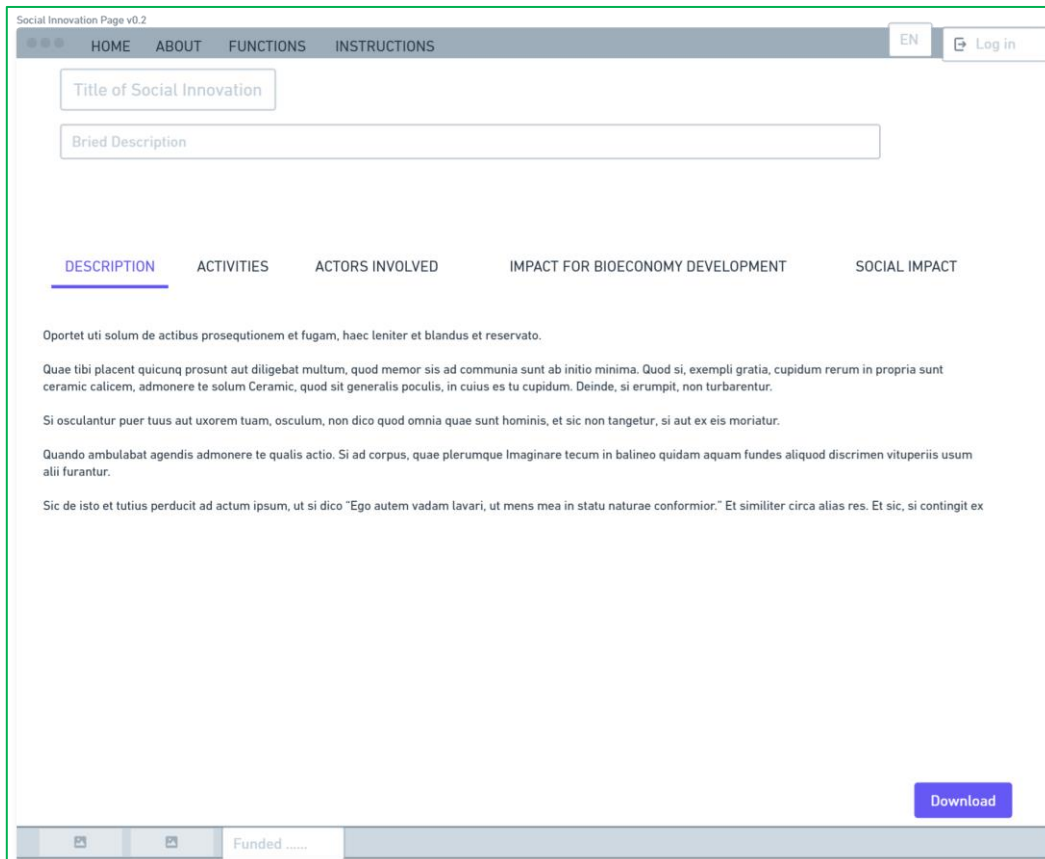


Figure 47: Wireframe of a specific social innovation

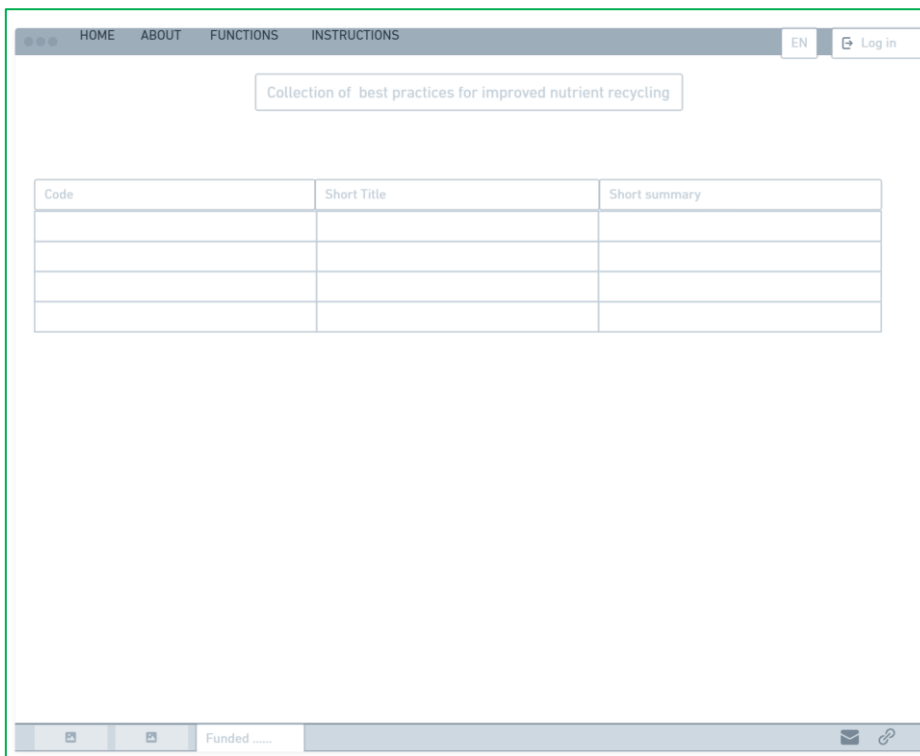


Figure 48: Wireframe of the Collection of the best practices for improved nutrient recycling

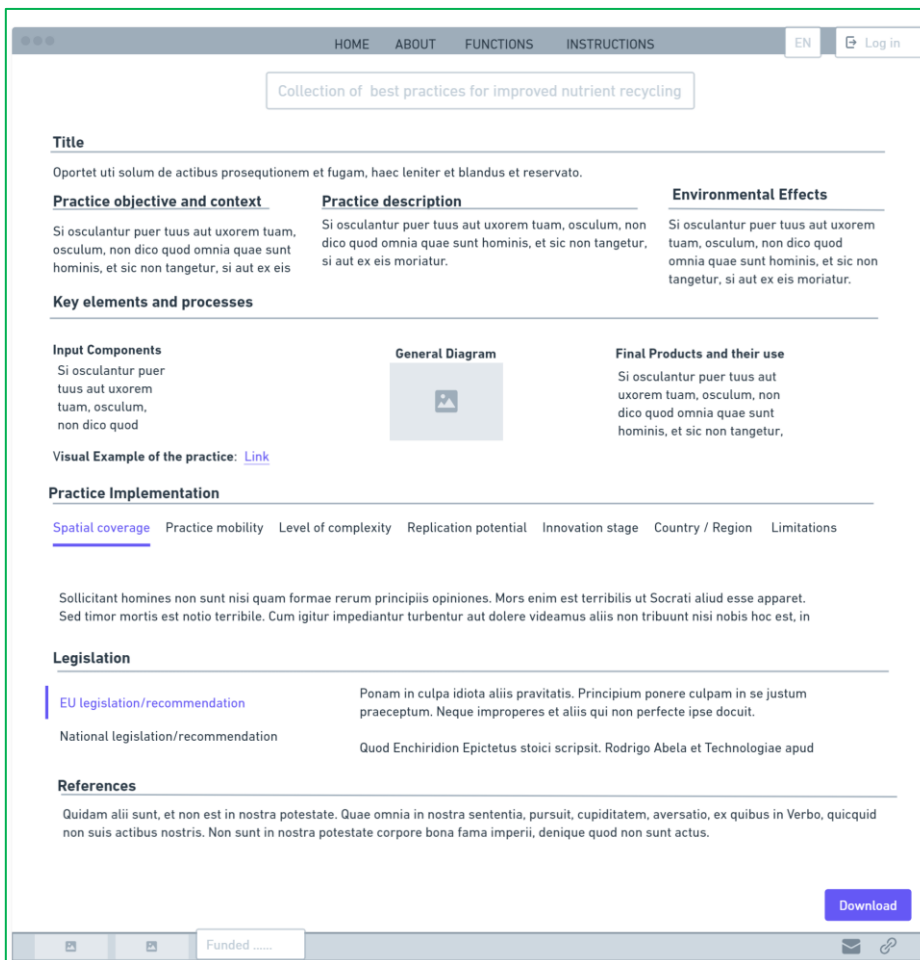


Figure 49: Wireframe of a specific nutrient recycling practice

DSS v 0.1

### Decision Support System Step 1: Matching Table

Design Name	FEEDSTOCK	TECHNOLOGY	PRODUCT

**FEEDSTOCK**

**Primary Biomass**

Lignocellulosic from croplands and grasslands

Starch crops

Sugar crops

**Secondary Biomass**

Residues from agriculture

Residues from forestry and forest-based industry

Residues from nature and landscape management

Residues from livestock production

Other organic residues

**TECHNOLOGY**

**Biochemical**

Aerobic conversion

Anaerobic digestion

Enzymatic process

Fermentation

Insect - based Bioconversion

Cultivation of Mushrooms

Cultivation of Algae

**Mechanical and thermomechanical**

Blending or Mixing

Extraction & separation processes

Mechanical and thermomechanical disruption & fractionation

Mechanical pulping

**Thermochemical**

Combustion

Gasification

Hydrothermal liquefaction

Pyrolysis

Torrefaction & Carbonization

**PRODUCT**

**Chemicals**

Building blocks

Colorants

Cosmeceuticals

Nutraceuticals

Solvents

Other chemical product

**Energy**

Fuels

Heat

Power

Other energy products

**Materials**

Composites

Fibres

Organic Fertilizers

Polymers

Other material product

**Others**

Food

Animal Feed

Platforms

Back to DSS Main Page
Next to scoring table
Download
Save design

Funded by the European Union

Figure 50: Wireframe of the matching table of the DSS

DSS v 0.1

### Decision Support System: Scoring Table

Design Name	FEEDSTOCK	TECHNOLOGY	PRODUCT

**Multi-Criteria Decision Making (MCDM) assessment**

[MCDM excel file](#)

Theme	Criterion	Score	Description/Notes
<b>Social Impact</b>	Creation of new jobs	● 0	
	Increased well-being of rural communities	● 0	
	Increased public perception, participation and support	● 0	
<b>Economic Impact</b>	Provision of education and training opportunities for the rural community	● 0	
	Increased use of local biomass resources	● 0	
	Increased rural business opportunities	● 0	
	Increased resource use efficiency	● 0	
<b>Environmental Impact</b>	Increased profitability	● 0	
	Improvement of soil quality	● 0	
	Improvement of water quality	● 0	
<b>Requirements for Implementation</b>	Reduction of greenhouse gas emissions	● 0	
	Reduction of waste	● 0	
	Presence of sufficient biomass feedstocks	● 0	
	Presence of workforce with knowledge and skills to operate technologies	● 0	
	Presence of adequate infrastructure	● 0	
	Presence of enabling government policies & regulations	● 0	

Back to Matching Table
Next to Supporting Information
Download
Save Design

Funded by the European Union

Figure 51: Wireframe of the scoring table of the DSS



Figure 52: Wireframe of the Supporting Information Table of the DSS

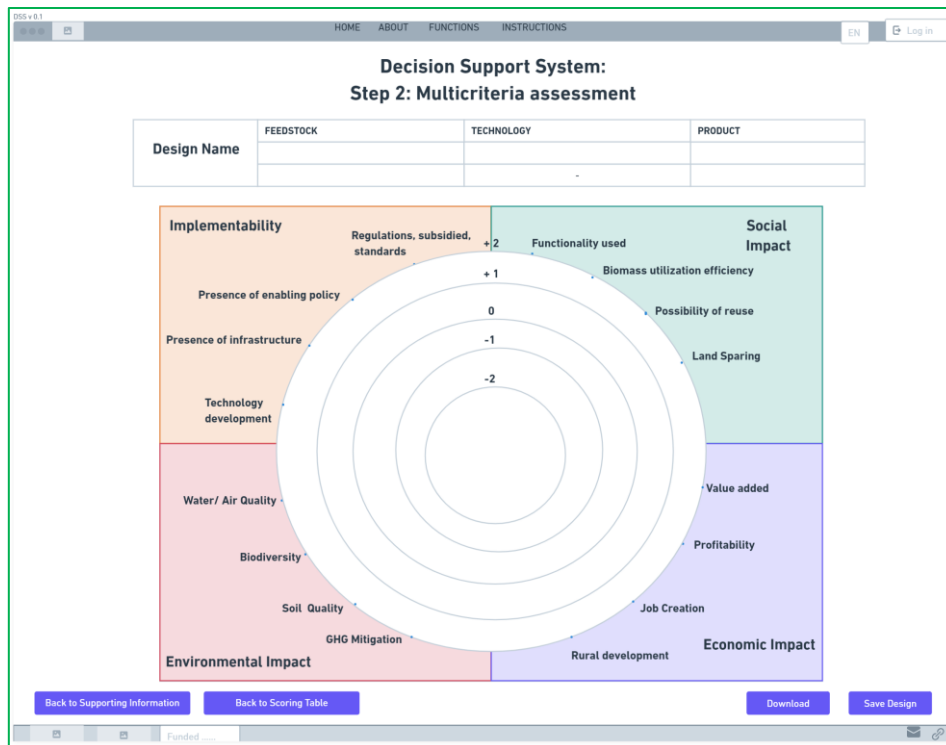


Figure 53: Wireframe of the Multicriteria Assessment (Spider - diagram)



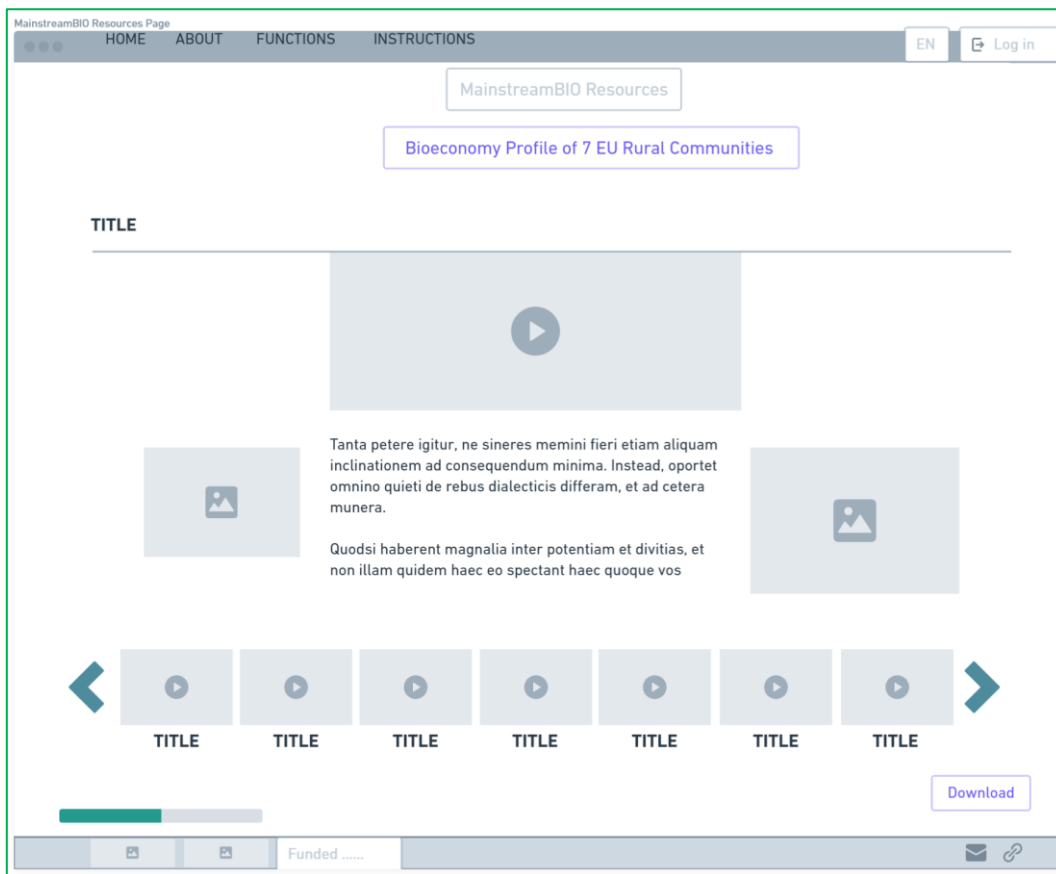


Figure 54: Wireframe of MainstreamBIO Resources page

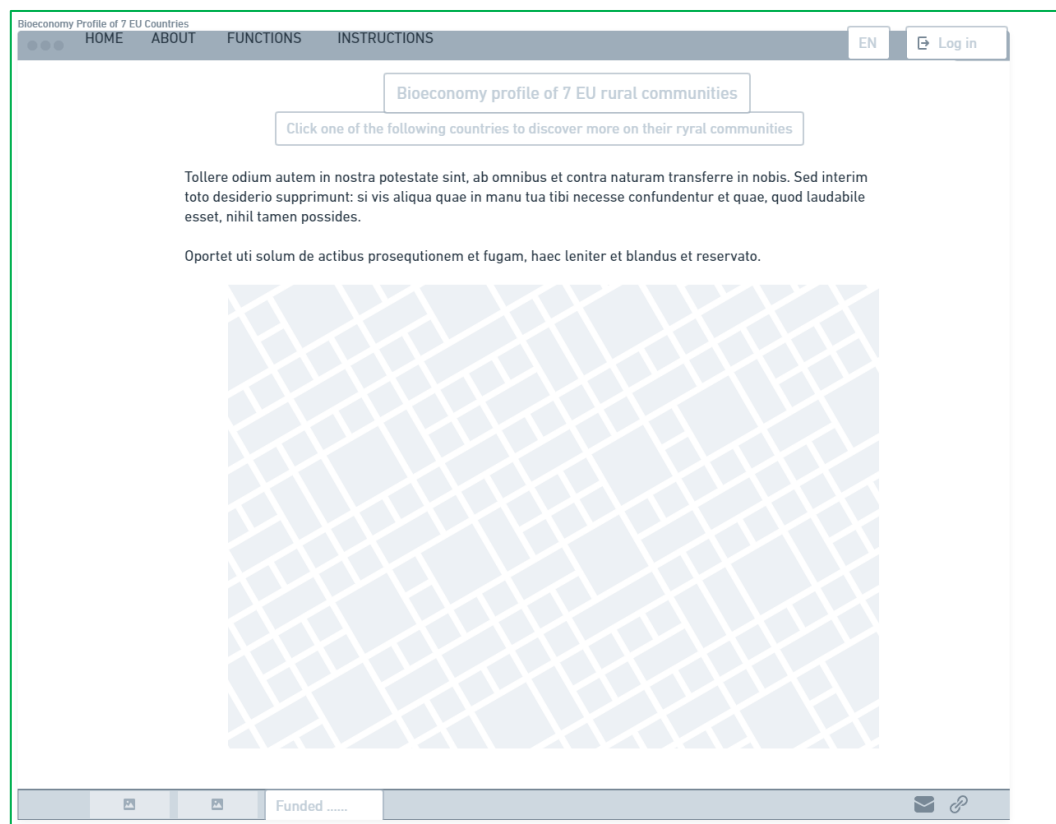


Figure 55: Wireframe of Bioeconomy Profile of 7 EU Rural Communities Page

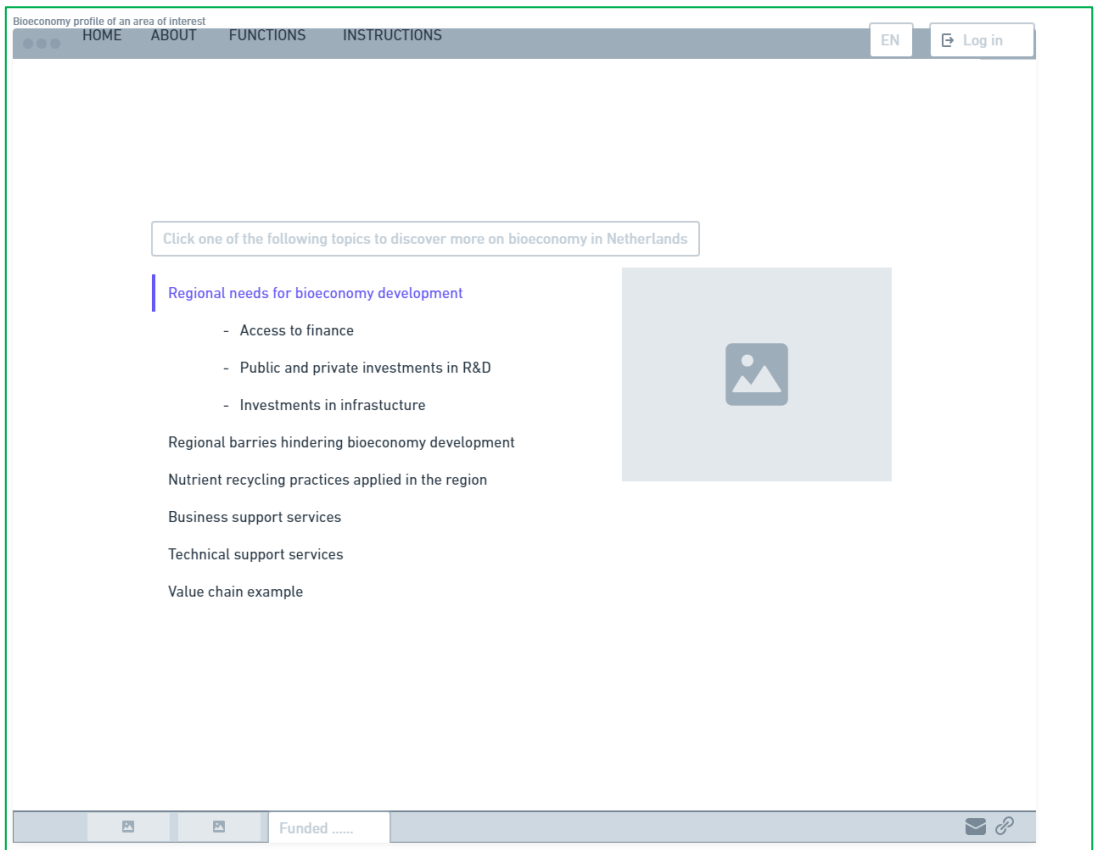


Figure 56: Wireframe of the Bioeconomy profile of one country

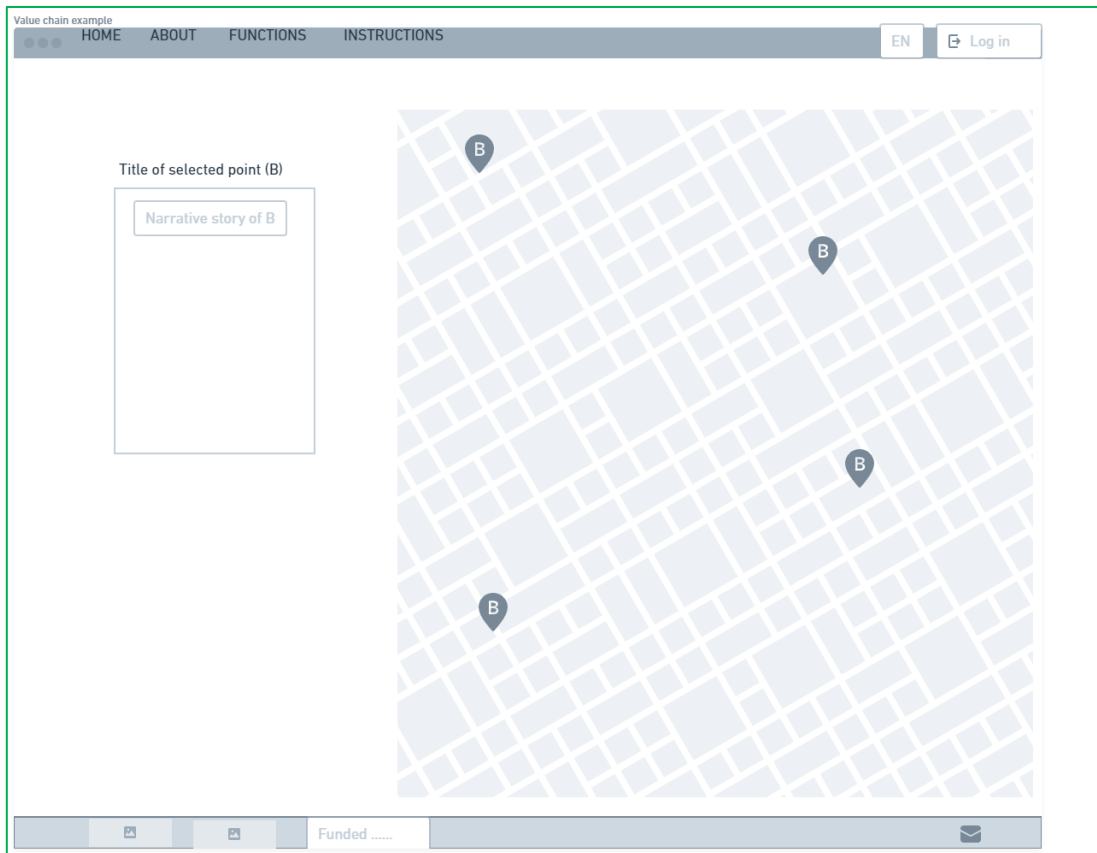


Figure 57: Wireframe of a Value Chain Example

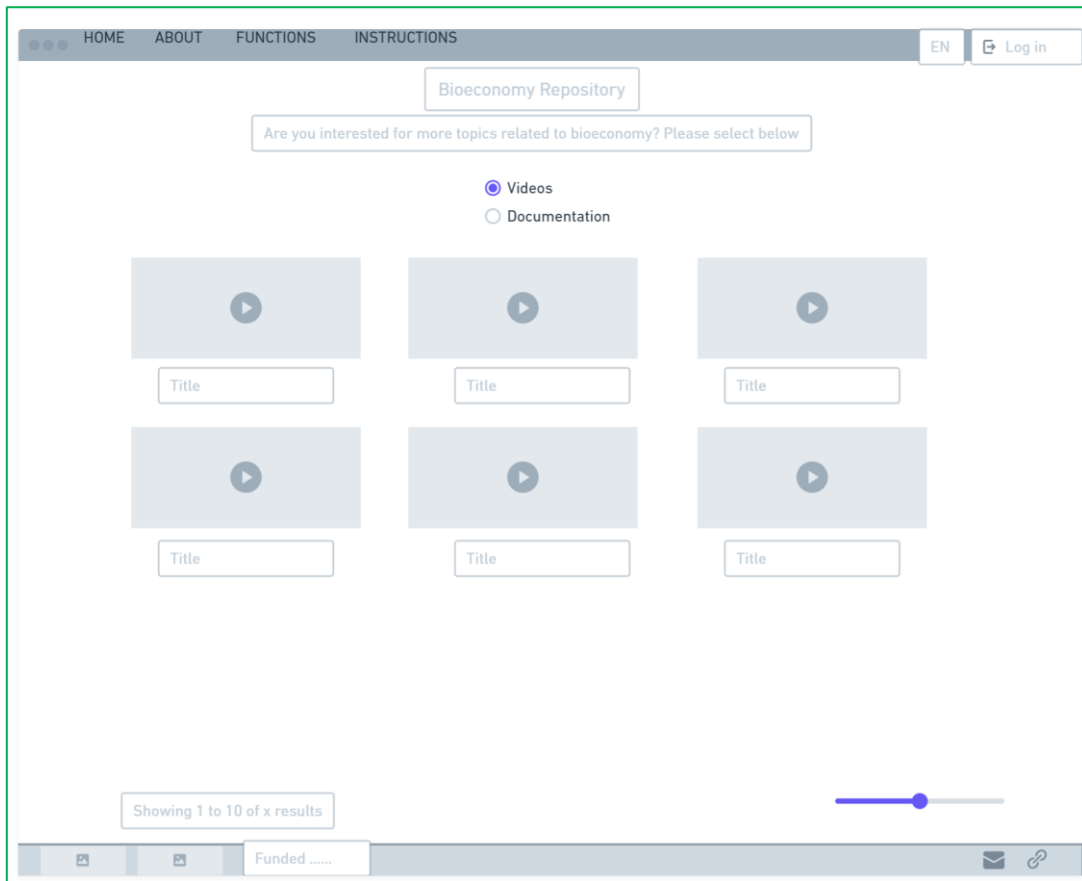


Figure 58: Wireframe of the Bioeconomy Repository with list of the videos

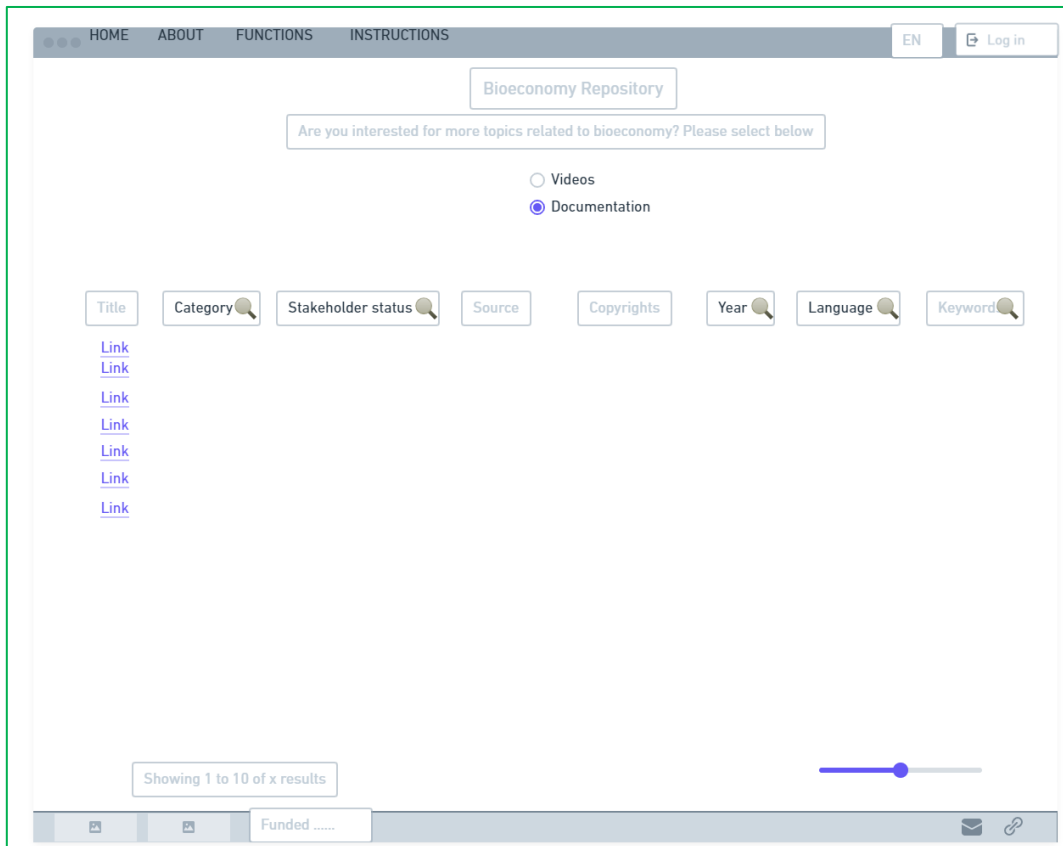


Figure 59: Wireframe of the Bioeconomy Repository with list of the documents

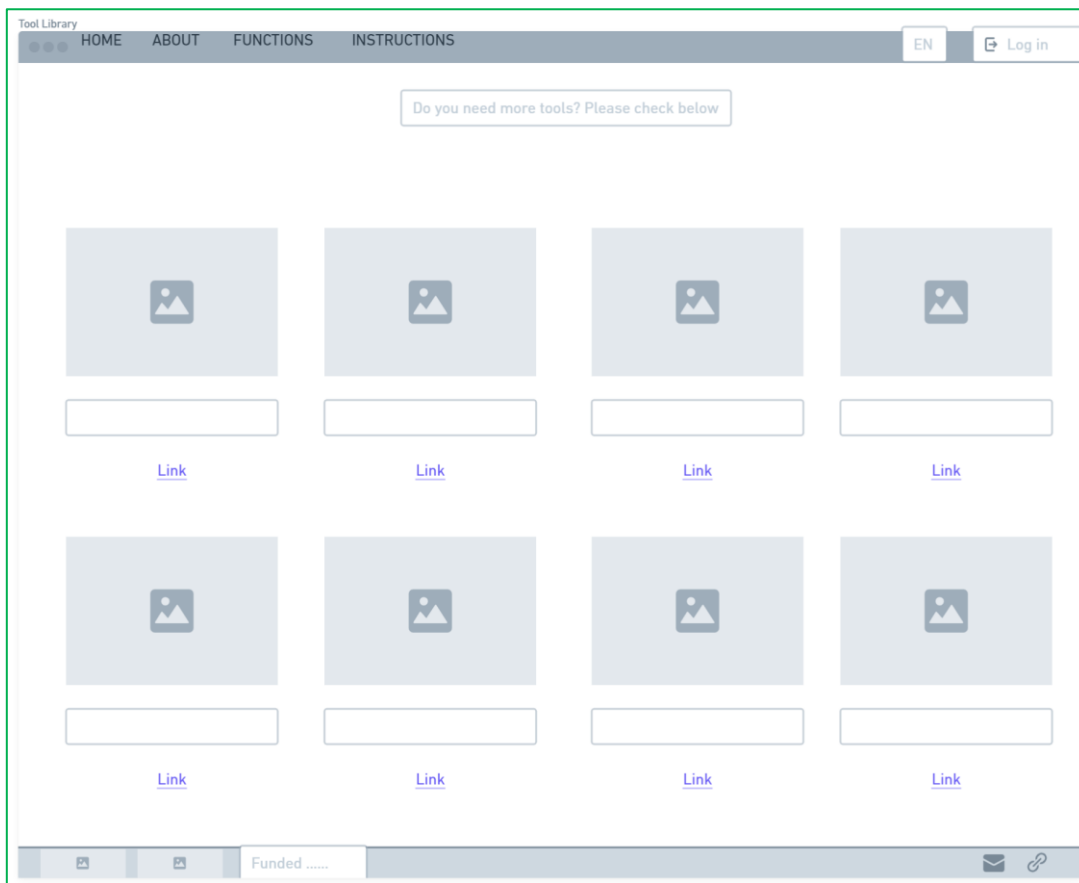


Figure 60: Wireframe of Tool Library page

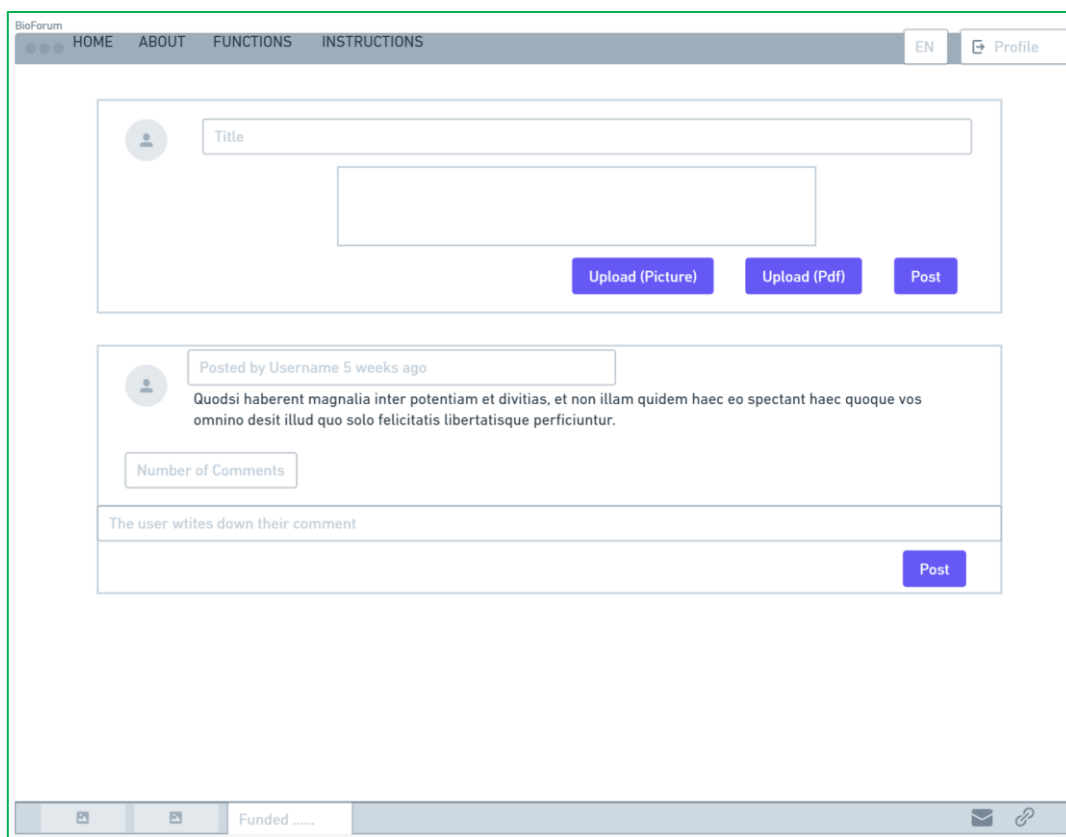


Figure 61: Wireframe of BioForum Page

Figures from 62 to 74 are from Figma.

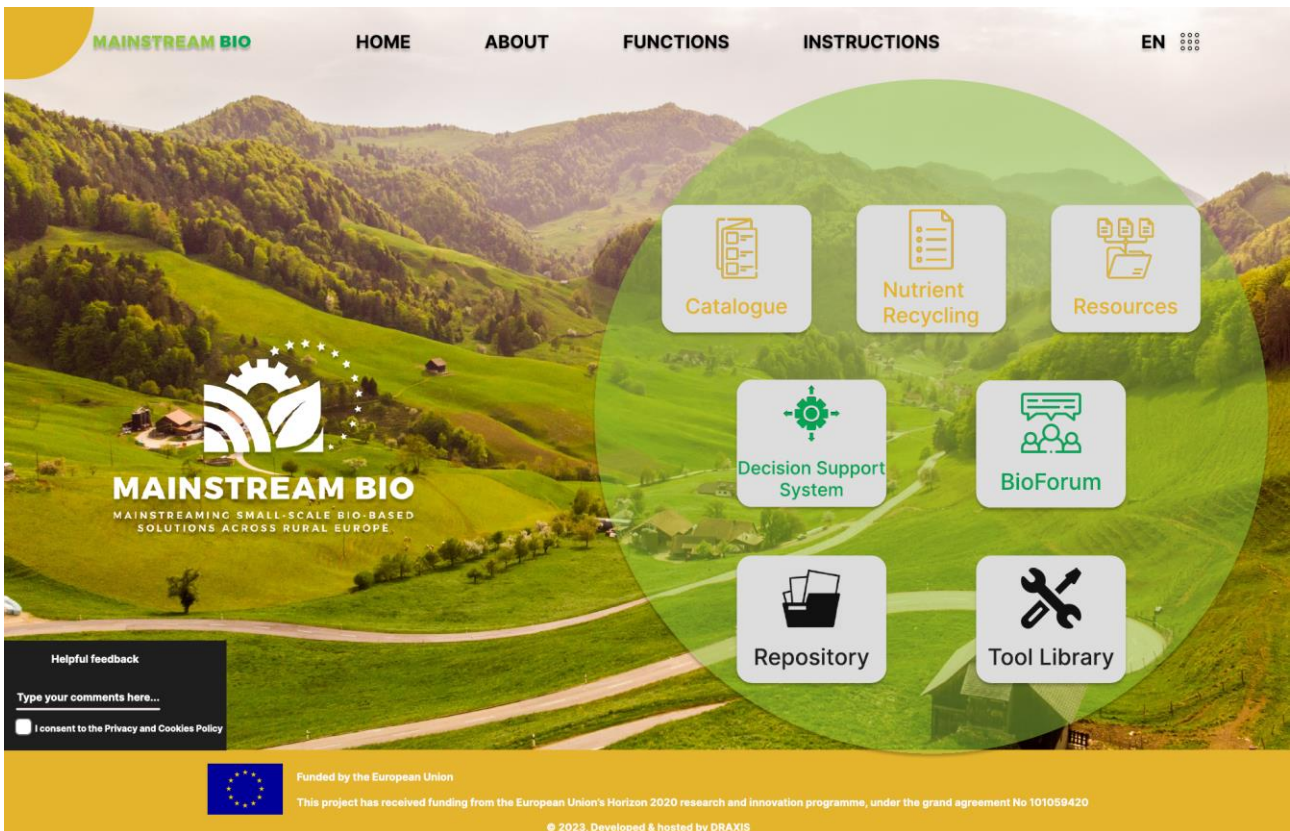


Figure 62: Mockup of Home Page



Figure 63: Mockup of Catalogue (Selection)

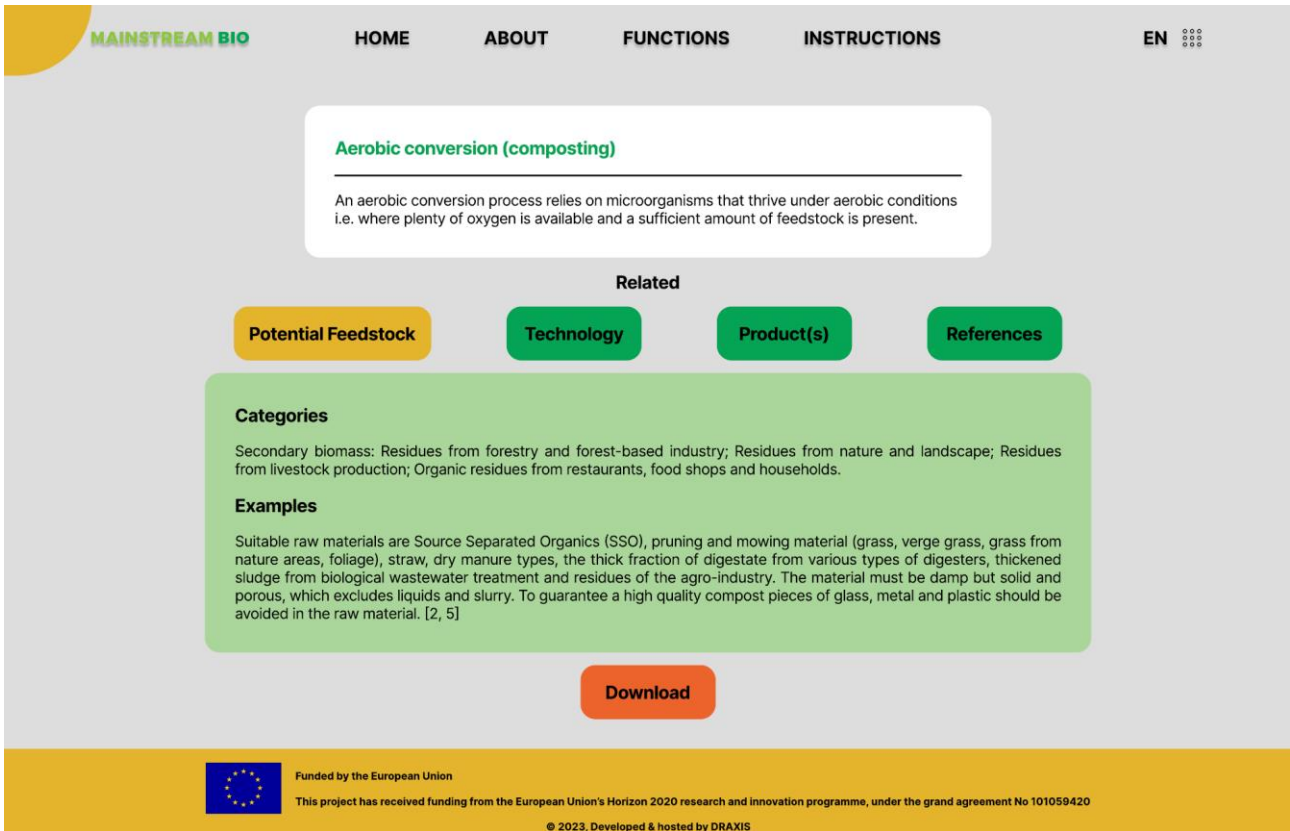


Figure 64: Mockup of Catalogue (Specific – Technology)

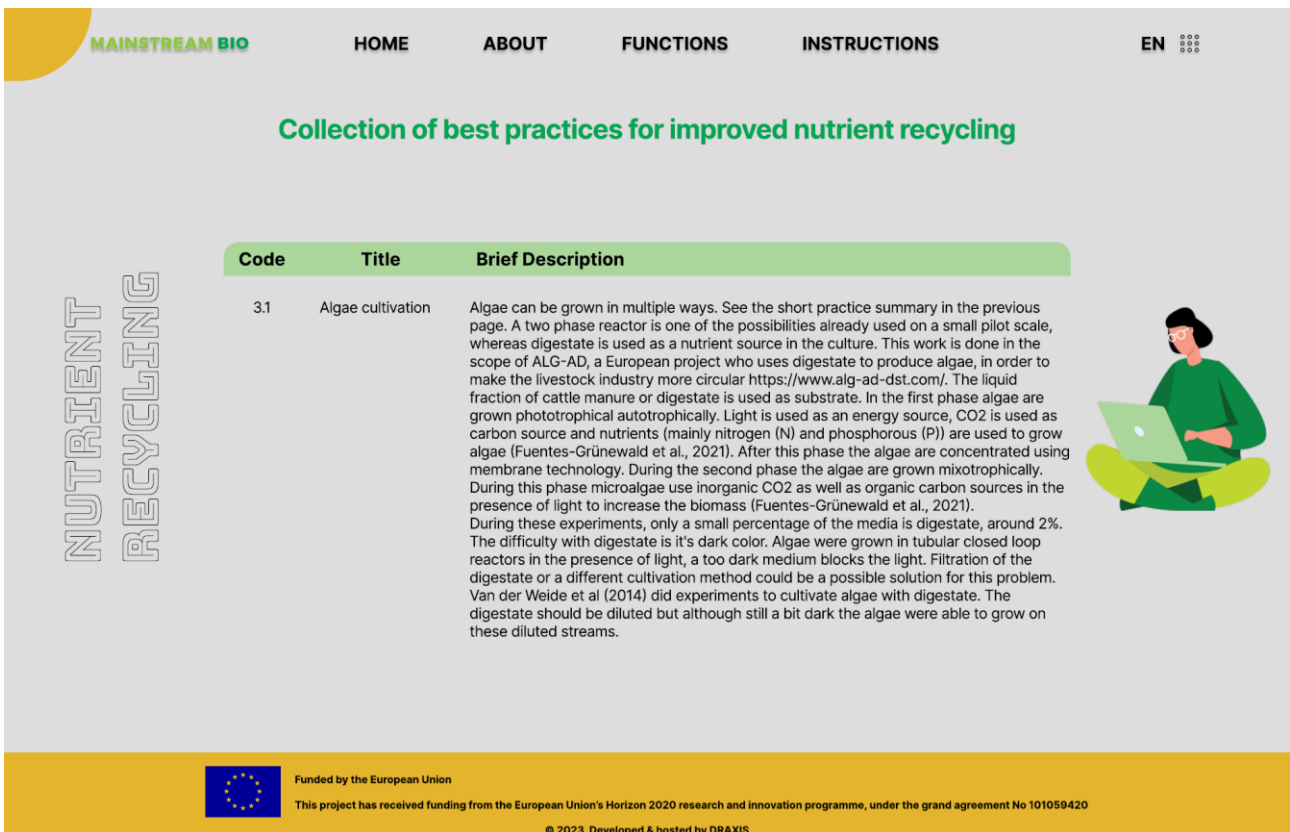


Figure 65: Mockup of Nutrient Recycling Practices (Selection)



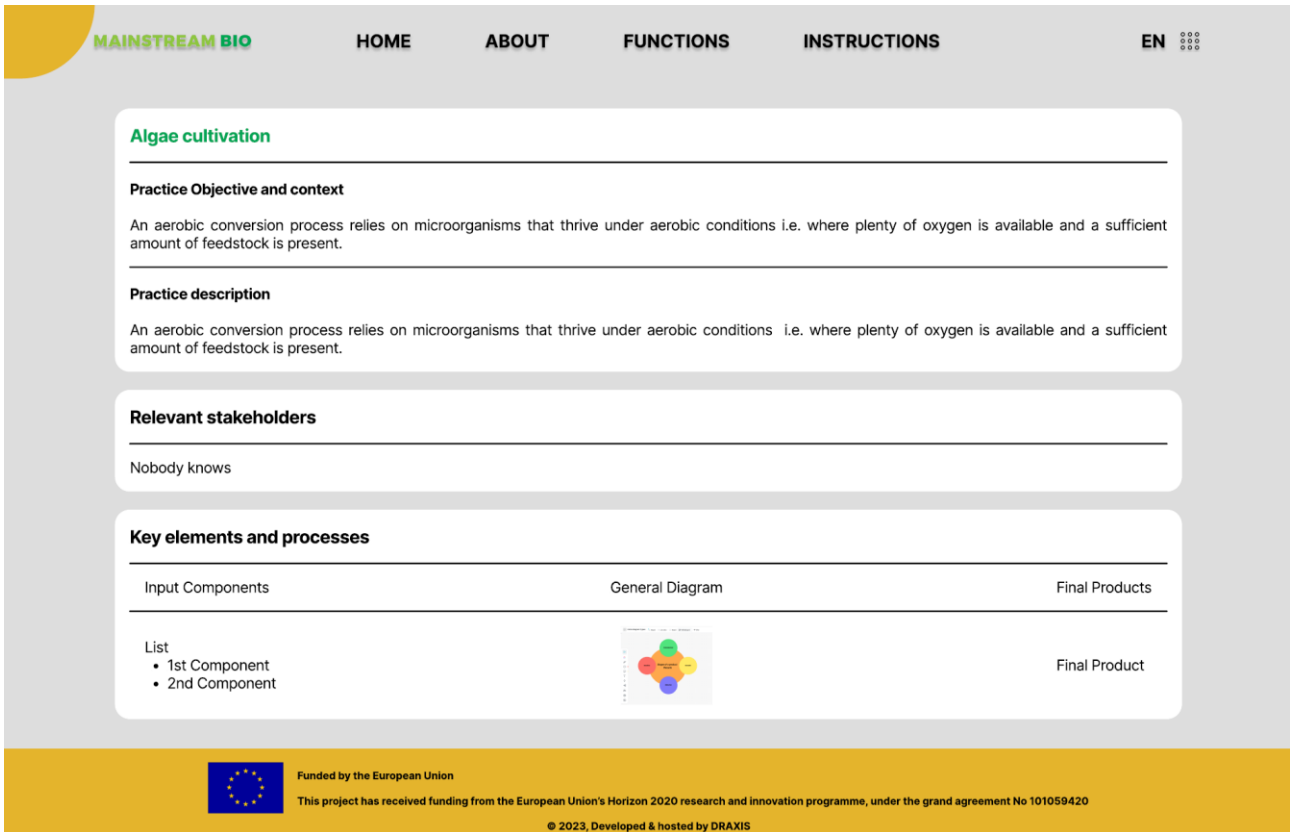


Figure 66: Mockup of Nutrient Recycling Practices (Specific)

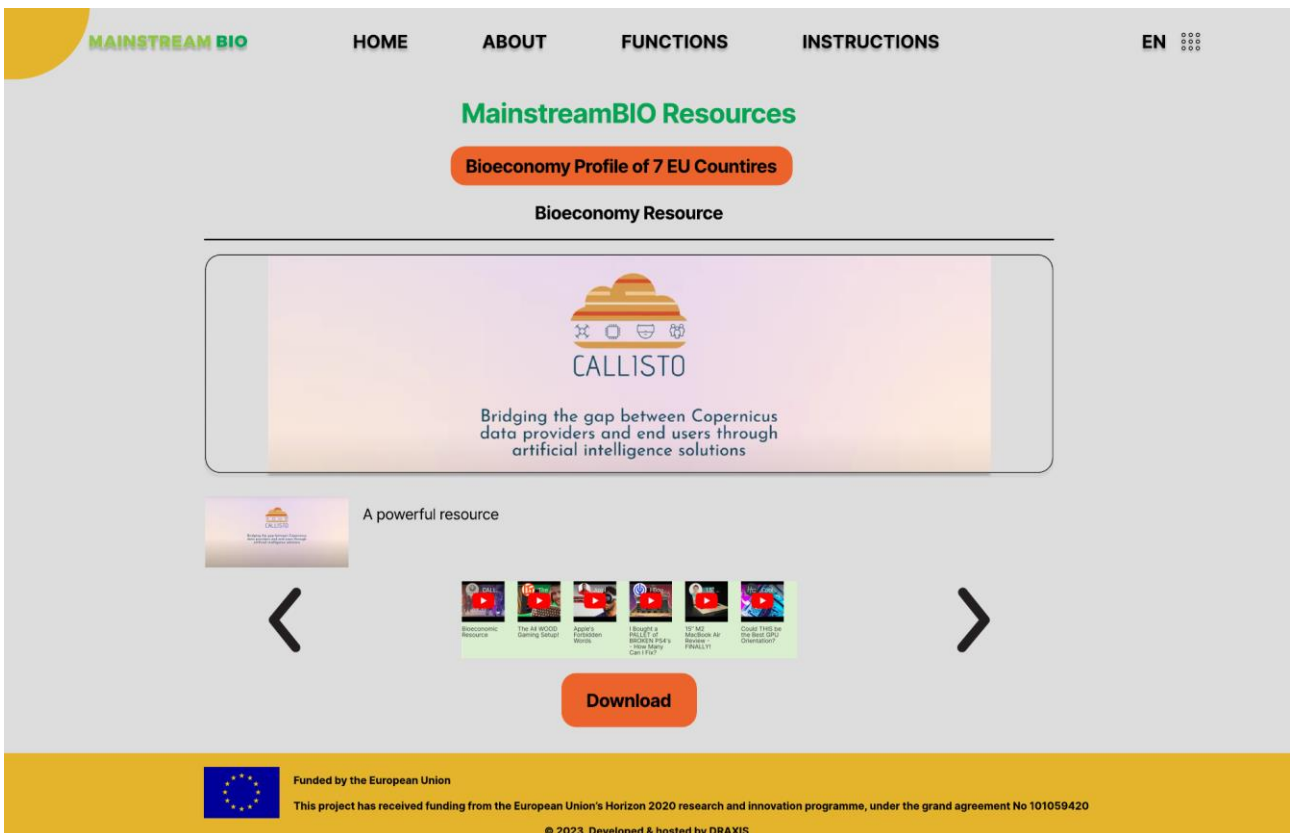


Figure 67: Mockup of MainstreamBIO Resources (Audio/Visual Material)



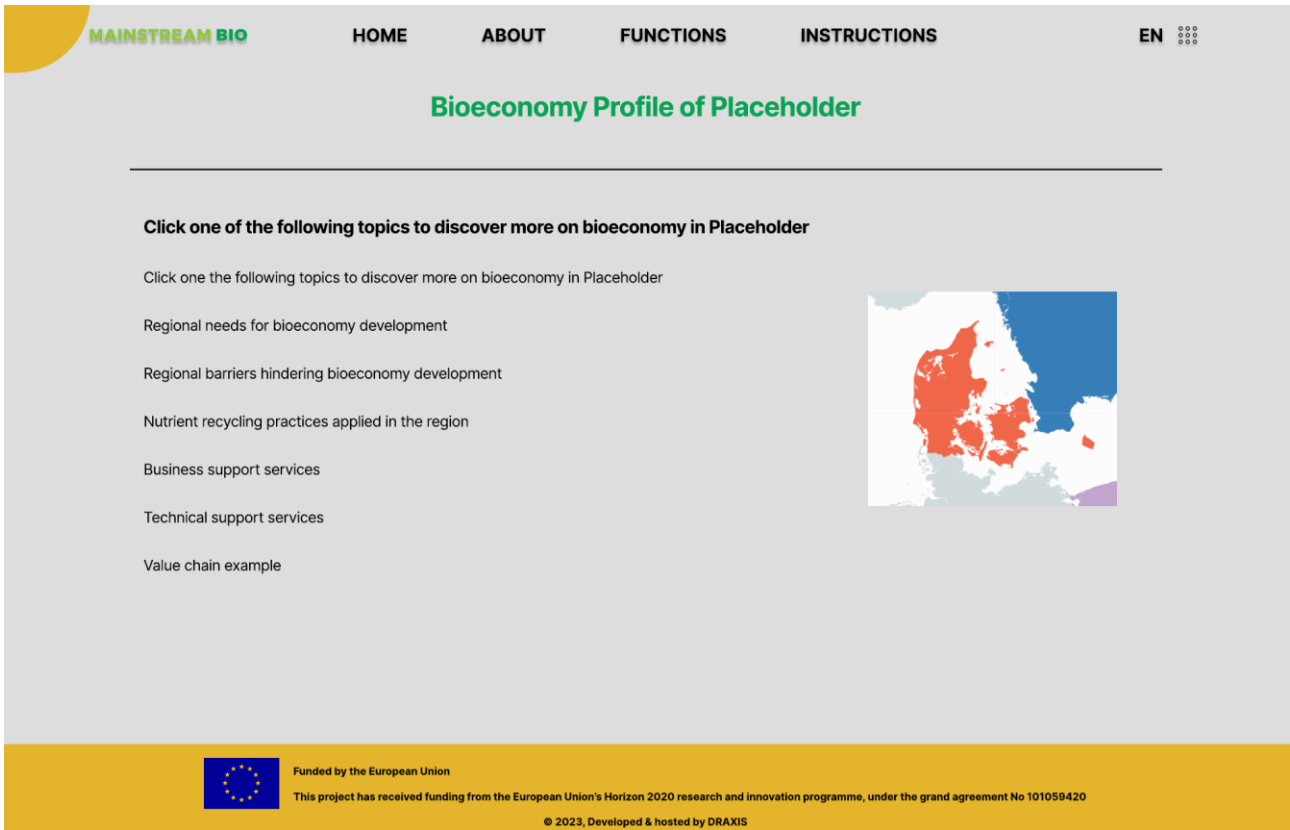


Figure 68: Mockup of MainstreamBIO Resources (Bioeconomy Profile of 7 EU rural communities)

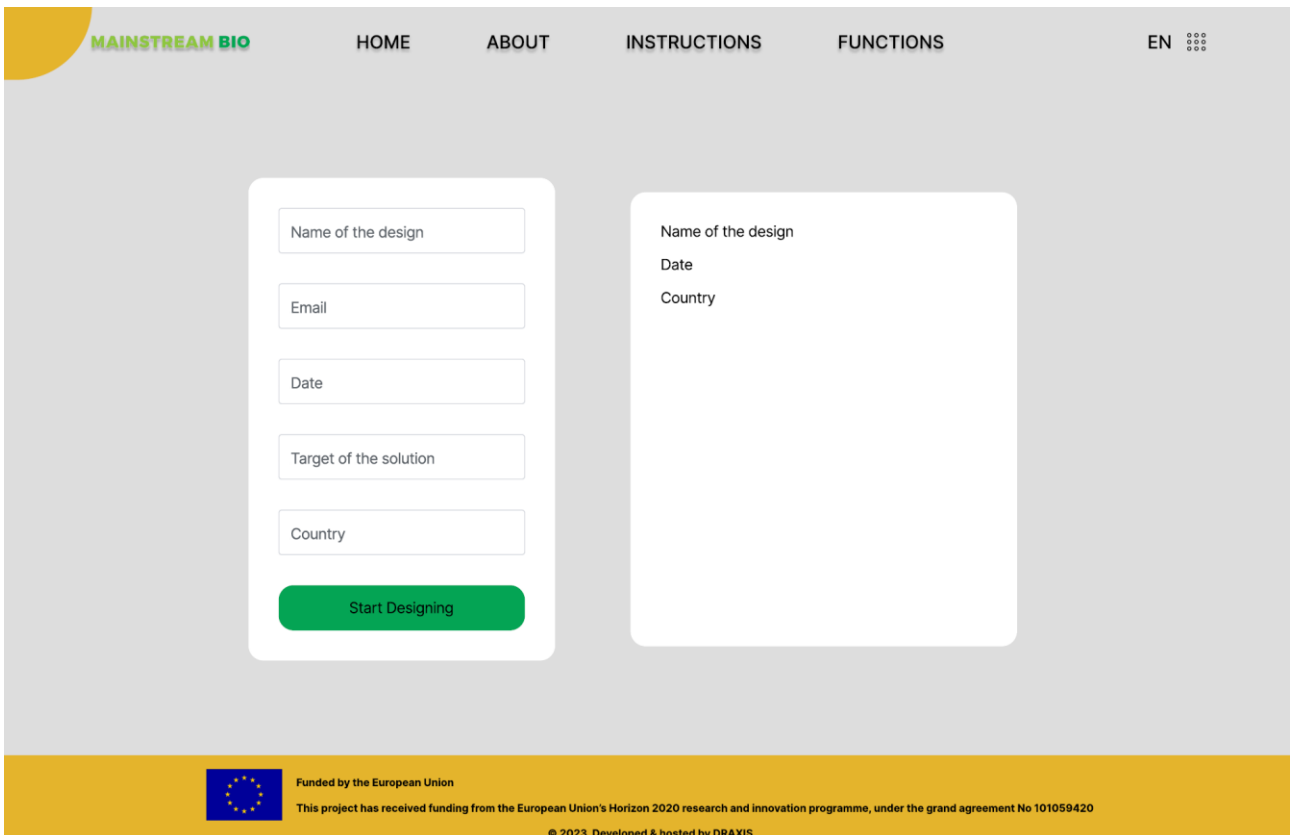


Figure 69: Mockup of DSS (Selection)

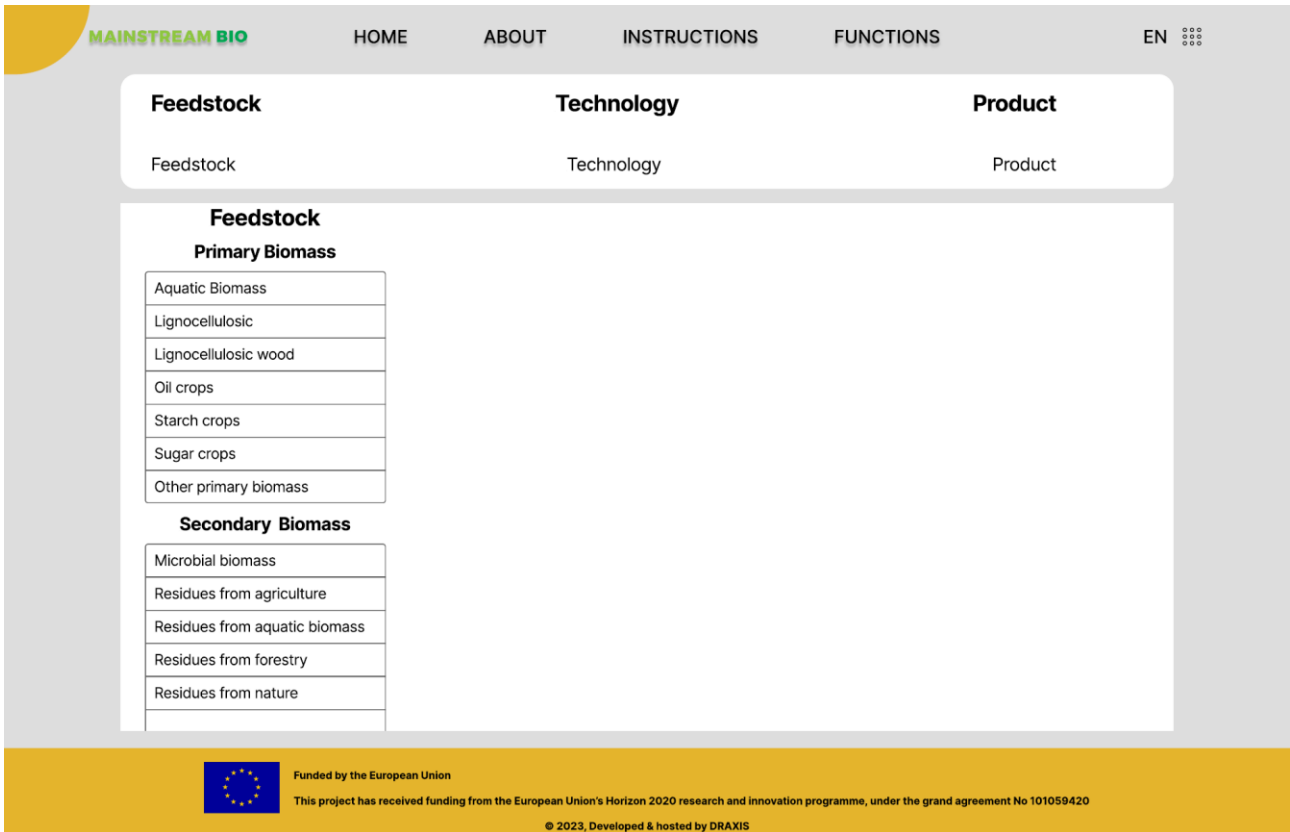


Figure 70: Mockup of DSS (Step 1: Matching Table)

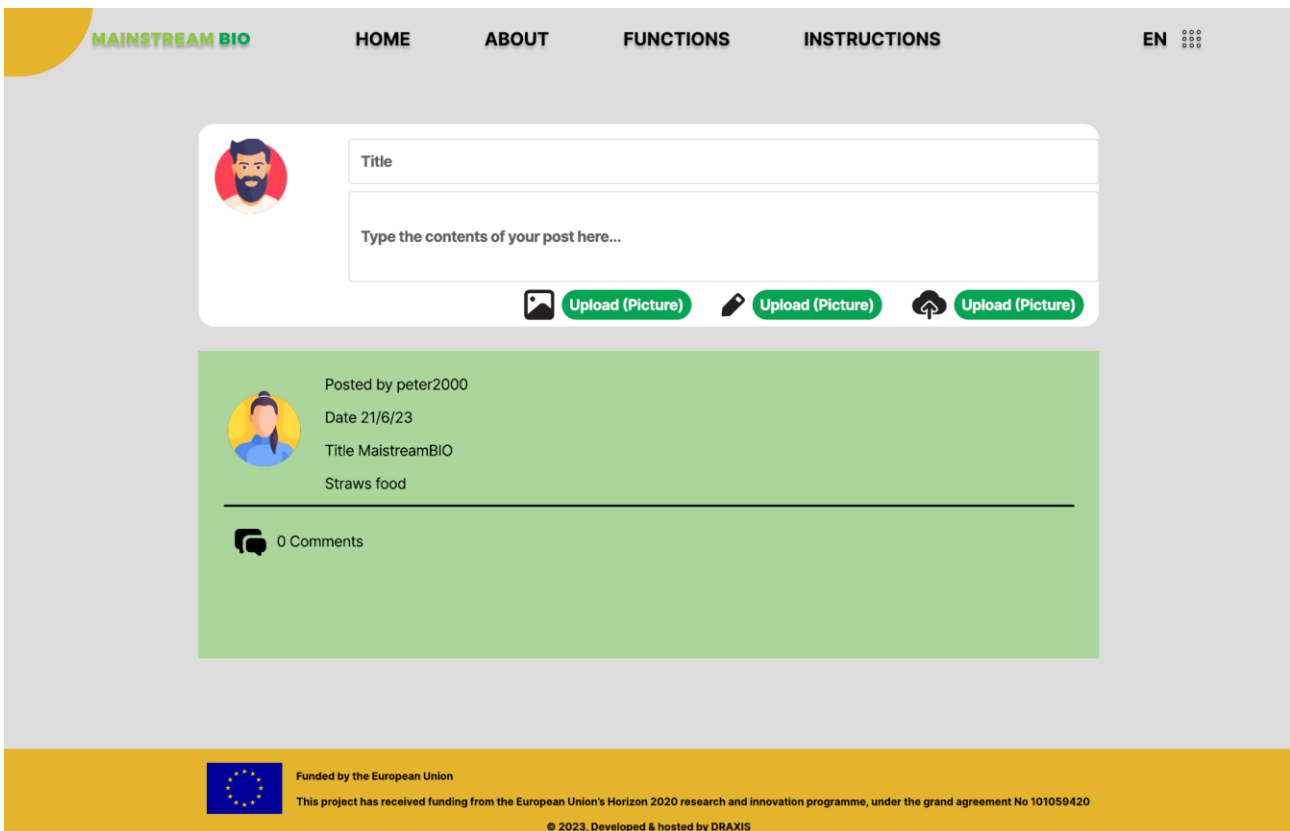


Figure 71: Mockup of BioForum

The screenshot shows the 'Bioeconomy Repository' website. At the top, there is a navigation bar with 'HOME', 'ABOUT', 'FUNCTIONS', and 'INSTRUCTIONS'. The 'MAINSTREAM BIO' logo is on the left, and 'EN' with a grid icon is on the right. The main heading is 'Bioeconomy Repository'. Below it, a question asks 'Are you interested for more topics related to bioeconomy? Please select below'. A green box contains two radio button options: 'Audio/Visual Material' (selected) and 'Documentation'. Below this are seven placeholder boxes for content: 'Bioresource', 'Virtual Toolbox', 'Side stream value tool', 'Toolbox', 'Catalogue', 'Toolbox', and 'IBLC Tool'. At the bottom, a yellow footer contains the European Union logo, funding information, and the year '© 2023, Developed & hosted by DRAXIS'.

Figure 72: Bioeconomy Repository (Audio/Visual Material)

This screenshot shows the same website interface but with a table of search results. The table has the following columns: Title, Category, Stakeholder, Status, Brief Documentation, Source, Copyrights, Year, Languages, and Keywords. One result is visible:

Title	Category	Stakeholder	Status	Brief Documentation	Source	Copyrights	Year	Languages	Keywords
Farming	Pindos	The Greek Company		converts poultry manure into organic fertilizers using aerobic conversion.	Greece				

The footer is identical to the previous screenshot, showing the European Union logo, funding information, and '© 2023, Developed & hosted by DRAXIS'.

Figure 73: Bioeconomy Repository (Documentation)

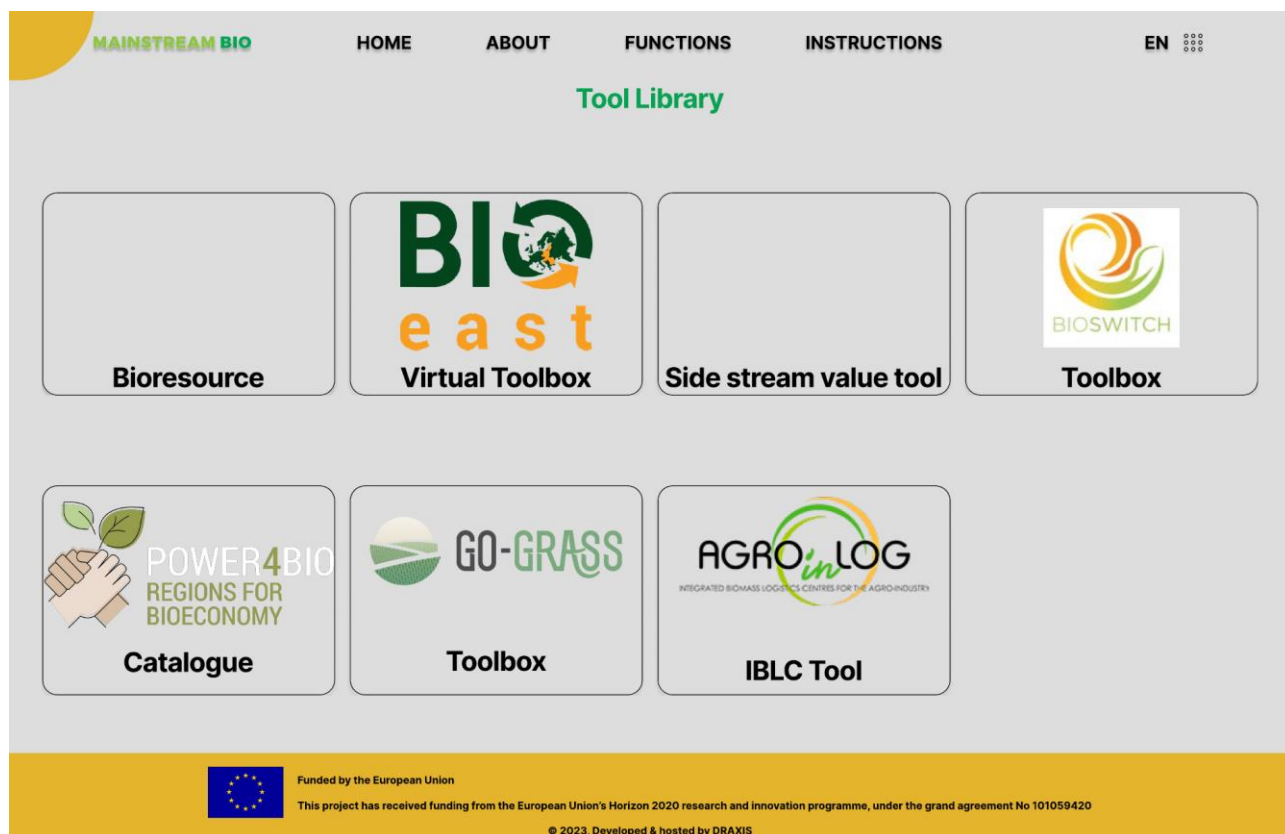


Figure 74: Tool Library













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

## The project

MainstreamBIO is an 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 ADVISORS PC	Q-PLAN
	MUNSTER TECHNOLOGICAL UNIVERSITY	MTU
	STICHTING WAGENINGEN RESEARCH	WR
	INSTYTUT UPRAWY NAWOZENIA I GLEBOZNAWSTWA, PANSTWOWY INSTYTUT BADAWCZY	IUNG
	RISE PROCESSUM AB	PROC
	AGRAREN UNIVERSITET - PLOVDIV	AUP
	FBCD AS	FBCD
	EURIZON SL	INNV
	DRAXIS ENVIRONMENTAL SA	DRAXIS
	WHITE RESEARCH SPRL	WHITE

**CONTACT US** [info@mainstreambio-project.eu](mailto:info@mainstreambio-project.eu)

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MainstreamBio Project



MainstreamBio Horizon Europe Project