





Boosting the adoption of Bio-Based Technologies

DELIVERABLE D2.2

BBTs Assessment Tool – v1

MTU June 2024

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Main Authors	Carmen Girón Domínguez - MTU			
Contributors	Husain Sadeqi - MTU			

Peer reviewers

Reviewer 1	Thomas McCarthy – Teagasc
Reviewer 2	Patrizia Borsotto – CREA
Reviewer 3	Roberto Cagliero – CREA
Coordinator	Carmen Girón Domínguez – MTU

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Table of Contents

1	Inti	roduction	7
2	Cor	ntext of the BBTs Assessment tool in the project	8
	2.1	Composition of the BBTs Assessment tool	9
		2.1.1 'Reference' Scenarios	9
		2.1.2 RR-Specific Scenarios	14
		2.1.3 Validation of the RR-Specific Scenarios (weightage)	
3	Me	thodology	15
	3.1	Conceptual design	15
		Components of the tool	
		3.2.1 Excel sheets	17
		3.2.2 Data Model (Power Pivot)	
4	Usa	age scenarios and functionalities of the tool	31
		Interpretation of results	
5	'Re	ference' scenario information	33
	5.1	Czech Republic	
	-	5.1.1 Information for the "Workshop Answers" sheet.	
		5.1.2 Information for the "TranslateTables" sheet	
		5.1.3 Information for the "Weight" sheet	
	5.2	Greece	70
		5.2.1 Information for the "Workshop Answers" sheet	70
		5.2.2 Information for the "TranslateTables" sheet	79
		5.2.3 Information for the "Weight" sheet	84
	5.3	Ireland	
		5.3.1 Information for the "Workshop Answers" sheet	86
		5.3.2 Information for the "TranslateTables" sheet	
		5.3.3 Information for the "Weight" sheet	102
	5.4	Italy	105
		5.4.1 Information for the "Workshop Answers" sheet	105
		5.4.2 Information for the "TranslateTables" sheet	112
		5.4.3 Information for the "Weight" sheet	117
	5.5	Poland	119
		5.5.1 Information for the "Workshop Answers" sheet	119
		5.5.2 Information for the "TranslateTables" sheet	125
		5.5.3 Information for the "Weight" sheet	
	5.6	Spain	137
		5.6.1 Information for the "Workshop Answers" sheet	
		5.6.2 Information for the "TranslateTables" sheet	148



	5.6.3 Information for the "Weight" sheet	154
6	Conclusions and future works	.159
Refe	erences	.160
Арр	endix I Guidelines for Reference Scenarios	.161

List of Figures

8
9
4
4
6
6
9
1
3
8
C
1
2

List of Tables

Table 1: R <mark>elation of reso</mark> urces for the creation of the 'Reference' Scenarios generated with the BE	3Ts
Assessment tool	10
Table 2: Purpose of Excel sheets	17
Table 3. Table names in the Workshop	19
Table 4. Association of information in "TranslateTables" sheet	21
Table 5: Weight tables and its relationship with other information	24
Table 6: Types of variables and fi <mark>elds</mark> analysed	25



Table of Abbreviations

Abbreviation	Description
АВ	Advisory Board
BBT	Bio-Based Technology
D	Deliverable
FAN	Forest and Agriculture Networks
HLRD	High-Level study of Regional Dynamics
OG	Operational Groups
RPFA	Regional Partners for Forestry and Agriculture
RR	Represented Region
т	Task
WP	Work Package



Executive Summary

This document, titled "BBTs Assessment Tool - v1," outlines the initial version of the Bio-Based Technologies (BBTs) Assessment Tool, detailing its features and the 'Reference' Scenarios for each Represented Region (RR). It describes the tool's integration with project tasks such as the BBioNets knowledge inventory, regional dynamics studies, and workshops for identifying and validating regional needs and BBTs.

The primary objective of the tool is to prioritize the most suitable BBTs for each RR based on userprovided data, enhancing accuracy with more detailed input. The methodology section elucidates the tool's operation, interrelationships of information, and accuracy improvement. A data model created with Power Pivot is explained, showcasing its design and functionality.

The report covers various applications of the tool, results interpretation through a 2-D costeffectiveness plot and presents 'Reference' Scenarios from each region. An annex provides guidelines for partners on using the tool to develop 'Reference' Scenarios.



1 Introduction

This document is the D2.2 "BBTs Assessment Tool - v1". It provides an overview of the functionalities of the first version of the Bio-Based Technologies (BBTs) Assessment Tool and the 'reference' scenario for each Represented Region (RR).

The BBTs Assessment tool is presented in the context of the project, how it interacts with other tasks such as the BBioNets knowledge inventory, the high-level study on regional dynamics (T2.3), the workshops held during T1.2 to identify regional needs and challenges, and the future workshops to be held during T1.3 for the validation and prioritisation of bio-based technologies (BBTs).

The main objective of the tool is to generate a proposed prioritisation of the most appropriate BBT for each RR using the mapped BBTs. The tool is designed so that the more information the user provides, the more accurate the results will be. In other words, the more accurate the suggested prioritisation of BBTs for each RR.

This report comprises six chapters along with references and is organised as follows:

Chapter 1: Introduction which describes issues **conce**rning deliverable scope, objectives, how it is the function in the project, and it briefly presents the structure of deliverable.

Chapter 2: The context of the BBTs Assessment tool which describes how the BBTs Assessment tool fits within the project and a deeply description of terms related to the tool.

Chapter 3: Methodology: this section has been written to explain how it works, how the information relates to each other and why it becomes more accurate as more information is added. A data model has been developed using Power Pivot within the tool and it is explained how it is designed, how the different tables are built, how they relate to each other and a visual representation of how it works.

Chapter 4: Uses of the BBTs Assessment tool: the "Reference" Scenario is explained, as well as how to interpret the results in a 2-D plot of cost-effectiveness variables.

Chapter 5: 'Reference' Scenarios information: 'Reference' Scenarios each region is collected and presented in this deliverable, indicating the basis of the BBTs Assessment tool for each region.

Chapter 6: Conclusion: The last section summarises conclusions on BBTs Assessment tool and on next steps.

The deliverable also includes, as an **annex**, the guidelines written for partners on how to use the BBTs Assessment tool to create a 'Reference' Scenario.



2 Context of the BBTs Assessment tool in the project

The BBTs Assessment tool is an Excel file designed to consolidate data from various BBioNets resources and analyse it through its Power Pivot engine. This process enables the matching of the needs and resources of the Represented Regions (RR) collected in T1.2 with the available Bio-Based Technologies (BBT) mapped in T2.1, with the generation of a **suggested prioritisation of the most suitable BBTs for said region**. The tool considers both quantitative (investment costs, operational costs, processing capacity, etc.) and qualitative (added value, process complexity, etc.) variables to analyse cost/benefit for each BBTs.

The tool has been designed in such a way that the more information the user provides, the more accurate the results will be. In other words, the more accurate suggested prioritisation of BBTs would be obtained for each RR.

As illustrated in Figure 1, the BBTs Assessment tool will commence by incorporating data from tasks T1.2 and T2.1, namely the outputs of the Forestry and agricultural Network (FAN) workshop and the inventory of BBTs. This information, once introduced into the Excel tool, will facilitate the generation of a preliminary list with the suitability of the BBTs found until date, considering the current resources and needs of a single region, or 'Reference' Scenario. A total of six copies of the BBTs Assessment tool will be created, along with six distinct Represented Region-Specific Scenarios (RR-Specific Scenarios). These will contain information that will assist partners in identifying the BBTs that are most needed in each RR.

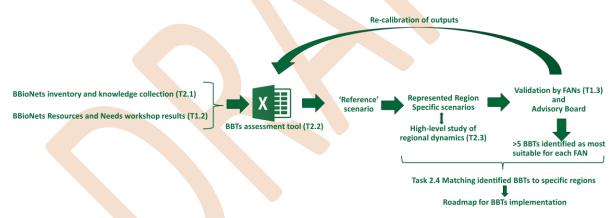


Figure 1. Relation of tasks and BBTs Assessment tool outputs per Represented Region.

Once the 'Reference' Scenario has been generated for each RR, the process of producing the Represented Region-Specific Scenarios will commence. To achieve this, the High-level study of regional dynamics (HLRD; T2.3) and the BBTs Assessment tool (T2.2) will be employed in a process of information sharing. Nevertheless, the RR-specific scenarios would not be finalised until they have undergone two levels of validation. Firstly, the FANs of each RR would validate them (T1.3). Secondly, the BBioNets Advisory Board would also give a validation. This validation will introduce a weighting factor in the Excel tool, which will enable the recalibration of the previous outputs. This will result in the generation of a final prioritisation list of BBTs, comprising at least five BBTs suitable for each RR.

Subsequently, these outputs will be collated by T2.4 in a roadmap for the implementation of the prioritised BBTs in each Represented Region.



The following section defines the 'Reference' Scenario, the RR-Specific Scenario and the validation.

2.1 Composition of the BBTs Assessment tool

The following section provide the logic of the tool by breaking it down into its three main parts, namely: 'Reference' Scenarios, RR-Specific Scenarios and 2.1.3 Validation of the RR-Specific Scenarios.

2.1.1 'Reference' Scenarios

The 'Reference' Scenarios is the first output of collection of information, and it is introduced in the BBTs Assessment tool in T2.2. This information is both the Inventory Knowledge collection, from T2.1 and the FAN Workshops outputs generated in T1.2 (Figure 2).

BBioNets inventory and knowledge collection (T2.1)

BBioNets Resources and Needs workshop results (T1.2)



Figure 2. 'Reference' Scenario representation.

Prior conducting the FAN Workshops (T1.2) in each RR and the gathering information for the Inventory knowledge collection started (T2.1), the leaders of both tasks (Teagasc and CREA) met with MTU to align ideas and collect information that are also necessary for the implementation of the BBTs Assessment.

In the Table 1 it is represented, row by row, the relation of the fields from the Inventory knowledge collection, the questions from the FAN Workshops outputs and the BBTs Assessment tool's table. The name of each table and the information it stores is indicated.

In Section 5 there is collected the 'Reference' Scenario information per each RR in form of screenshots of the BBTs Assessment tool.



BBioNets Resources and Needs workshop results (T1.2)	BBioNets inventory and knowledge collection (T2.1)	tion BBTs Assessment tool	
Question	Field	Information analysed	<u>Table</u> <u>names</u>
FAN REGION	Region OG/PROJECT	Country / Region	n/a
	Reference sector (NACE Section A - Agriculture, Forestry and Fishing; group level)	Type of feedstock processed by the BBT	T1.1_t
Q1. What are the primary or secondary resources available in your representative region?	Key Word (Guidelines on EIP OG)		T1.2_t
	Categories: Bioeconomy fields (Escobar & Lainbach, 2021)		T1.3_t
	Feedstock (Biomass / Biomass residues / wastes)		T1.4_t
	Value chains (Assessment: Feedstock are abundantly available or not)		T1.5_t
Q2. What processing equipment is currently being	Description BBT (narrative synthesis)	<i>Key words to search on inventory about the equipment/machinery</i>	T2.1_t
used in your representative region?	Intended user / conditions of access. (narrative synthesis)	used in the BBT and the "conditions" to use the BBT	T2.2_t
Q3. What secondary products/by-products are currently being generated in your representative region?	Outcomes and final product (narrative synthesis)	Key words to search on inventory about the biomasses produced from the BBT	T3_t

Table 1: Relation of resources for the creation of the 'Reference' Scenarios generated with the BBTs Assessment tool.



Q4. What is your representative region's processing needs regarding primary and secondary resources? (identified needs should be ranked from high to low)	Needs / Problem statement (narrative synthesis)	Problem statement/Context of the creation/use of the BBT with the biomass *Manual weightage added after human's analysis*	W4_t
Q5. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN members interact with (ha): e.g. 10 – 400 ha		Quantity of feedstock to	T5.1_t
Q5. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest size of the stakeholders which FAN members interact with (ha):			T5.2_t
Q5. What is the size/total area of the farm or forest in your representative region? National statistics data: Average farm size (ha):	Processing Capacity (T/day) ** additional in	potentially be processed by the BBT. ** additional information is needed to be added for this **	T5.3_t
Q5. What is the size/total area of the farm or forest in your representative region? National statistics data: Average forest size (ha):			T5.4_t
Q5. What is the size/total area of the farm or forest in your representative region? National statistics data: Region total farmed area (ha):			T5.5_t



Q5. What is the size/total area of the farm or forest in your representative region? National statistics data: Region total forest area (ha):			T5.6_t
Q6. How much would the farmers/foresters in your representative region be willing to invest in the short-term time (2 years) to implement a technology or practice that would help them process their current resources into bio- products/by-products? Range €	Investment cost (€)	Investment costs (€)	T6.1_t
Q6. How much would the farmers/foresters in your representative region be willing to invest in the long-term time (5 years) to implement a technology or practice that would help them process their current resources into bio- products/by-products? Range €	investment cost (e)		T6.2_t
 Q7. What return on investment period (number of years) is acceptable for investment in a biobased technology? Please provide an average value of FAN and a range of values (years). 	Return of investment (€ or Year)	Return of investment (years)	T7_t
Q8. What key stakeholders are you currently interacting/collaborating with?			T8.1_t
Q8. Nature of collaboration: e.g. advisory	Type of partners	Stakeholders Involved	T8.2_t
Q8. Type of collaboration: open or closed to new members or partners.			T8.3_t
Q9. Where do you go for information in your region?	n/a *This information is useful for WP3*	n/a *This information is useful for WP3*	n/a



Q10. What are the most significant environmental impacts in the region worrying your sector (forest/agriculture)?	C Sink (Assessment on directly supporting CO ₂ sequestration (capturing and storage))	Environmental considerations of the BBT	T10.1_t
Q10. What are the most significant environmental impacts in the region worrying your sector (forest/agriculture)?	Sustainability – environment		T10.2_t
Q11. What ideas do you have for involving women, the unemployed, and the youth in this area?	Sustainability – socio	Benefits/impacts for society from implementing the BBT	T11_t
Q12 Thinking about the current resources and needs identified, what improvements could be implemented to make the process more circular?	n/a *This information is useful for T2.4*	n/a *This information is useful for T2.4*	n/a
Q13 Do you know of a more circular approach/technology that will help your RR work in a more circular way?	n/a *This information is useful for T2.4*	n/a *This information is useful for T2.4*	n/a



2.1.2 RR-Specific Scenarios

The RR-Specific Scenarios is the second output of collection of information. A second layer of information is added to the BBTs Assessment tool in T2.2. This second layer of information is the Highlevel study of Regional Dynamics (Figure 3). Information from the HLRD study will be added to the BBTs Assessment tool during T2.4.

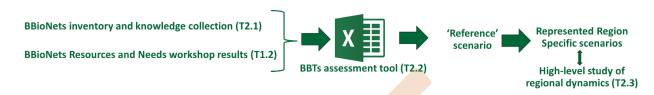


Figure 3. RR-Specific Scenario representation.

Prior conducting the definition of the HLRD, CTA and MTU met to align ideas and collect information, so the BBTs Assessment tool could analyse them.

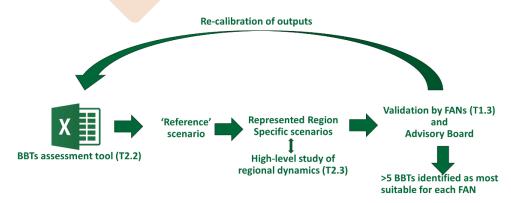
As the HLRD gathers specific information from each region (economic indicators, characterization of the operational groups (OG) of the region, and the BBTs already established, etc.), which will help the BBTs Assessment tool during T2.4 improve the prioritisation of the suggested BBTs according to the region's capabilities.

2.1.3 Validation of the RR-Specific Scenarios (weightage)

The validation of the RR-Specific Scenarios comes from the need of verify with FAN members and the BBioNets Advisory Board (AB) the pre-selection of BBTs identified as most suitable for each region.

FAN's feedback will come from the T1.3, where inputs on currents variables and pre-selection of BBTs will be given. This will be interpreted by the BBTs Assessment tool as weightage information, that will serve as an input to the "Weight" Excel sheet. This weightage information will be obtained from further workshops celebrated in each region and implemented in the tool during T2.4. BBioNets Advisory Board feedback will come in the form of a revision of the BBTs identified per each region, gathered through a document that will be prepared for this purpose.

In the end, the validation phase will recalibrate said preliminary selection of BBTs through weightage and prioritisation, thus generating the final suggested prioritisation of the most suitable BBTs for each Represented Region (Figure 4).





3 Methodology

To generate a suggested prioritisation of the most suitable BBTs for each RR, an Excel Tool template has been developed, which will be used in each region, hence, each RR will have their own BBTs Assessment tool copy. Eventually, these copies will be merged into one interactive file for public use.

The following subsections provide an explanation of the way this Excel tool template has been designed, its components and its interactions.

3.1 Conceptual design

The BBTs Assessment tool will work with 5 background sheets (Figure 5). First, the list of BBTs from the inventory (T2.1) is copied into the assessment tool in the "Inventory copy" sheet. At the same level, the answers from the FAN workshops (T1.2) are also copied into the "Workshop Answers" sheet. In the final version of the BBTs Assessment tool, in the "Weight" sheet, the weighting of preferred BBTs and variables from subsequent FAN workshops (T1.3) will be added. The fourth sheet, "Translate Tables", is used by the partners to add additional information that will help to homogenise the different resources (inventory and workshops). Finally, in the final version of the BBTs Assessment tool, an extra sheet will be added to the tool to include information from the High-level study of Regional Dynamics.

The tool gathers all the background information in a series of tables in the "Data Model" sheet. This sheet is designed solely to have all background information formatted as Tables, so Power Pivot can read and work with the information. All calculations are made in the Power Pivot Data Model feature of MS Excel.

Finally, these calculations are reflected in the "Alignment" sheet. This sheet holds a manually built PivotTable with all the calculated fields, holding weightages per each BBT listed. Then these individual weights are added up per BBT and per effectiveness or cost, depending on which variables are considered for effectiveness and which are considered for cost. In the "Chart" sheet, these results are represented in a 2-D plot graph.

As mentioned above, this tool will hold more information as the project progresses. In Figure 6 it is represented which part of the model represents the information collected for the 'Reference' Scenario in contrast to the RR-Specific Scenarios and Validation. At the beginning of T2.2 it was developed the whole concept, development of the tool, inclusion of Inventory information, FAN workshop answers (T1.2), part of the weightages, and adding information manually in the "TranslateTables" sheet. When T2.4 starts, the tool will be updated and revised, weightages information will be added, as well as the inclusion of information from the HLRD study. This will generate the updated version of the list of BBTs prioritised per RR and a final chart.

The next subsections will delve into the specificities of each Excel sheet and how they interact with each other.



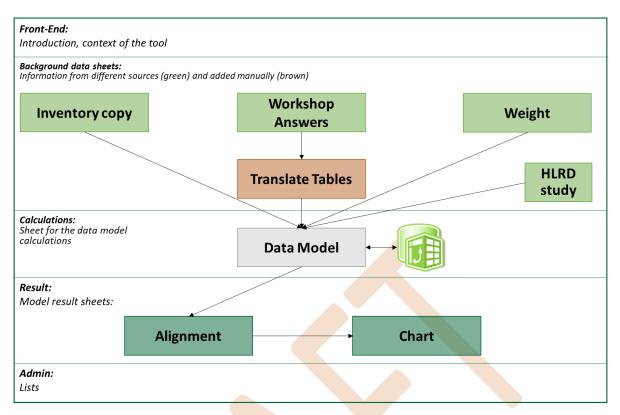


Figure 5. Concept design of the BBTs Assessment tool

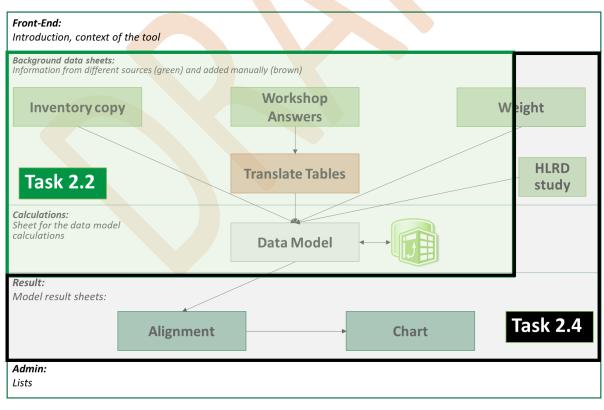


Figure 6. BBTs Assessment tool concept regarding project tasks



3.2 Components of the tool

As previously stated, the tool utilises the Power Pivot engine to analyse the information. Microsoft defines Power Pivot as an Excel add-in that enables users to perform sophisticated data analysis and create complex data models. In both Excel and Power Pivot, users can create Data Models, which are collections of tables with interrelated data¹.

In this context, Power Pivot enables users to link information stored in Excel tables to generate automated, pre-defined analyses, pivot tables and charts, namely automatic output tables and charts.

The following subsections will first clarify the type of tables contained in each Excel sheet, thus helping the BBioNets partner to understand and locate the relevant information from different resources. On the other hand, the Data Model created with Power Pivot is explained, giving details of how the tables interact with each other.

Finally, for the purpose of this deliverable, it was created a methodology for navigating through these Excel sheets to create a 'Reference' Scenario, for partners to follow while using the BBTs Assessment tool during T2.2. These instructions are explained in Appendix I Guidelines for Reference Scenarios.

3.2.1 Excel sheets

The Excel file contains nine (9) Excel sheets so far: an Introduction sheet, a copy of the Inventory Knowledge Collection sheet, the Workshop Results sheet, the Association of Results sheet, the Weighting sheet, the Data Model sheet, the Alignment sheet, the Chart sheet and the Lists sheet.

The Table 2 clarifies the purpose of each Excel sheet and whether it is intended to be used during T2.2 or T2.4.

Excel Sheet name	Purpose	Used during T2.2?	Used during T2.4?
Introduction	Introduce the user to the BBTs Assessment tool	Yes	Yes
Inventory copy	This Excel sheet is designed to hold the most up-to- date information available from the Inventory Knowledge Collection (T2.1) and allow the tool to use it for analysis.	Yes	Yes
Workshop Answers	This Excel sheet holds the answers from the Resources and Needs workshop from 1 Represented Region	Yes	Yes*
TranslateTables	This Excel sheet will start to link the workshop outputs with the inventory of BBTs. It has 4 subsections, as this mapping or translation of outputs will be done in 4 different ways.	Yes	Yes*

Table 2: Purpose of Excel sheets.

40896795d045#:~:text=Power%20Pivot%20is%20an%20Excel,rapidly%2C%20and%20share%20insights%20easi



¹ <u>https://support.microsoft.com/en-us/office/power-pivot-powerful-data-analysis-and-data-modeling-in-excel-a9c2c6e2-cc49-4976-a7d7-</u>

Weight	This Excel sheet will contain the information from the validation workshops with the FANs (T1.3) and the Advisory Board. The aim is to recalibrate this preliminary version through weighting and prioritisation to produce the final proposed prioritisation of the most appropriate BBT for each Represented Region.	Only 1 table will be used	Yes*
Data Model	This Excel sheet contains the final tables that will feed into the Power Pivot model, with all the information automatically added from the other Excel sheets.	Yes	Yes*
Alignment	This Excel sheet is the result of the Power Pivot model after comparing information from the related tables and weights. It contains a pivot table with the results of the calculations.	Only preliminary info, not definite.	Yes
Chart	This Excel sheet represents the prioritised list of BBTs for the RR.	Only preliminary info, not definite.	Yes
Lists	This is an admin Excel sheet that holds static information used in all other Excel sheets and Power Pivot.	Yes	Yes

*This will be updated if needed for T2.4.

In the following subsections it will be explained the specific information that the PowerPivot Data Model uses from the Excel sheets.

3.2.1.1 "Inventory copy" sheet

The "Inventory copy" sheet is not a real table that Excel reads, it is just a copy of the Inventory Knowledge Collection (T2.1). For Power Pivot to use this information, areas of information in this sheet have been defined as 'names' to use the Inventory information by Inventory fields. In other words, the most relevant inventory fields (cell ranges) have been assigned a name to address their information for the calculation. The inventory fields selected for the tool has been:

- Reference Sector
- Processing Capacity
- Outcomes
- Needs and problem statements
- Key word
- Investment
- Intended user
- Description of the BBT
- BBT codes.



The screenshot below (Figure 7) shows the names created from the Inventory sheet and the cell ranges to which each name is assigned.

<u>N</u> ew <u>E</u> dit <u>D</u> elete			Eilter	•
Name	Value	Refers To	Scope	
Total_ReferenceSector	{"A1.6Suppor	=Inventory_copy!\$K\$4:\$K\$144	Workbo	1
Total_ProcessingCapacity	{"24";"0.1";"1	=Inventory_copy!\$AO\$4:\$AO\$144	Workbo	
Total_Outcomes	{"Press Cake,	=Inventory_copy!SAMS4:SAMS144	Workbo	1
Total_Needs_Problem_statement	{"To improve t	=Inventory_copy!\$L\$4:\$L\$144	Workbo	
Total_KeyWord	{" Climate cha	=Inventory_copy!SAE\$4:SAE\$144	Workbo	
Total_Investment	{* 3,500,000.0	=Inventory_copy!\$BJ\$4:\$BJ\$144	Workbo	
Total_IntendedUser	{"primary pro	=Inventory_copy!\$A\$\$4:\$A\$\$144	Workbo	1
Total_Description_BBT	{"Perennial ry	=Inventory_copy!SIS4:SIS144	Workbo	1
Total_BBT_Codes	{"IE10-Biorefi	=Inventory_copy!\$C\$4:\$C\$144	Workbo	1
efers to:			·	
Introduction!\$B\$11				

Figure 7. Screenshot of Excel's Name Manager with detail of the Names created in the Inventory sheet.

3.2.1.2 "Workshop Answers" sheet

As explained, this sheet holds the answers from the FAN workshops (T1.2), hence the tables are aligned with the questions asked in the workshops, to hold said answers. This sheet does hold real tables readable by Power Pivot (made by selecting an array of cells and then pressing with Ctrl + T). In Table 3 it is clarified the name of said tables and to which questions they relate to, and in Figure 8 it can be appreciated a screenshot of this sheet in the model.

Table names in the "Workshop Answers" sheet	BBioNets FAN workshop (T1.2) questions	
Q1_t	Q1. What are the primary or secondary resources available in your representative region?	
Q2_t	Q2. What processing equipment is currently being used in your representative region?	
Q3_t	Q3. What secondary products/by-products are currently being generated in your representative region?	
Q4_t	Q4. What is your representative region's processing needs regarding primary and secondary resources? (identified needs should be ranked from high to low)	
Q5. What is the size/total area of the farm or forest in your representing region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN members interact with (ha): e.g. 10 – 400		
Q5.2_t	Q5. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest size of the stakeholders which FAN members interact with (ha):	

Table 3. Table names in the Workshop



	1
Q5.3_t	Q5. What is the size/total area of the farm or forest in your representative region? National statistics data:
	Average farm size (ha):
Q5.4_t	Q5. What is the size/total area of the farm or forest in your representative region?
	National statistics data: Average forest size (ha):
	Q5. What is the size/total area of the farm or forest in your representative region?
Q5.5_t	National statistics data:
	Region total farmed area (ha):
	Q5. What is the size/total area of the farm or forest in your representative region?
Q5.6_t	National statistics data:
	Region total forest area (ha):
Q6.1_t	Q6. How much would the farmers/foresters in your representative region be willing to invest in the short-term time (2 years) to implement a technology or practice that would help them process their current resources into bio-products/by-products? Range €
Q6.2_t	Q6. How much would the farmers/foresters in your representative region be willing to invest in the long-term time (5 years) to implement a technology or practice that would help them process their current resources into bio-products/by-products? Range €
Q7_t	Q7. What return on investment period (number of years) is acceptable for investment in a bio-based technology? Please provide an average value of FAN and a range of values (years).
Q8.1_t	Q8. What key stakeholders are you currently interacting/collaborating with?
Q8.2_t	Q8. Nature of collaboration: e.g. advisory
Q8.3_t	Q8. Type of collaboration: open or closed to new members or partners.
Q9_t	Q9. Where do you go for information in your region?
Q10_t	Q10. What are the most significant environmental impacts in the region worrying your sector (forest/agriculture)?
Q11_t	Q11. What ideas do you have for involving women, the unemployed, and the youth in this area?
Q12_t	Q12 Thinking about the current resources and needs identified, what improvements could be implemented to make the process more circular?
Q13_t	Q13, Do you know of a more circular approach/technology that will help your RR work in a more circular way?



FAN Country:			
FAN Region:			
	<u>Q1_t</u>	02_t	Q3_t
	D CL. What are the primary or secondary resources available in your representative region?	1D * Q2. What processing equipment is currently being used in your representative region? *	ID Q3. What secondary products/by-
	1 gas what are the primary or secondary resources available in your representative regions	10 Qz. what processing equipment is currently being used in your representative region:	10 I I I I I I I I I I I I I I I I I I I
	2	2	2
	3	3	3
	4	4	4
	5	5	5
	6	6	6
	7	7	7
	8	8	8
	9	9	9
	10	10	10
	11 12	11	11
	12		
	15		
	15		
	16		
	17		
	18		
	19		
	20		
	21		

Figure 8. Screenshot of the Workshop Answers sheet.

3.2.1.3 "TranslateTables" sheet

The association of the workshop outputs with the Inventory of BBTs will be done in 4 different ways, depending on the type of information. Partners will need to manually add additional information in this sheet. To make it visually readable, this sheet has been divided in 4 colour-coordinated sections:

- 1) Association of outputs by drop-down cells (Section 1, green). The user will need to interact with the tables in this section.
- Association of outputs by adding extra information from a quick desk research study (Section 2, yellow). The user will need to interact with the tables in this section.
- 3) Association of outputs by typing key words to (Section 3, blue). The user will need to interact with the tables in this section.
- 4) Association of outputs automatically (Section "Automatic Tables"). The user has not to interact with the tables in this section. These tables are designed to process information from both workshop answers sheet, the weight sheet, and the other sections in this Translated Tables sheet.

In Table 4 it is clarified the association of information, and in Figure 9 it can be appreciated a screenshot of this sheet in the model.

Section	Type of	Table	Associ	ations
and colour	information	names	Source of information 1	Source of information 2
	T1.1_t	Q1 Answers	Reference sector	
Section 1	Dropdown cells	T1.2_t	Q1 Answers	Key Word
– Green		T1.3_t	Q1 Answers	Categories
		T1.4_t	Q1 Answers	Feedstock

Table 4. Association of information in "TranslateTables" sheet



		T1.5_t	Q1 Answers	Value chains
		T8.1_t	Q8.1 Answers: key stakeholders	Type of partners
		T8.2_t	Nature of collaboration	Type of partners
		T8.3_t	Type of collaboration	Type of partners
		T10.1_t	Q10 Answers	C Sink
		T10.2_t	Q10 Answers	Envi Sustainability
		T11_t	Q11 Answers	Socio Sustainability
Section 2	Section 2 Adding extra		Q5.3 Answers. National statistics data, Average farm size (ha):	Processing Capacity
- Yellow	information (yield of biomasses)	T5.4_t	Q5.4 Answers. National statistics data, Average Forest size (ha):	Processing Capacity
		T2.1_t	Q2 Answers	Description BBT
Section 3 - Blue	Section 3 Narrative synthesis - Blue fields	T2.2_t	Q2 Answers	Intended user / conditions of access
		T3_t	Q3 Answers	Outcomes and final product
		T5.1_t	Q5.1 Answers	Transformation of answers into numbers
		T5.2_t	Q5.2 Answers	Transformation of answers into numbers
		T5.5_t	Q5.5 Answers. Region total farmed area (ha):	T5.3_t
		T5.6_t	Q5.6 Answers. Region total forest area (ha):	T5.4_t
Section 4 - Brown	Automatic tables	T6.1_t	Q6.1 Answers: Willingness of investment in the short-term time (2 years)	W6.1_t
		T6.2_t	Q6.2 Answers: Willingness of investment in the long-term time (5 years)	W6.2_t
		T7_t	Q7 Answers: Return on investment period (number of years)	W7_t
			T2.1_t	Prioritisation of BBT Codes with regards to the info in <u>72.1_t</u>



T2.2_a	T2.2_t	Prioritisation of BBT Codes with regards to the info in <u>72.2_t</u>
T3_a	T3_t	Prioritisation of BBT Codes with regards to the info in <i>T3_t</i>
T5.3_a	T5.3_t	Processing capacity
T5.4_a	T5.4_t	Processing capacity
T6.1_a	T6.1_t	Investment costs
T6.2_a	T6.2_t	Investment costs
T7_a	T7_t	Return of Investment

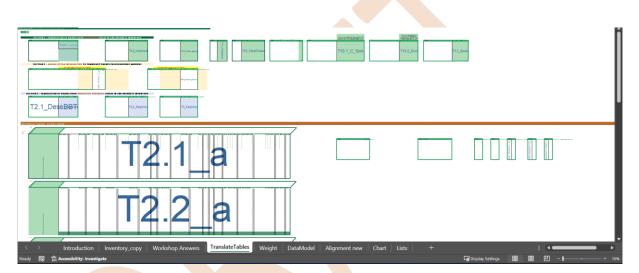


Figure 9. Screenshot of the Translate Table sheet

3.2.1.4 "Weight" sheet

This Excel sheet is only partially used for the 'Reference' Scenario, as it is intended to hold primarily information from T1.3 in the final versions for T2.4 analysis. The table named $W4_t$ is the only one used for the 'Reference' Scenario creation, as it is only in this sheet where the answers from Question 4 from the FAN workshops (T1.2) are used. This sheet is used to give a weight to the different answers from the tables in "TranslateTables" sheet. At this stage, only weight of +1 or -1 is contemplated. A weightage of +1 on each BBT is to be added if the BBT problem statement meets one of the workshops needs. Otherwise, a weightage of -1 should be added on the BBT row.

After T1.3, these weightages will include more variability, as per FAN needs and AB feedback. Below, in Table 5 it is shown the names of the tables that hold the weights and how these relates to other information sheet.



Table 5: Weight tables and its relationship with other information.

	Information weighted from other sheets				
Weight Table name	Table names	Source of information 1	Source of information 2		
W1.1_t	T1.1_t	Q1 Answers (Workshop Answers)	Reference sector (TranslateTables)		
W1.2_t	T1.2_t	Q1 Answers (Workshop Answers)	Key Word (TranslateTables)		
W1.3_t	T1.3_t	Q1 Answers (Workshop Answers)	Categories (TranslateTables)		
W1.4_t	T1.4_t	Q1 Answers (Workshop Answers)	Feedstock (TranslateTables)		
W1.5_t	T1.5_t	Q1 Answers (Workshop Answers)	Value chains (TranslateTables)		
W2.1_t	T2.1_a	T2.1_t (TranslateTables)	Prioritisation of BBT Codes with regards to the info in <i>T2.1_t</i>		
W2.2_t	T2.2_a	T2.2_t (TranslateTables)	Prioritisation of BBT Codes with regards to the info in <i>T2.2_t</i>		
W3_t	T3_a	<u>T3_t</u> (TranslateTables)	Prioritisation of BBT Codes with regards to the info in <i>T3_t</i>		
W4_t	n/a	Q4 Answers (Workshop Answers)	BBT needs/problem statement (Inventory_copy)		
W5.3_t	T5.3_a	T5.3_t (TranslateTables)	Processing capacity (Inventory_copy)		
W5.4_t	T5.4_a	T5.4_t (TranslateTables)	Processing capacity (Inventory_copy)		
W6.1_t	T6.1_a	T6.1_t (TranslateTables)	Investment costs (Inventory_copy)		
W6.2_t	T6.2_a	T6.2_t (TranslateTables)	Investment costs (Inventory_copy)		
W7_t	T7_a	<i>T7_t</i> (TranslateTables)	Return of Investment (Inventory_copy)		
W10.1_t	T10.1_t	Q10 Answers (Workshop Answers)	C Sink (Lists)		
W10.2_t	T10.2_t	Q10 Answers (Workshop Answers)	Envi Sustainability (Lists)		
W11_t	T11_t	Q11 Answers (Workshop Answers)	Socio Sustainability (Lists)		



3.2.1.5 "Data Model" sheet

The "Data Model" sheet holds real tables, readable by Power Pivot. These tables are automatically filled from the other Excel sheets. The sheet is presented in 3 sections, depending on the source of the information:

- 1) Section 1 Tables with information from the "Inventory" sheet. This also includes the information on the table in the "Lists" sheet for the Category field (read section 3.2.1.8). In this section the following tables were created:
 - a. Inventory1
 - b. TCat1
 - c. TCat2
 - d. TCat3
 - e. TCat4
- 2) Section 2 Hold all tables from the "Translated Tables" sheet.
- 3) Section 3 Hold all tables from the "Weight" sheet.

3.2.1.6 "Alignment new" sheet

The "Alignment new" sheet is the result of Power Pivot model after comparing information from the related tables and the weightages.

This sheet holds a Pivot Table, i.e., a 'summary' table that gathers desired fields from related tables. These relations have been built in the Power Pivot Data Model (see section 3.2.2) with the objective to be able to hold in 1 table all weights and relate them to specific BBTs. This will lead to a different weightage assigned to each BBT and hence, to a prioritisation of them.

Both effectiveness and cost related variables are included in this "Alignment new" sheet, to generate a 2-D chart that will help prioritize the BBTs using both types of variables. See Table 6 to understand the relationship between the type of variables and the Inventory field analysed.

Table 6: Types of variables and fields analysed

Type of variable	Fields analysed	
	Reference sector	
	Key Word	
	Feedstock	
Effectiveness	Value chains	
Effectiveness	Categories	
	Intended user / conditions of access	
	Outcomes and final product	
	Processing Capacity	



	C Sink
	Envi Sustainability
	Socio Sustainability
	Needs
Cost	Investment costs
	Return of investment

3.2.1.7 "Chart" sheet

The "Chart" sheet presents a table summarising the weights of BBTs per effectiveness and cost. This table is as well represented in a 2-D plot chart, i.e., a cost/effectiveness chart, that represents the BBTs prioritised against both variables, the cost variables are presented in the Y axis and the effectiveness variables are presented in the X axis. As previously mentioned, **the tool has been designed in a way that will generate more accurate results as the user provides more information**. At this stage, with only 'Reference' Scenario information, the chart does not provide the ultimate prioritisation of BBTs. In Section 4 there is a detailed explanation on how to interpret this 2-D plot chart.

3.2.1.8 "Lists" sheet

"Lists" sheet holds real tables readable by Power Pivot with information to be used in all sheets mentioned above, i.e., tables for the dropdown menus in "TranslateTables" sheet and a table that changes the way information is presented in the "Inventory_copy" sheet under the field "Categories". The categories field in the inventory has been added by indicating an X on those columns a BBT could be categorized to. However, Power Pivot needs an intermediate transformation, as reading X is not compliable. This table in Lists Excel sheet makes this intermediate transformation.

3.2.2 Data Model (Power Pivot)

The BBTs Assessment Tool data model was developed using Power Pivot, following Microsoft's guidelines.². A snowflake schema design was created in Power Pivot, as the name suggests, the design resembles a snowflake. This design has a central *fact* table, containing only values and foreign keys (data linked to another tables), which will be the centre of the snowflake. This table then is surrounded by several *dimension* tables and *dimension* sub-tables, which store descriptive information, providing context to values in the *fact* table, through foreign keys [1].

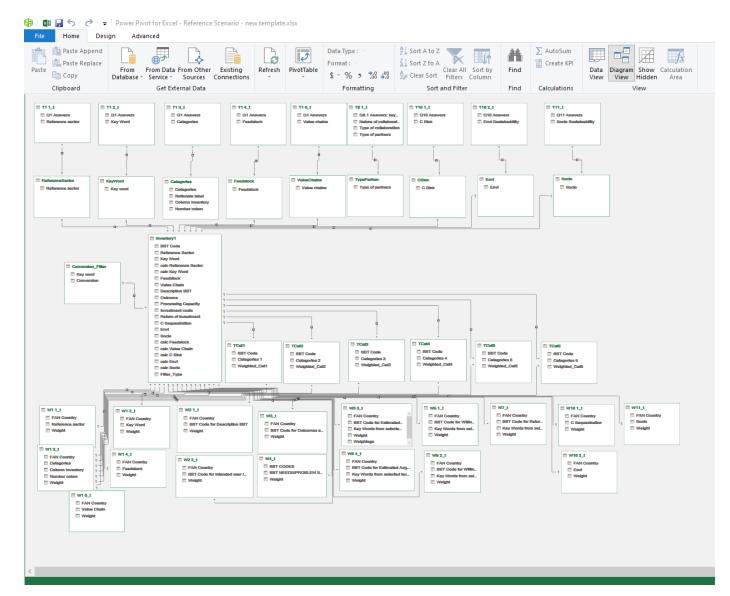
For the BBTs Assessment tool the *fact* table is Inventory1, in the "Data Model" sheet. The remaining tables in the "Data Model" sheet are considered *dimension* tables. In Figure 10 it can be appreciated the diagram view in the Power Pivot window, where table Inventory1 is the centre of the snowflake diagram, and the remaining tables (*dimension* tables) are connected to it by direct relations. The Figure

² https://support.microsoft.com/en-gb/office/create-a-data-model-in-excel-87e7a54c-87dc-488e-9410-5c75dbcb0f7b#:~:text=Add%20existing%2C%20unrelated%20data%20to%20a%20Data%20Model&text=lt%20c an%20be%20any%20range,the%20Create%20PivotTable%20dialog%20box.



11 shows a clarification of Figure 10, by identifying which tables come from the "TranslateTables" sheet, "Data model" Sheet or "Weight" sheet. The "Inventory" sheet provides information to these tables through the abovementioned Names, which provides the information of the BBTs to the other tables.











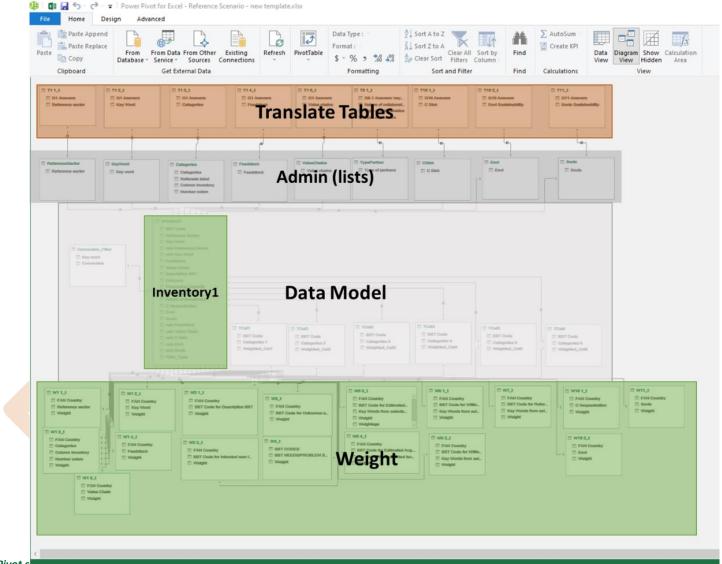


Figure 11. Clarification of the Power Pivot s

Funded by the European Union nowflake diagram

4 Usage scenarios and functionalities of the tool

BBioNets will generate 6 BBTs Assessment tool Excel files, one per each Represented Region which will consolidate data from various BBioNets resources with its Power Pivot engine. The result is a **suggested prioritisation of the most suitable BBTs for said region**.

This prioritisation is made considering both quantitative (investment costs, operational costs, processing capacity, etc.) and qualitative (added value, process complexity, environmental, social and economic sustainability, etc.) variables to analyse their cost/benefit for each BBTs.

The tool has been designed in such a way that the more information the user provides, the more accurate the results will be. In other words, the more accurate suggested prioritisation of BBTs would be obtained for each RR.

As explained above in Section 2, at this point, in version 1, the BBTs Assessment tool only holds information for the 'Reference' Scenario. Once the tool has information from T2.3, T1.3 and the Advisory Board, the prioritisation of BBTs for each region will be more accurate for each region's needs. See Figure 12 for visual representation.

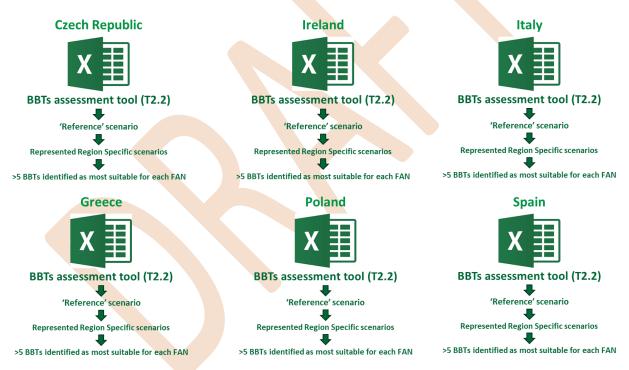


Figure 12. Representation of the layer of information for the BBTs Assessment tool for each region

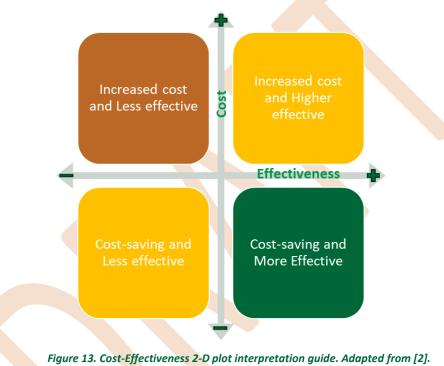
The proposed prioritisation of the most appropriate BBTs for each region will be useful for primary producers (farmers and foresters) as target groups. This tool will include information from the FAN of each region. These FANs provide information on their needs, current resources and priorities and are therefore the main target group. In addition, their advisors, cooperatives, next network, research and policy makers can also benefit from the knowledge on which BBTs would be more successful in their region. This can be achieved through knowledge transfer, which will help to spread the knowledge of the benefits of implementing BBTs for the circular bioeconomy of their region, and through funding and investment opportunities, which will boost their implementation.



Funded by the European Union In a final stage, MTU will work with IUNG to evaluate the creation of an online interactive version of the BBTs Assessment tool, where all 6 tools will be integrated into the BBioNets platform, and anyone could consult the information of the tools freely and free of charge.

4.1 Interpretation of results

In addition, the tool provides the results in a 2-D plot graph, where BBTs are prioritised against both variables, with the cost variable on the Y axis and the effectiveness variable on the X axis. This means that BBTs that fall in the area to the top of the horizontal axis are cost increasing and the area to the right of the vertical axis is more effective or beneficial to the needs of the region. If a BBT falls in the lower right quadrant, the BBT would be more economical and more effective, but if it falls in the upper left quadrant, it would be less effective and less economical. The Figure 13 provides a visual guide to the interpretation of the 2-D plot.



This visual representation of the proposed prioritisation of BBTs will help users to quickly and clearly identify which BBTs would be more interesting for their region, depending on their needs.



5 'Reference' scenario information

This section records the 'Reference' scenario information for each RR, using information from the FAN workshops (T1.2) and the Inventory of Knowledge collection (T2.1). This information has been revised by each Regional Partners for Forestry and Agriculture (RPFA) following the guidelines written on how to use the BBTs Assessment tool to create a 'Reference' scenario (See Appendix I Guidelines for 'Reference' Scenarios).

The 'Reference' Scenario information for each RR is presented as follows:

- Information for the Workshop "Answers" sheet.
- Information for the "TranslateTables" sheet.
- Information for the "Weight" sheet.



5.1 Czech Republic

5.1.1 Information for the "Workshop Answers" sheet.

FAN Region: Jihomoravský

	Czech Repub						
AN Region:	Jihomoravsk	y					
		Q1 t			Q2 t		
		ID 1	Q1. What are the primary or secondary resources available in your representative region?	*	D 🔻	Q2. What processing equipment is currently being used in your representative region?	
			Plant and forest wastes		1	Biogas stations	
			Organic wastes from industrial production		2	Biomass heating plants	
			3 Wastes from livestock production		3	Composting plants	
			4 Municipal organic waste		4	Sugar production	
			Fast-growing woody plants		5	Power plant	
			Grape seeds		6	Dairies	
			7 Residues {stillage (from distillery)}		7	7 Distilleries	
			8 Pits		8	3 Wineries	
			9 Sewage sludge		9	Wastewater treatment plants	
		1	10 Used cooking oil		10		
					11	,	



0.1 0.4.1 0 0.4.Wat secondary product/by products are corrently bring generated in your representative region? 0 1 0.4.Wat secondary product/by products are corrently bring generated in your representative region? 0 2 0.1.Wat secondary product are corrently bring generated in your representative region? 0 2 0.1.Wat secondary product are corrently bring generated in your representative region? 0 3 0.1.Wat secondary product are corrently bring generated in your representative region? 0 4 Multich of bias 2 4 Wat secondary production 2 5 0 1. Manual frame and water and water secondary models and composition for biomass 6 0 6 7 0 2 8 0 2 9 0.0.Wat is the size/fortal area of the farm of forest in your representative region? 9 1.500 - 500.00 2 2 3 3 9 3 3 9 3 3 9 3 3 9 3 3 9 3 3 9 3 3 9 3 3 9 3 3 9 <		
0 0.2. Wat secondary products are correctly being generated in your representative region? 0	Q3_t	Q4_t
0 0.2. Wat secondary products are correctly being generated in your representative region? 0		
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1 1 Interconnection between compositing plots, biggs plants and wastewater treatment plants. 2 Composition boliers Amilability of biomass combustion boliers 3 Garden subtrates Multiplants 4 Multiplants Use of gaston and kitchen waste for biogas and compost production 5 Section line 5 6 6 7 7 Design controps 7 8 11 1 9 Heating controps 20 9 11 1 10 Degestate 10 11 Design controps 10 12 Biotecrity 8 9 Heat 10 12 Design controps 11 12 11 11 12 Biotecrity 11 12 Biotecrity 11 13 Heating controps 12 13 Heating controps 12 14 Heating controps 12 15 Diversity controps 12 16 Mails the size/tota	1D 🔻 Q3. What secondary products/by-products are currently being generated in your representative region?	
2 Compost 2 Analiability of biomass combustion boliers 3 Gerden substantes Motivation of older, distileties and wineries to recover waste biomass in biogas plants, by incinerate or composing 4 Muich chips 4 Use of gastro and kitchen waste for biogas and compositing 5 Molasses 5 Promote wastewater treatment combined with alge cultivation for biomass 6 Cathon line 6 7 Dried sugar contings 6 8 Election 7 9 States 10 11 Election grades 7 05. What is the size/cotal area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN. 10 Cathon line composing 2 05. What is the size/cotal area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest is core of the stakeholders which FAN. 10 members: interact with (ha): c.g. 10 – 400 ha 1 1 Subor 500.00 1 5000 - 129000.00 2 3 5 6 5 5 6 5 5 6 6 6 7 5 5 6 6 7<	Biogas	A long-term survey carried out by ZERA identified problems related to insufficient technological
Garden substrates Monitation of citer, distillers and whereas to recover waste biomass in biogas plants, by increated of composing. Mulch chips Use of gasto and kitchen waste for biogas and compost production Mulch chips Use of gasto and kitchen waste for biogas and compost production Carbon line 6 Carbon line 6 Dired sugar cuttings 7 B leteritory 6 Dired sugar cuttings 10 S biotecity 6 OS. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members; Range of forest size of the stakeholders which FAN, ID V members interact with (hals: e.g. 10 - 400 ha) 7 1 5.00 - 500.00 1 500 00 - 129000 00 2 2 3 3 4 4 5 5 6 6 7 8 9 9	1 100005	1 interconnection between composting plants, biogas plants and wastewater treatment plants
3 wither subsidiares 3 or composing 4 Mulch chips 4 Use of gasto and kitchen waste for biogs and compost production 5 Molasses 5 Promote wastewaster treatment combined with algae cultivation for biomass 6 Carbon lime 6 7 Dired sugar cuttings 7 8 literxicity 8 9 heat 9 10 Digetate 10 12 Barburs 11 13 Borders 12 14 Digetate 12 15 Difference 05 J t 05 J t 05 J t 15 Difference 05 J t 16 Digetate 12 17 Difference 05 J t 18 biologies 05 J t 19 biologies 05 J t 10 Digetate 05 J t 10 Digetate 05 J t 11 Heating peliers 11 12 Biologies 05 J t 15 Doil South is the size/foral area of the farm or forest in your representative region? Values provided by the FAN members: frange of forest size of the stakeholders which FAN 10 To members interact with (ha): e.g. 10 - 400 ha 7 2 2 2 <t< td=""><td>2 Compost</td><td>Availability of biomass combustion boilers</td></t<>	2 Compost	Availability of biomass combustion boilers
4 Mulch chips 4 Use of gazro and kitchen waste for biogas and compost production 5 Molesses 5 Promote wastewater treatment combined with algae cultivation for biomass 6 Carbon line 6 7 Dired sugar cultings 7 8 Electricity 8 9 Heat 9 10 Digestate 10 11 Heating pellets 11 12 Biofiels 11 05.1 rt 05.2 rt 05.1 what is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest size of the stakeholders which FAN 10 V members interact with (ha): ex, 10 - 400 ha V 1 5.00 - 500.00 1 500.00 - 129000.00 2 2 3 3 4 4 5 5 6 6 7 8 9 5 6 7 8 9 9 5 6 7 8 9	Cardan substatas	Motivation of cider, distilleries and wineries to recover waste biomass in biogas plants, by incineration
Molasses \$ Promote wastewater treatment combined with algae cultivation for biomass carbon lime 6 7 Dried sugar cultivation 7 8 Electricity 8 9 Heat 9 10 Digestree 10 11 Heating pellets 10 12 Biologis 11 Values provided by the FAN members: Range of farm size of the stakeholders which FAN 0 10 V members interact with (ha): V 1 5.00 - 500.00 1 5 2 2 2 3 3 3 4 4 4 5 5 5 6 7 7 8 9 9	3 Galden substrates	3 or composting
carbon lime 6 7 Dried super contrige 7 8 Electricity 8 9 Preat 9 10 Digestate 10 11 Intening pellets 11 12 Biologiest 10 05 What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest size of the stakeholders which FAN 10 members interact with (ha): V 1 5.00 - 500.00 1 500.00 - 129000.00 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 9 9	4 Mulch chips	Use of gastro and kitchen waste for biogas and compost production 4
carbon lime 6 7 Dried super contrige 7 8 Electricity 8 9 Preat 9 10 Digestate 10 11 Intening pellets 11 12 Biologiest 10 05 What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest size of the stakeholders which FAN 10 members interact with (ha): V 1 5.00 - 500.00 1 500.00 - 129000.00 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 9 9	_ Molasses	
7 7 8 Text trip 9 10 Digestree 9 11 Heating pellets 10 12 Biotnets 11 02 What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest size of the stakeholders which FAN 10 members interact with (ha): e.g., 10 - 400 ha 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9		5 Promote wastewater treatment combined with algae cultivation for biomass
7 7 8 Text trip 9 10 Digestree 9 11 Heating pellets 10 12 Biotnets 11 02 What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest size of the stakeholders which FAN 10 members interact with (ha): e.g., 10 - 400 ha 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9	6 Carbon lime	6
8 Instructory 8 9 Heat 9 10 Digestate 10 11 Heating pellets 10 12 BioUvals 11 Q5.1 t Q5.2 t Q5.What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN 10 Image: members interact with (ha): e.g. 10 - 400 ha Image: members interact with (ha): e.g. 10 - 400 ha 1 5.00.00 1 500.00 - 129000.00 Image: members interact with (ha): 2 2 2 3 3 3 4 4 4 5 5 5 6 6 7 7 8 9 9		
9 9 10 Digestate 10 11 Heating pellets 10 12 Biofuels 11 05. What is the size/total area of the farm or forest in your representative region? 05.2 t Values provided by the FAN members: Range of farm size of the stakeholders which FAN 05.2 t 10 members interact with (ha): e.g., 10 – 400 ha 0 10 1 5.00 - 500.00 1 500.00 - 129000.00 2 2 3 3 4 4 5 5 6 6 7 7 8 9 9		
10 Digestate 10 11 Heating pellets 11 12 Biofuels 11 05. What is the size/total area of the farm or forest in your representative region? 05. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN 05. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN 10 ▼ 10 ▼ members interact with (ha): ▼ 1 500.00 1 500.00.00 1 2 2 2 2 2 3 3 3 3 3 4 4 4 4 5 5 5 5 6 6 7 7 8 9 9 9 9		
11 Heating pelles 11 12 Biorders 05. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN. 05. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN. 05. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN. 10 10 members interact with (ha): e.g. 10 - 400 ha 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9		10
12 Biofueis O5.2 r O5.1 r O5.2 r Q5.What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN ID members interact with (ha): e.g. 10 - 400 ha V 1 5.00 - 500.00 1 500.00 - 129000.00 2 2 3 3 4 4 5 5 6 6 7 7 8 9		11
Q5. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN ID ID members interact with (ha): e.g. 10 - 400 ha ID 1 5.00 - 500.00 1 500.00 - 129000.00 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 9 9		
Q5. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN ID ID members interact with (ha): e.g. 10 - 400 ha ID 1 5.00 - 500.00 1 500.00 - 129000.00 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 9 9		
Q5. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN ID ID members interact with (ha): e.g. 10 - 400 ha ID 1 5.00 - 500.00 1 500.00 - 129000.00 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 9 9		
Values provided by the FAN members: Range of farm size of the stakeholders which FAN Values provided by the FAN members: Range of forest size of the stakeholders which FAN ID members interact with (ha): e.g. 10 - 400 ha ID members interact with (ha): I 1 5.00 - 500.00 1 500.00 - 129000.00 1 500.00 - 129000.00 ID ID </td <td></td> <td></td>		
ID members interact with (ha): e.g. 10 - 400 ha ID members interact with (ha): I 1 5.00 - 500.00 1 500.00 - 129000.00 1 500.00 - 129000.00 2 2 2 3 2 3 4 4 3 5 5 5 6 6 6 7 6 7 8 9 9		
1 5.00 - 500.00 1 500.00 - 129000.00 2 2 3 3 4 3 5 5 6 6 7 7 8 9		Values provided by the FAN members: Range of forest size of the stakeholders which FAN
2 2 3 3 4 3 5 4 6 5 7 6 8 7 9 9	ID members interact with (ha): e.g. 10 - 400 ha	ID Tempers interact with (ha):
2 2 3 3 4 3 5 4 6 5 7 6 8 7 9 9		
2 2 3 3 4 3 5 4 6 5 7 6 8 7 9 9	1 5.00 - 500.00	1 500 00 - 129000 00
3 3 4 4 5 5 6 5 7 6 7 7 8 8 9 9		
3 3 4 4 5 5 6 5 7 6 7 7 8 8 9 9		
4 4 5 5 6 5 7 6 8 7 9 9	2	2
4 4 5 5 6 5 7 6 8 7 9 9		
5 5 6 6 7 6 8 7 9 9	3	3
5 5 6 6 7 6 8 7 9 9		
6 6 7 7 8 8 9 9	4	4
6 6 7 7 8 8 9 9		
6 6 7 7 8 8 9 9	5	5
7 7 8 8 9 9		
7 7 8 8 9 9	6	
8 9 9		
9 9		
	8	8
	9	9
	10	10



Q5.3_t		Q5.4_t
Q5. What is the size/total area of the farm or forest in your representative region? National statistics data: ID Average farm size (ha):		Q5. What is the size/total area of the farm or forest in your representative region? National statistics data: ID Average forest size (ha):
1 2.49	5	1 1000
2		2
3		3
4		4
5		5
6		6
7 8 9		2 8 9
10		10



Q5.5_t	Q5.6_t
Q5. What is the size/total area of the farm or forest in your representative region?	Q5. What is the size/total area of the farm or forest in your representative region?
National statistics data:	National statistics data:
ID Region total farmed area (ha):	ID Region total forest area (ha):
1 356,511.00	1 186,722.00
2	2
3	3
4	4
5	5
6 7	6 7
8	8
9	9
10 .	10
16.1_t	Q6.2_t
Q6. How much would the farmers/foresters in your representative region be willing to invest in the short	Q6. How much would the farmers/foresters in your representative region be willing to invest in the long-
term time (2 years) to implement a technology or practice that would help them process their current	term time (5 years) to implement a technology or practice that would help them process their current
) ▼ resources into bio-products/by-products? Range €	ID ▼ resources into bio-products/by-products? Range €
1	1
•	
2	2
3	3
4	4
5	5
6	6
7 8	8
8	8 9
10	10 .



Q7_t		Q8.1 t
Q7. What return on investment period (number of years) is acceptable for investment in a bio-based to Please provide an average value of FAN and a range of values (years).	technology?	ID Q8. What key stakeholders are you currently interacting/collaborating with?
1		1 Innovation Broker
2		2 Agricultural practice consultancy
3		3
4		4
5		5
6 7		6 7
8		8
9 10		9 10
Q8.2_t		Q8.3_t
ID Q8. Nature of collaboration: e.g. advisory	,	ID Q8. Type of collaboration: open or closed to new members or partners.
1		1
2		2
3		3
4		4
5		5
		6
6 7		7
8		8
10		10

Q9_t	Q10_t
ID	Q10. What are the most significant environmental impacts in the region worrying your sector
1	Intensive agricultural production is associated with the use of fertilisers and protective chemicals, substances whose production and consumption place a significant burden on 1 the environment
2	Increase in average temperature: Climate change is leading to a gradual increase in temperature. This can have negative impacts on forest ecosystems, such as changes in 2 tree species, the spread of pests and increased risk of fires.
3	Long-term drought: The South Moravian region suffers from insufficient rainfall, which affects water availability for forests and agriculture. Dry periods can lead to soil water 3 loss and reduced crop yields.
4	Soil erosion: Intensive agriculture and inappropriate soil management can cause soil 4 erosion. This adversely affects soil quality and crop productivity.
5	Extreme weather events: Heavy rains and strong winds can cause flooding, landslides and 5 damage to forests. These events are becoming more frequent because of climate change.
6	6
8 9	8 9
10 .	10 .



Q11_t Q12_t	
	ntified, what improvements could be implemented to v ke the proce
	ot fully utilised, there is a lack of suitable facilities the region, which would enable technological
The use of kilns as a source of energy, their 2 pellets has the calorific value of 500 m3 of natu 2	r calorific value is similar to charcoal. A tonne of ural gas.
The liquid residues have a low dry matter co a naerobic digestion in biogas plants. One tonn	ontent, so it is advantageous to process them by ne of digestate produces 60 m3 of biogas.
4 Suitability of the region for algal biomass cultiv	ivation
5 Use of biomass boilers	
6 Cultivation of energy herbs and trees	
7 7 Use of gastro and kitchen waste	
8 8 Eliminate all negative effects of spontaneous f	fallow on fallow land, use or conserve the land appropriately
9 9	
10 10	
11	



	nclusion of a hygiene level in composting plants for the possibility of composting gastro and itchen waste
lr 2	ncineration or co-incineration of stones for energy and heat production.
U 3	lse of liquid digestate for biogas production in biogas plants
4 St	ubsidies for biomass combustion boilers
5 10	pint collection of gastro and kitchen waste
	Itilisation of produced dendro-mass, which remains unused for technological reasons, in arious stages of production and processing of wood.
	lse of agricultural drones to monitor the condition of plants and more accurately apply ertilisers and to locate game at harvest time.
8	
9	
10	



FAN Region: Vysočina

FAN Country:	Czech Repu	ublic		
FAN Region:	Vysočina			
		Q1_t		Q2_t
		ID 🔽	Q1. What are the primary or secondary resources available in your representative region?	ID Q2. What processing equipment is currently being used in your representative region?
			Plant and forest wastes	Biogas stations
			Organic wastes from industrial production	2 Biomass heating stations
		:	Wastes from livestock production 3	Composting plants 3
			4 Municipal organic waste	4 Power plant
			5 Fast-growing woody plants	5 Gristmills
			Grape seeds	6 Distilleries
			Residues {stillage (from distillery)}	7 Wineries
			8 Pits	8 Wastewater treatment plants
		1	9 Sewage sludge	9
		1	0 Used cooking oil	10
				11 .



Q3 t	Q4 t
1D Q3. What secondary products/by-products are currently being generated in your representative region?	Q4. What are your representative region's processing needs regarding primary and secondary resources?
Biogas 1	Building a network of buyers for compost from composting plants, as compost is almost unmarketable or very little used in the Highlands. Farmers in the region have enough manure due to livestock production and do not need compost. However, it is suitable, among others, for areas in drinking water protection 1 zones or protected landscape areas, of which there are many in the region.
2 Compost	Use of food waste and kitchen waste for biogas and compost production
Garden substrates 3	3
4 Mulch chips	4
5 Electricity	5
6 Heat	6
7 Digestate	7
8 Heating pellets	8
9 Biofuels	9
10	10
11	11
12	



1_t Q5. What is the size/total area of the farm or forest in your representative region?	Q5.2_t Q5. What is the size/total area of the farm or forest in your representative region?
Values provided by the FAN members: Range of farm size of the stakeholders which FAN	Values provided by the FAN members: Range of forest size of the stakeholders which FAN
 members interact with (ha); e.g. 10 - 400 ha 	ID The members interact with (ha):
members interact with (iia); e.g. 10 – 400 lia	
1 5.00 - 500.00	1 500.00 - 73000.00
2	2
3	3
4	4
5	5
6	6
7	
8	8
9	9
10	10



5.3_t Q5. What is the size/total area of the farm or forest in your representative region? National statistics data:		Q5.4_t Q5. What is the size/total area of the farm or forest in your representative region? National statistics data:
Average farm size (ha):	-	ID Average forest size (ha):
1	51.00	1 2000
2		2
3		3
4		4
5		5
6		6
7		7
8 9		8 9
10	-	10



Q5.5_t	Q5.6_t
Q5. What is the size/total area of the farm or forest in your representative region? National statistics data: ID Region total farmed area (ha):	Q5. What is the size/total area of the farm or forest in your representative region? National statistics data: ID Region total forest area (ha):
1 365,068.00	1 196,670.00
2	2
3	3
4	5
6	6
7	7
8	8
9	9
10	. 10 .



Q6.1 t	Q6.2_t
Q6. How much would the farmers/foresters in your representative region be willing to invest in the short term time (2 years) to implement a technology or practice that would help them process their current ID ▼ resources into bio-products/by-products? Range € ▼	Q6. How much would the farmers/foresters in your representative region be willing to invest in the long- term time (5 years) to implement a technology or practice that would help them process their current ID ▼ resources into bio-products/by-products? Range € ▼
1	1
2	2
3	3
4	4
	-
5	5
6	6
7	7
8	9
10 .	10



Q7_t	Q8.1_t
Q7. What return on investment period (number of years) is acceptable for investment in a bio-based technology? ID Please provide an average value of FAN and a range of values (years).	ID Q8. What key stakeholders are you currently interacting/collaborating with?
1	1 Innovation Broker
2	2 Agricultural practice consultancy
3	3
4	4
5	5
6	6
7	7
9	9
10	10
	10



Q8.2_t		Q8.3_t
ID 🛛 Q8. Nature of collaboration: e.g. advisory	*	ID Contract of the second seco
1		1
2		2
2		2
3		3
4		4
5		5
6		6
7		7
9		8
10		10 .
10		10



Q9 t	010 t
ID 🔻 Q9. Where do you go for information in your region?	ID Q10. What are the most significant environmental impacts in the region worrying your sector (forest/agriculture)?
1	Intensive agricultural production is associated with the use of fertilisers and protective chemicals, substances whose production and consumption place a significant burden on the environment 1
2	Increase in average temperature: Climate change is leading to a gradual increase in temperature. This can have negative 2 impacts on forest ecosystems, such as changes in tree species, the spread of pests and increased risk of fires.
3	Higher average temperature results in higher evaporation of water from soil, vegetation and water levels, contributing to a negative hydrological balance in the area. Flows in watercourses in the Highlands can be assessed as slightly below 3 normal.
4	Soil erosion: Intensive agriculture and inappropriate soil management can cause soil erosion. This has an adverse effect 4 on soil quality and crop productivity.
5	Extreme weather events: Heavy rains and strong winds can cause flooding, landslides and damage to forests. These 5 events are becoming more frequent because of climate change.
6	6
7	7
8 9	8 9
10 .	10



Q11_t	012 t
ID	ID Thinking about the current resources and needs identified, what improvements could be implemented to make the process more circular?
1	The use of pellets as an energy source, their calorific value is similar to charcoal. A tonne of pellets has the calorific value of 500 m3 of natural gas.
2	Liquid residues have a low dry matter, so it is advantageous to process them by anaerobic fermentation in biogas plants. One tonne of 2 digestate produces 60 m3 of biogas.
3	Use of biomass boilers 3
4	Cultivation of energy herbs and trees
5	Use of gastro and kitchen waste
6	Eliminate all negative effects of spontaneous fallow on fallow land, and use or conserve the land appropriately
7	7
8	8
9	9
10	10
11	



	Do you know of a more circular approach/technology that will help your RR work in a more circular way
	Inclusion of a hygiene level in composting plants for the possibility of composting gastro and kitchen waste
	Incineration or co-incineration of stones for energy and heat production 2
	Use of liquid digestate for biogas production in biogas plants 3
	Subsidies for biomass combustion boilers
	Joint collection of gastro and kitchen waste
	Utilisation of the dendro-mass produced, which remains unused for technological reasons, in 6 various stages of production and processing of wood
	The use of agricultural drones to monitor the condition of plants and more accurately appl 7 fertilisers and to locate game at harvest time
	8 Strict adherence to composting technology to destroy the germination capacity of weeds
_	10

5.1.2 Information for the "TranslateTables" sheet.

FAN Region: Jihomoravský



TLL		71.21		71.3.1	
Q1 Answers	Reference sector	Q1 Answers	Key Word	Q1 Answers	Categories
Plant and fores		Plant and forest wastes	Forestry	Plant and forest wastes	Crop residues and perei plants F1
Organic waste industrial produ		Organic wastes from industrial production	Supply chain, marketing and consumption	Organic wastes from industrial production	Biorefineries C2
Wastes from liv production	A1.4Animal production	Wastes from livestock production	Animal husbandry	Wastes from livestock production	Waste or recycled mate FC
Municipal orga	A1.6Support activities to agriculture and post-harvest nic waste crop activities	Municipal organic waste	Ruralissues	Municipal organic waste	Waste or recycled mater FC
Fast-growing v	A2. 1Silviculture and other roody plants forestry activities A1.6Support activities to	Fast-growing woody plants	Outdoor horticulture and woody crops (incl. viticulture,olives, fruit, ornamentals)	Fast-growing woody plants	Crop residues and peren plants F1
Grape seeds	agriculture and post-harvest crop activities	Grape seeds	Supply chain, marketing and consumption	Grape seeds	Crop residues and perer plants F1
Residues (stilla distillery)}	crop activities	Residues (stillage (from distillery)}	Circular economy, incl. waste, by-products and residues	Residues {stillage (from distillery)}	Waste or recycled mater FC
Pits	A1.6Support activities to agriculture and post-harvest crop activities	Pits	Supply chain, marketing and consumption	Pits	Crop residues and peren plants F1
Sewage sludge	A1.6Support activities to agriculture and post-harvest crop activities	Sewage sludge	Ruralissues	Sewage sludge	Waste or recycled mater FC
Used cooking (A1.6Support activities to agriculture and post-harvest crop activities	Used cooking oil	Buralissues	Used cooking oil	Waste or recycled mater FC



Q1 Answers	Value chains	78.Lt	T8.2_1		
	value chains	Q8.1 Answers: key stakeholders	Nature of collaboration	Type of collaboration	Type of partners
	3 - High potential -				
	Significant arisings of				
Plant and forest wastes	feedstocks available	Innovation Broker			Other
	2 - Medium potential -				
Organic wastes from	Significant availability of	Agricultural practice			
ndustrial production	feedstocks available by	consultancy			Advisor
•	1-Low potential - Low to				
wastes from livestock	medium arisings of feedstock				
production	available between 2023-				
	3 - High potential -				
	Significant arisings of				
Municipal organic waste	feedstocks available				
	2 - Medium potential -				
	Significant availability of				
	feedstocks available by				
Fast-growing woody plants	2035.				
5 5 7.	1-Low potential - Low to				
	medium arisings of feedstock				
Grape seeds	available between 2023-				
·	3 - High potential -				
Residues (stillage (from	Significant arisings of				
distillery)}	feedstocks available				
	1-Low potential - Low to				
	medium arisings of feedstock				
Pits	available between 2023-				
	1-Low potential - Low to				
	medium arisings of feedstock				
Bewage sludge	available between 2023-				
· <u>-</u> - · · · · <u>-</u> ·	3 - High potential -				
	Significant arisings of				
Jsed cooking oil	feedstocks available				



	In these cells, we are interpreting the drop-down options are low, medium, or high potential of carbo
	sequestration as low, medium, or high potential of carbon emissions. The wording of the drop-down
710.1.1	cells does not reflect this because of how the tool works.
770 L C G10 Answers	C Sink
ų iu Answers	C SINK
Intensive agricultural production is associated with the use of fertilisers and	
protective chemicals, substances whose production and consumption place a	
significant burden on the environment	3 - High potential - strong potential for carbon sequestration at the feedstock and product level).
Increase in average temperature: Climate change is leading to a gradual increase in	
emperature. This can have negative impacts on forest ecosystems, such as	
changes in tree species, the spread of pests and increased risk of fires.	3 - High potential - strong potential for carbon sequestration at the feedstock and product level).
Long-term drought: The South Moravian region suffers from insufficient rainfall,	
which affects water availability for forests and agriculture. Dry periods can lead to soil	
vater loss and reduced crop yields.	3 - High potential - strong potential for carbon sequestration at the feedstock and product level).
Soil erosion: Intensive agriculture and inappropriate soil management can cause	
soil erosion. This adversely affects soil quality and crop productivity.	2 - Medium potential - strong potential for carbon sequestration at the feedstock or product level only.
Extreme weather events: Heavy rains and strong winds can cause flooding,	
andslides and damage to forests. These events are becoming more frequent	
pecause of climate change.	2 - Medium potential - strong potential for carbon sequestration at the feedstock or product level only.



	In these cells, we are interpreting the drop-down options are low
	medium, or high potential of environmental benefits as low, mediu
	or high potential of environmental impacts. The wording of the dro
710.21	down cells does not reflect this because of how the tool works.
Q10 Answers	Envi Sustainability
Intensive agricultural production is associated with the use of fertilisers and protective chemicals, substances	3 - High potential - Expected to bring at least 3 significant environmen
whose production and consumption place a significant burden on the environment	benefits.
Increase in average temperature: Climate change is leading to a gradual increase in temperature. This can have	benends.
negative impacts on forest ecosystems, such as changes in tree species, the spread of pests and increased risk c	f 3 - High potential - Europted to bring at least 3 significant equiverment
negative impacts of holest ecosystems, such as changes in tree species, the spiead of pests and increased risk c fires.	benefits.
mes.	benends.
Long-term drought: The South Moravian region suffers from insufficient rainfall, which affects water availability for	3 - High potential - Expected to bring at least 3 significant environmen
forests and agriculture. Dry periods can lead to soil water loss and reduced crop yields.	benefits.
rorests and agriculture. Dry periods carried to soli water loss and reduced crop yields.	benends.
Soil erosion: Intensive agriculture and inappropriate soil management can cause soil erosion. This adversely	
affects soil quality and crop productivity.	2 - Medium potential - Expected to bring 2 or 1 environmental benefits
aneots soli quality and orop productivity.	2 Heddin potential Expected to bing 2 of remain mental behends
Extreme weather events: Heavy rains and strong winds can cause flooding, landslides and damage to forests.	
These events are becoming more frequent because of climate change.	1-Low potential - doesn't bring any environmental benefits.

T1L2		
11 Answers	Socio Sustainability	



					OP AWNSERS			
	Check if the field "Processi	ng capacity", colum AO, i	n the Inventory_copy sheet			Check if the field "Processing capacity	ty", colum AO, in the Inventory	y_copy sheet is in T/Day.
75. <u>2</u> t	is in T/Day. If that is not	the case, please convert t	he answer in the field to		75.4.1	is not the case, plea	ise convert the answer in the fi	eld to T/Day.
Q5.3 Answers. Na		Avg. <u>yearly</u> yield			Q5.4 Answers. National			Estimated Avg. ton
	verage Biomasses identified	of biomasses	tonnes of biomass		statistics data, Average		biomasses per hectare	
farm size (ha):	from Q1	perhectare (farm)		Source of information	forest size (ha):	Biomasses identified from Q1	(forest)	per day
	2.50 Plant and forest wastes	71.04	0.0486		1,000.00	Plant and forest wastes	1096233	<mark>9</mark> 300,33
	Organic wastes from					Organic wastes from industrial		
	- industrial production		-		-	production		
	 Wastes from livestock production 	663	0.4532			Wastes from livestock production		
	 production Municipal organic waste 	00.	0.4002	_		Municipal organic waste		
	 Fast-growing woody plants 	40	0.0273			Fast-growing woody plants		
	 Grape seeds 	2.4				Grape seeds		
	Residues (stillage (from		0.0010			Coperces		
	- distillery)}	120	0.0820		-	Residues {stillage (from distillery)}		
	- Pits	12	0.0082			Pits		
	- Sewage sludge		-		-	Sewage sludge		
	 Used cooking oil 		-		-	Used cooking oil		
			-					
			-					
			-					
			-					
				-				

SECTION 3 - TRANSLATION OF VALUES FROM NARRATIVE SYNTHESIS FIELDS IN THE BBIONETS

Q2 An	swers	Key word to find in "Desc	cription BBT"	Q2 Answers	Key word to find in "Inter	ded user l conditions of access"	Q3 Answers	Key word to find in "O	atcomes and final pro
Biogas	stations	biogas		Biogas stations	gas		Biogas	gas	
Biomas	ss heating plants	heat		Biomass heating plants	gas heat		Compost	compost	
		compost			fertiliser		Garden substrates	grass	
		sugar			sugar		Mulch chips	chip	
Powerp		power			energy		Molasses	sugar	
Dairies		dairy		Dairies	mill		Carbon lime	carbon	
Distilleri	ies	distilling			spirit		Dried sugar cuttings	sugar	
Winerie		wine			wine		Electricity	energy	
Wastew	vater treatment plants	wastewater		Wastewater treatment plants	wastewater		Heat	heat	
							Digestate	digestate	
							Heating pellets	pellet	
							Biofuels	fuel	



FAN Region: Vysočina

AN Country:		ublic						
AN Region:	Vysočina							
	_							
	SEC	TION 1 - TRANS	LATION OF VALU	JES FROM DROP	DOWN FIELDS I	N THE BBIONET	S INVENTORY	
		THE				71.2.1		
		1023				7.62_3		1
		Q1 Answers	Reference sector			Q1 Asswers	Key Word	
								-
			A2.1Silviculture and other forestry					
		Plant and forest wastes	activities			Plant and forest wastes	Forestry	
		Frank and forest wastes	detriftes			Frank and forest wastes	Torestry	
		Organic wastes from industrial	A1.6Support activities to agriculture			Organic wastes from industrial	Supply chain, marketing and	
		production	and post-harvest crop activities			production	consumption	
		production	and post nations crop activity			production	consemption	
		Wastes from livestock production	A1.4Animal production			Wastes from livestock production	Animal husbandry	
							r i	
			A1.6Support activities to agriculture					
		Municipal organic waste	and post-harvest crop activities			Municipal organic waste	Rural issues	
							Outdoor horticulture and woody	
			A2.1Silviculture and other forestry				crops (incl. viticulture,olives, fruit,	
		Fast-growing woody plants	activities			Fast-growing woody plants	ornamentals)	L
			A1.6Support activities to agriculture				Supply chain, marketing and	
		Grape seeds	and post-harvest crop activities			Grape seeds	consumption	
			A1.6Support activities to agriculture				Circular economy, incl. waste, by-	
		Residues {stillage (from distillery)}	and post-harvest crop activities			Residues {stillage (from distillery)}	products and residues	
		Pits	A1.6Support activities to agriculture			Disa	Supply chain, marketing and	
		Pits	and post-harvest crop activities			Pits	consumption	
		Sewage sludge	A1.6Support activities to agriculture and post-harvest crop activities			Sewage sludge	Rural issues	
		oeninge sludge	A1.6Support activities to agriculture			oenage sladge	Hardhoodes	
		Used cooking oil	and post-harvest crop activities			Used cooking oil	Rural issues	
			the post number crop destructs					



71. <u>S.</u> (714_1		<u>715_</u> (
Q1 Answers	Categories	Q1 Answers	Feedstock	Q1 Asswers	Value chain:
	Crop residues and perennial				3 - High potential - Significant arisin
Plant and forest wastes	plants F1	Plant and forest wastes	Biomass	Plant and forest wastes	available currently.
Organic wastes from		Organic wastes from			2 - Medium potential - Significant av
ndustrial production	Biorefineries C2	industrial production	Wastes	Organic wastes from industrial production	
Wastes from livestock production	Waste or recycled material FC	Wastes from livestock production	Wastes	Wastes from livestock production	1- Low potential - Low to medium ari available between 2023-2035
Municipal organic waste	Waste or recycled material FC	Municipal organic waste	Wastes	Municipal organic waste	3 - High potential - Significant arisin available currently.
viunicipal organic waste		Wunicipal organic waste	wastes	iviunicipai organic waste	avanable currentiy.
Fast-growing woody plants	Crop residues and perennial plants F1	Fast-growing woody plants	Biomass	Fast-growing woody plants	2 - Medium potential - Significant av feedstocks available by 2035.
Grape seeds	Crop residues and perennial plants F1	Grape seeds	Biomass residues	Grape seeds	1- Low potential - Low to medium ari available between 2023-2035
Residues {stillage (from distillery)}	Waste or recycled material FC	Residues {stillage (from distillery)}	Biomass residues	Residues (stillage (from distillery))	3 - High potential - Significant arising available currently.
Pits	Crop residues and perennial plants F1	Pits	Biomass residues	Pits	1- Low potential - Low to medium ari available between 2023-2035
Sewage sludge	Waste or recycled material FC	Sewage sludge	Wastes	Sewage sludge	1- Low potential - Low to medium aris available between 2023-2035
Jsed cooking oil	Waste or recycled material FC	Used cooking oil	Wastes	Used cooking oil	 High potential - Significant arising available currently.



7811	78. <u>2.1</u>	78.2.1	
Q8.1 Answers: key stakeholders	Nature of collaboration	Type of collaboration	Type of partners
novation Broker gricultural practice insultancy			Other Advisor



7 <i>10.2_1</i> Q10 Answers	In these cells, we are interpreting the drop-down options are low, medium, or high potential of environmental impacts. Iow, medium, or high potential of environmental impacts. The wording of the drop-down cells does not reflect this because of how the tool works. Eavi Sectainability	716.4 Q11 Asswers	Socio Sustainability
Increase in average temperature: Climate change is leading to a gradual increase in temperature. This can have negative impacts on forest ecosystems, such as changes in tree species, the spread of pests and increased risk of	 High potential - Expected to bring at least 3 significant environmental benefits. High potential - Expected to bring at least 3 significant environmental benefits. 		
issessed as slightly below normal. Soil erosion: Intensive agriculture and inappropriate soil management can cause soil erosion. This has an adverse	3 - High potential - Expected to bring at least 3 significant environmental benefits. 2 - Medium potential - Expected to bring 2 or 1 environmental benefits.		
Extreme weather events: Heavy rains and strong winds can cause flooding, landslides and damage to forests. hese events are becoming more frequent because of climate change.	1 - Low potential - doesn't bring any environmental benefits.		



75. <u>E</u> (Check if the field "Proces is in T/Day. If that is no	ssing capacity", colum AO, ot the case, please convert	in the Inventory_copy sheet the answer in the field to		75.4_1	Check if the field "P Inventory copy sheet i	rocessing capacity", (s in T/Day, If that is n	colum AO, in the ot the case, please
Q5.3 Answers. National statistics data, Average farm size (ha):	Biomasses identified from Q1	Arg. <u>yearly</u> yield of biomasses per farm	Estimated Arg. tonnes of biomass per farm <u>per dar</u>	Source of information	Q5.4 Answers. National statistics data, Arerage forest size (ha):	Biomasses identified from Q1	Arg. <u>yearly</u> yield of biomasses per forest	Estimated Avg. tonnes of biomass pe forest <u>per dav</u>
51.00	Plant and forest wastes	2	1 <mark>5</mark> 3.0039		2,000.00	Plant and forest wastes	1925250	1,054,931.5
	Organic wastes from industrial production					Organic wastes from industrial production		
	Wastes from livestock production	138	4 19.3368			Wastes from livestock production		
	Municipal organic waste		· ·			Municipal organic waste		•
	Fast-growing woody plants Grape seeds	10 0	0 1.3972 .5 0.0070			Fast-growing woody plants Grape seeds		
	Residues (stillage (from distillery)) Pits		5 2.3053 10 0.2734			Residues (stillage (from distillery)) Pits		
	Sewage sludge					Sewage sludge		
	Used cooking oil					Used cooking oil		-
			:					
			:					:



TOAL						
72.12	Key word to find in "Description BBT"	72.2.1 Q2 Answe	ers	Key word to find in "Intended user / conditions of access"	7.2.7 Q3 Answers	Key word to find in "Outcomes and final product"
Biogas stations	biogas	Biogas stati		gas	Biogas	gas
Biomass heating stations	heat	Biomasshe	eating stations	heat	Compost	compost
Composting plants	compost	Composting	g plants	fertiliser	Garden substrates	grass
Powerplant	energy	Powerplan	nt	energy	Mulch chips	chip
Gristmills	mill	Gristmills		mill	Electricity	energy
Distilleries	Distilling	Distilleries		spirit	Heat	heat
Wineries	wine	Wineries		wine	Digestate	digestate
Wastewater treatment plants	wastewater	Wastewate	er treatment plants	wastewater	Heating pellets	pellet
					Biofuels	fuel



5.1.3 Information for the "Weight" sheet

FAN Region: Jihomoravský

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orkshop answers regarding processing needs (as visual reference only)	Inventory answers to BBIs needs/problems statement		Manually add weight to BBTs after reading the workshop anwsers				
1	· · · · · · · · · · · · · · · · · · ·						
processing needs regarding primary and	1						
secondary resources?							
(identified needs should be ranked from high	BBT CODES	BBT NEEDS/PROBLEM STATEMENT	₩eight				
A long-term survey carried out by ZERA identified problems related to insufficient technological interconnection between composting plants, biogas 1 plants and wastew ater treatment plants	IE10-Biorefinery Glas/GLAS	To improve the sustainability, value and resource efficiency of Ireland's livestock sector through farmer diversification into the bioeconomy and to assess the potential role of grass biorefinery in supporting sustainable and resilient communities in rural Ireland.					
2 Availability of biomass combustion boilers	IT11-FABER/FABER	Forest biomass and its management to address climate change and GHG emissions.	-				
Motivation of cider, distilleries and wineries to recover waste biomass in biogas plants, by incineration or 3 composting	FI12-ForestChip4Farm/FC4FH	Preventing climate change, increasing bioenergy in rural areas, decreasing CO2 emissions from farms and the food chain, promoting a sustainable food chain, and developing new innovations and products.					
Use of gastro and kitchen waste for biogas and compost							
4 production	DE13-Lignocellulosic Biorefinery/LIGNO	To valorize the lignocellulosic residues (meadow grass) from farms in a sustainable way.	-				
Promote wastewater treatment combined with algae 5 cultivation for biomass	EL14-BIO2CHP/B2CHP	bypasses technical limitations & allows the use of residual biomass for small-scale & on-site energy production					
6	IT15-Scarabeo/HMP2C	There is a need for sustainable and efficient methods in the hemp supply chain to increase quality, valorize and reduce energy consumption.					
7 L	HU16-REFERTIL/3RZRO IT17-Mountain Carbon/MNTNC	Recycling and valorization of un-exploited farm and animal by-products	-				
9	EE18-Hay Biosyngas/HAYBG	to help improve the management of the organic matter (DM) from dairy cattle manure in the mountain areas a cost-effective and efficient way to produce bio-coal from late harvested hay pellets to benefit small and medium-sized entreoreneurs					
Ŭ .		to produce and use the gasification gas to boost methane formation in the biogas process, and simultaneously produce biochar, and the use of woody materials in biogas energy production without increasing the amount of digestate from the					
10 0	FI19-Wood2Biogas/Wd2BG	biogas process	-				
11 0	IT20-Clean-ER/CLINR	The accumulation of low economic value woody/shrub biomass in mountain areas poses a significant threat as it increases th					
	FR21-SeCoPPA /ALFLF IE22-BBFB/CHAR	challenges in efficiently drying alfalfa for animal feed, and a need to utilize manure and shredded wood from hedgerows The unutilised biomass is left to decay which returns carbon dioxide to the atmosphere while also control of vegetation, by her	+				
	IE22-BBFB/CHAR IE23-SBDP/BGAS	The unutilised biomass is left to decay which returns carbon dioxide to the atmosphere while also control of vegetation, by her The intensification of Irish agriculture, particularly in dairying, has raised concerns about its environmental impact as it is a sign					
	DE24-GrassBiowert/BWERT	Displacement of fossil based products with bio-based alternatives, while offering rural diversification opportunities.					
	BE25-Grassification/GRSFY	Valorization of roadside grass clippings and improving its digestion with other feedstock, as monodigestion of grass can be te					
	FR26-Pyrogreen/PYROG	A bio-based technology that supports valorizing, recycling and recovering of resources by providing a versatile and easy to in					
	DE27-GO-GRASS/GOGRS	The grass from protected wetland areas in the polder meadows is heterogeneous, in parts strongly lignified (rigid) and its nutri					
	NL28-GO-GRASS/GOGRS	Low quality natural and roadside grass are used for low added value applications such as compost which also includes costs	-				
	DK29-GO-GRASS/GOGRS	The conversion of annualcrops such as maize, rapeseed and cereals into grassland can significantly reduce nitrate leaching					
	PT30-Spawnfoam/SPAWN	changing the paradigm of production and consumption of fossil-based composites and materials, such as plastics, by provid					
	DE31-MixBioPells/PLTIZ	Since now adays wood is getting more scarce caused by the growing demand in material and the energetic use, alternative so					
	DE32-MixBioPells/PLTHP	in Europe small-scale combustion units (20 to 200 kW) are used almost only with high quality wood fuels, and now adays wood					
	DE33-BIOlution/BIOLT	Agricultural waste such as tomato and wheat wastes are not used, which has an environmental impact and a management co					
	FR34-GRANUL'HAIE/WdPLT	To enhance the value of local raw materials to meet the increasing demand from consumers who are interested in buying loca					
	ES35-Bioferti+/BFTZ+	Waste recovery of cattle manure and other organic waste, to increase the biological and physical-chemical quality of agricult					
	NL36-ManurePellet/MnPLT IT37-BIOECO_FLIES/W2BSF	a higher percentage of organic matter, a better soil structure and more binding of nutrients in the soil, a problem is formulated in to valorize agrifood biomass beyond the typical low added value applications such as fertilizer or biomass for digesters	rı -				
	DK38-Macrofuels/CWEED	There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bi	9				



DK38-Macrofuels/CWEED	There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bio-	1
IT39-Res4Carbon/RES4C	to define the best practices to guarantee maximum technical, economic and environmental efficiency in the processing, handli	1
FR40-SIVABA/WdPwr	The need to better articulate the various links in the wood energy sector in order to increase its visibility vis-à-vis potential co	1
BE41-BierbeekCHIP/Wd2CN	to valorise the woody material coming from the municipal hollow roads and the wood edges after shredding on the local field	-1
LT42-cogeneration residue/Res2F	a need to develop a production technology for a new type of fertilizer using wood ashes and digestate	-1
IT43-CAREGA/4COAL	a gradual abandonment of the forests and a progressive decrease in commercial relations between forest owners, forestry cor	-1
T44-COBRAF/COBRA	develop an articulated system of biorefineries that allows maximum exploitation of the biomass of oil crops (hemp, safflowe	1
IT45-Stabilized Litter/StbMn	the impact of stabilized litter obtained from the solid/liquid separation of slurry subjected to a process of sanitation and stab	1
T46-BIOACTAM/BIOAA	to develop and validate a new generation of products, based on the partial pyrolysis of ligno-cellulosic biomass deriving from	1
PT47-GOEfluentes /GoEFt	increase the efficiency of water and nutrient utilization, reduce the environmental impact of farming and add value to agricult	-1
ES48-INCREdible/RESIN	addressing challenges faced by resin as a non-wood forest product	-1
V49-WoodResidueLV/W2IHF	developing innovative technological solutions to reclamation of wood processing by-products, further processing and adding v	-1
T50-RBR-EAS/BCH4R	using different residual biomass with energy purposes (biofuel production), agricultural (production of fertilizer) and food (die	1
AT-Closing cycles/NTREC	Farms need a reasonably closed nutrient cycle to recover energy and resources	-1
PL-BIOGAL/BIOGL	Livestock sector has several challengesbecause of the management of theresources and wastes produced. Manure isone of th	1
ES-LIFE Smart Fertirrigation/FRTGN	pig meat production generates large amounts of manure leading to important environmental problems and many anaerobic d	1
BE-DIGESMART /DIGST	Biogas production is efficient at reducing agricultural emission by converting the biomass into electricity and thermal energy (1
NL-VORTEX/VORTX	Manure stripping innovation for efficiency and cost	-1
IL-Manure Evaporation/EVAPR	Different manure processing techniques are already available and the thick fraction can be well tolerated. However, the reduc	-1
E-Manure Efficiency/MNURE	to develop a procedure for liquid slurry processing for agricultural enterprises, with which slurry and manure can be used to pr	-1
E-Manure Refining/MNRRF	to produce concentrated, transport-efficient fertilizers from biogas plant that produces large amounts of digested manure, as \	-1
BE-HIATUS/WATER	Almost every year, farmers face water shortages due to drought. Therefore, they are looking for alternatives for this valuable w	-1
S-GO IMECO/PgSLR	slurry management and treatment system for ensuring the product generated in pig farms is more competitive and has a lower	1
I-LEX4BIO/BBFRT	reducing dependency on mineral and fossil-based fertilizers by optimizing the use of bio-based fertilizers (BBFs)	-1
T-ProBEST/BARK	In the production of forest wood fuels, the presence of bark and twigs must be limited. these can be chipped and delivered, es	-1
T-ProBEST/ASHES	In the production of forest wood fuels, the incombustible elements (ash) must be limited. these can be delivered, essentially	-1
T-FiLeProPri/WSC	Face the problem of the socio-economic marginality of wood production in private property.	-1
T-ROSAEXTREM/NRH	Encourage the restructuring of farms with structural problems considerable	-1
T-M.ER.LI.n/MERL	Analyze needs of partner companies to identify implementation opportunities innovative solutions that are energetically sust	-1
T-INNOVABIOZOO/INZOO	The project consists of a series of actions divided into the following areas work: preparatory phase, coordination and animatic	-1
S-AgriCarbón/AC	In Andalusia, agricultural activities play an important role in the socio-economic development which generates contamination	-1
S-AGUACAVALUE/BYPRO	Promotes possible alternatives for the valorisation of avocado by-products by studying the characterisation of their nutritional	-1
S-AGUACAVALUE/AVOCA	Spain concentrates the 93% of the avocado production in Europe. Malaga and Granada (Andalusian provinces) have the 88% of	-1
S-CHERRY4FOOD/CHERR	There is a need for the processing industries of tomato products (gazpacho and salmorejo) to utilise the by-products generate	-1
S-TOMATOGROUP/TOMAT	There is a need for valorisation of the tomato chopping which currently is a residue with no value.	-1
S-BIOSUERO/WHEY	In Andalusia, it is produced a large quantity of milk whey every year. From 10 L of milk, it is obtained 1 kg of cheese and 9 L of v	-1
S-Biochar/BIOCH	The project is mainly focused on the Western Coast of Huelva (Ayamonte, Isla Cristina, Lepe, Cartaya, Gibraleón, Punta Umbría	-1
S-BIORUMIOLI/FEED	Need to increase the profitability of livestock farms and create an alternative for the olive oil industry by achieving a more effi	-1
S-OleoValoriza/OLIVE	The olive-mill waterwaste constitute one of the most important environmental problems in olvie cooperatives, since they are (-1
ES-OleoValoriza/OLIV2	The reuse and recovery of olive by-products are essential to reduce environmental pollution and contribute to increasing the e	-1
CZ-TJ02000130/	Among the difficult tasks are the application of fugate (a by-product of biogas production) and the dependence on peat (a non	-1
CZ-QK1920328/	The progressive large-scale decay of spruce stands affecting many areas in the Czech Republic can hardly be prevented and we	-1
CZ-QK1920214/	The issue of protecting water resources while maintaining the competitiveness of agricultural production in their vicinity is qu	-1
at a Consideration		<u> </u>



	0 0	
0194-Owoce 4.0/Owoce 4.0	Development of technology dedicated to currant plantations	-1
L93-GRIST/GRIST	Organic grain production and processing of brewery residues into meal, using an innovative dehydration method	-1
L91-OrzechDębu/ACORN	Changing trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products.	-1
L21-ΕΛΑΙΩΝΑΣ/OLFER	Management of waste and wastewater generated during the olive farming and olive oil production processes	-1
L20-Innovative Rice Residue Manageme	ent Pract Handling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in or	-1
L19-YFEIAPTOZ/YOGO	Exploitation of both goat milk and espresso coffee residues	-1
L18-SoilCircle/	Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to app	-1
L17-AGROSCHOOLBUS.BIO/RESOL	Sustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees).	-1
L16-Compo - Laventer/COLAV	increase of the production and the quality of lavender oil	-1
L15-COMPOST-INNO/COMPO	- lack of sufficient amounts of organic waste in the cultivation sites - distance of the sources of organic matter from the places	1
L14-BioAnimalChar/PIG	cost and quality of pig feed	1
L13-OLIHERB/OLIVE	management of the significant quantities of olive leaves produced as by-products during cultivation (pruning), harvesting of ol	-1
EL12-AEIФOPIKA KHIEYTIKA/OREG	control of downy mildew (caused by soil fungi with negative effects in the production) in the context of the circular economy an	-1
EL11-HIPO-ENERGY/NUTRI	- management of Hippophae leaves, which are cultivated only for the harvesting of the fruit- existing studies highlight the nutr	-1
Z-FW06010358/	Reduction of the consumption of liquid substances (including liquid fertilisers) per unit area, in particular better use of these	-1
Z-TK04010166/	There is a need to update biomass potential in the light of changing factors affecting land use and biomass yields, including u	-1
Z-SS06020282/	Conventional mechanical recycling of biopolymers is currently not a technologically feasible process, as their products often er	-1
Z-TH02030925/	Increasing the composting rate, especially when processing bulky materials (urban green waste, sludge), which are increasing	1
Z-TH02030681/	The establishment of field crops (maize) is currently carried out in the form of monoculture. This causes surface runoff of rainv	-1
Z-QK1710379/	Use of sewage sludge as a valuable waste raw material in agriculture.	-1
Z-TH03030319/	Efficient use of processed field by-products.	-1
Z-QK1920214/	The issue of protecting water resources while maintaining the competitiveness of agricultural production in their vicinity is qu	-1
Z-QK1920328/	The progressive large-scale decay of spruce stands affecting many areas in the Czech Republic can hardly be prevented and we	-1
Z-TJ02000130/	Among the difficult tasks are the application of fugate (a by-product of biogas production) and the dependence on peat (a non	-1
ES-OleoValoriza/OLIV2	The reuse and recovery of olive by-products are essential to reduce environmental pollution and contribute to increasing the e	-1
S-OleoValoriza/OLIVE	The olive-mill waterwaste constitute one of the most important environmental problems in olvie cooperatives, since they are o	-1
S-BIORUMIOLI/FEED	Need to increase the profitability of livestock farms and create an alternative for the olive oil industry by achieving a more effi	-1
ES-Biochar/BIOCH	The project is mainly focused on the Western Coast of Huelva (Ayamonte, Isla Cristina, Lepe, Cartaya, Gibraleón, Punta Umbría	-1
S-BIOSUERO/WHEY	In Andalusia, it is produced a large quantity of milk whey every year. From 10 L of milk, it is obtained 1 kg of cheese and 9 L of v	-1
S-TOMATOGROUP/TOMAT	There is a need for valorisation of the tomato chopping which currently is a residue with no value.	-1
S-CHERRY4FOOD/CHERR	There is a need for the processing industries of tomato products (gazpacho and salmorejo) to utilise the by products generate	-1
S-AGUACAVALUE/AVOCA	Spain concentrates the 93% of the avocado production in Europe. Malaga and Granada (Andalusian provinces) have the 88% of	-1
S-AgriCarbón/AC S-AGUACAVALUE/BYPRO	In Andalusia, agricultural activities play an important role in the socio-economic development which generates contamination Promotes possible alternatives for the valorisation of avocado by-products by studying the characterisation of their nutritional	-1



FAN Region: Vysočina

kshr	op answers regarding processing needs (as			Manually add weight to	
			Inventory answers to BBTs needs/problems statement	BBTs after reading the	
	visual reference only)			workshop anwsers	
				workshop anwsers	
	processing needs regarding primary and				
	secondary resources?				
	(identified needs should be ranked from high	BBT CODES	BBT NEEDS/PROBLEM STATEMENT	Weight	
	Building a network of buyers for compost from				
	composting plants, as compost is almost unmarketable				
	or very little used in the Highlands. Farmers in the region				
	have enough manure due to livestock production and				
	do not need compost. However, it is suitable, among		To improve the sustainability, value and resource efficiency of Ireland's livestock sector through farmer diversification into the		
	others, for areas in drinking water protection zones or		bioeconomy and to assess the potential role of grass biorefinery in supporting sustainable and resilient communities in rural		
1	protected landscape areas, of which there are many in	IE10-Biorefinery Glas/GLAS	Ireland.		
	Use of food waste and kitchen waste for biogas and	· · · · · · · · · · · · · · · · · · ·			
2	compost production	IT11-FABER/FABER	Forest biomass and its management to address climate change and GHG emissions.		
			Preventing climate change, increasing bioenergy in rural areas, decreasing CO2 emissions from farms and the food chain,		
3		FI12-ForestChip4Farm/FC4FH	promoting a sustainable food chain, and developing new innovations and products.		
4		DE13-Lignocellulosic Biorefinery/LIGNO	To valorize the lignocellulosic residues (meadow grass) from farms in a sustainable way.		
5		EL14-BIO2CHP/B2CHP	bypasses technical limitations & allows the use of residual biomass for small-scale & on-site energy production		
			There is a need for sustainable and efficient methods in the hemp supply chain to increase quality, valorize and reduce		
6		IT15-Scarabeo/HMP2C	energy consumption.		
7	' (HU16-REFERTIL/3RZRO	Recycling and valorization of un-exploited farm and animal by-products		
8	0	IT17-Mountain Carbon/MNTNC	to help improve the management of the organic matter (OM) from dairy cattle manure in the mountain areas		
			a cost-effective and efficient way to produce bio-coal from late harvested hay pellets to benefit small and medium-sized		
9		EE18-Hay Biosyngas/HAYBG	entrepreneurs		
			to produce and use the gasification gas to boost methane formation in the biogas process, and simultaneously produce		
			biochar, and the use of woody materials in biogas energy production without increasing the amount of digestate from the		
10		FI19-Wood2Biogas/Wd2BG	biogas process		
11		IT20-Clean-ER/CLINR	The accumulation of low economic value woody/shrub biomass in mountain areas poses a significant threat as it increases th	ie .	
		FR21-SeCoPPA/ALFLF	challenges in efficiently drying alfalfa for animal feed, and a need to utilize manure and shredded wood from hedgerows		
		IE22-BBFB/CHAR	The unutilised biomass is left to decay which returns carbon dioxide to the atmosphere while also control of vegetation, by her	t	
		IE23-SBDP/BGAS	The intensification of Irish agriculture, particularly in dairying, has raised concerns about its environmental impact as it is a sign		
		DE24-GrassBiowert/BWERT	Displacement of fossil based products with bio-based alternatives, while offering rural diversification opportunities.	-	
		BE25-Grassification/GRSFY	Valorization of roadside grass clippings and improving its digestion with other feedstock, as monodigestion of grass can be te	c ·	
		FR26-Pyrogreen/PYROG	A bio-based technology that supports valorizing, recycling and recovering of resources by providing a versatile and easy to in		
		DE27-GO-GRASS/GOGRS	The grass from protected wetland areas in the polder meadows is heterogeneous, in parts strongly lignified (rigid) and its nutri		
		NL28-GO-GRASS/GOGRS	Low quality natural and roadside grass are used for low added value applications such as compost which also includes costs		
		DK29-GO-GRASS/GOGRS	The conversion of annualcrops such as maize, rapeseed and cereals into grassland can significantly reduce nitrate leaching		
		PT30-Spawnfoam/SPAWN	changing the paradigm of production and consumption of fossil-based composites and materials, such as plastics, by provid		
		DE31-MixBioPells/PLTIZ	Since now adays wood is getting more scarce caused by the growing demand in material and the energetic use, alternative so		
		DE32-MixBioPells/PLTHP	in Europe small-scale combustion units (20 to 200 kW) are used almost only with high quality wood fuels, and now adays wood		
		DE33-BIOlution/BIOLT	Agricultural waste such as tomato and wheat wastes are not used, which has an environmental impact and a management or	»	
		FR34-GRANUL'HAIE/WdPLT	To enhance the value of local raw materials to meet the increasing demand from consumers who are interested in buying loca	al	
		ES35-Bioferti+/BFTZ+	Waste recovery of cattle manure and other organic waste, to increase the biological and physical-chemical quality of agricult		
		NL36-ManurePellet/MnPLT	a higher percentage of organic matter, a better soil structure and more binding of nutrients in the soil, a problem is formulated	6	
		IT37-BIOECO_FLIES/W2BSF	to valorize agrifood biomass beyond the typical low added value applications such as fertilizer or biomass for digesters		



NL36-ManurePellet/MnPLT	a higher percentage of organic matter, a better soil structure and more binding of nutrients in the soil, a problem is formulated f	
IT37-BIOECO_FLIES/W2BSF	to valorize agrifood biomass beyond the typical low added value applicaitons such as fertilizer or biomass for digesters	
DK38-Macrofuels/CWEED	There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bic	
T39-Res4Carbon/RES4C	to define the best practices to guarantee maximum technical, economic and environmental efficiency in the processing, hand	
FR40-SIVABA/WdPwr	The need to better articulate the various links in the wood energy sector in order to increase its visibility vis-à-vis potential cons	-
BE41-BierbeekCHIP/Wd2CN	to valorise the woody material coming from the municipal hollow roads and the wood edges after shredding on the local fields c	-
LT42-cogeneration residue/Res2F	a need to develop a production technology for a new type of fertilizer using wood ashes and digestate	
T43-CAREGA/4COAL	a gradual abandonment of the forests and a progressive decrease in commercial relations between forest owners, forestry cor	
T44-COBRAF/COBRA	develop an articulated system of biorefineries that allows maximum exploitation of the biomass of oil crops (hemp, safflower, fla	-
T45-Stabilized Litter/StbMn	the impact of stabilized litter obtained from the solid/liquid separation of slurry subjected to a process of sanitation and stabiliza	-
T46-BIOACTAM/BIOAA	to develop and validate a new generation of products, based on the partial pyrolysis of ligno-cellulosic biomass deriving from fu	-
PT47-GOEfluentes /GoEFt	increase the efficiency of water and nutrient utilization, reduce the environmental impact of farming and add value to agricultu	
ES48-INCREdible/RESIN	addressing challenges faced by resin as a non-wood forest product	-
LV49-WoodResidueLV/W2IHF	developing innovative technological solutions to reclamation of wood processing by-products, further processing and adding	-
IT50-RBR-EAS/BCH4R	using different residual biomass with energy purposes (biofuel production), agricultural (production of fertilizer) and food (dieta	-
AT-Closing cycles/NTREC	Farms need a reasonably closed nutrient cycle to recover energy and resources	-
PL-BIOGAL/BIOGL	Livestock sector has several challengesbecause of the management of theresources and wastes produced. Manure isone of	
ES-LIFE Smart Fertirrigation/FRTGN	pig meat production generates large amounts of manure leading to important environmental problems and many anaerobic dit	
BE-DIGESMART /DIGST	Biogas production is efficient at reducing agricultural emission by converting the biomass into electricity and thermal energy (
NL-VORTEX/VORTX	Manure stripping innovation for efficiency and cost	-
NL-Manure Evaporation/EVAPR	Different manure processing techniques are already available and the thick fraction can be well tolerated. However, the reduc	
DE-Manure Efficiency/MNURE	to develop a procedure for liquid slurry processing for agricultural enterprises, with which slurry and manure can be used to pro	
SE-Manure Refining/MNRRF	to produce concentrated, transport-efficient fertilizers from biogas plant that produces large amounts of digested manure, as	-
BE-HIATUS/WATER	Almost every year, farmers face water shortages due to drought. Therefore, they are looking for alternatives for this valuable wa	-
ES-GO IMECO/PaSLR	slurry management and treatment system for ensuring the product generated in pig farms is more competitive and has a lower	
FI-LEX4BIO/BBFRT	reducing dependency on mineral and fossil-based fertilizers by optimizing the use of bio-based fertilizers (BBFs)	-
IT-ProBEST/BARK	In the production of forest wood fuels, the presence of bark and twigs must be limited, these can be chipped and delivered, es:	
IT-ProBEST/ASHES	In the production of forest wood fuels, the incombustible elements (ash) must be limited, these can be delivered, essentially at	
IT-FiLeProPri/WSC	Face the problem of the socio-economic marginality of wood production in private property.	-
IT-ROSAEXTREM/NRH	Face of a problem of a social experimental problems considerable	-
IT-M.EB.LLn/MEBL	Analyze needs of partner companies to identify implementation opportunities innovative solutions that are energetically sustai	-
IT-INNOVABIOZOO/INZOO	The project consists of a series of actions divided into the following areas work: preparatory phase, coordination and animation	-
ES-AgriCarbón/AC	In Andalusia, agricultural activities play an important role in the socio-economic development which generates contamination	
ES-AGUACAVALUE/BYPRO	Promotes possible alternatives for the valorisation of avocado by-products by studying the characterisation of their nutritional	
ES-AGUACAVALUE/AVOCA	Spain concentrates the 33% of the avocado production in Europe. Malaga and Granada (Andalusian provinces) have the 88;	
ES-CHERRY4FOOD/CHERR	Spain concentrates the 35% of the avocado production in Europe. Malaga and Granada (Andaiusian provinces) have the 66, There is a need for the processing industries of tomato products (gazpacho and salmorejo) to utilise the by-products generate	
ES-TOMATOGROUP/TOMAT	There is a need for valorisation of the tomato chopping which currently is a residue with no value.	
ES-BIOSUERO/WHEY	In Andalusia, it is produced a large quantity of milk whey every year. From 10 L of milk, it is obtained 1 kg of cheese and 3 L of wh	
ES-Biochar/BIOCH		-
ES-BIORUMIOLI/FEED	The project is mainly focused on the Western Coast of Huelva (Ayamonte, Isla Cristina, Lepe, Cartaya, Gibraleón, Punta Umbrí Na da iarrana da su Gabilita a Chartana da su a su a chartaí a Gaba a line a líne a tír dura hua chiada a su su	
	Need to increase the profitability of livestock farms and create an alternative for the olive oil industry by achieving a more efficie	
ES-OleoValoriza/OLIVE	The olive-mill waterwaste constitute one of the most important environmental problems in olive cooperatives, since they are ch The server of decourses folia her produces are provided and the service are below in olive cooperatives, since they are ch	
ES-OleoValoriza/OLIV2	The reuse and recovery of olive by-products are essential to reduce environmental pollution and contribute to increasing the e	
CZ-TJ02000130/	Among the difficult tasks are the application of fugate (a by-product of biogas production) and the dependence on peat (a no The second sec	-
CZ-QK1920328/	The progressive large-scale decay of spruce stands affecting many areas in the Czech Republic can hardly be prevented and	-
CZ-QK1920214/	The issue of protecting water resources while maintaining the competitiveness of agricultural production in their vicinity is quite	-
CZ-TH03030319/	Efficient use of processed field by-products.	-
CZ-QK1710379/	Use of sewage sludge as a valuable waste raw material in agriculture.	-
CZ-TH02030681/	The establishment of field crops (maize) is currently carried out in the form of monoculture. This causes surface runoff of rainwa	
CZ-TH02030925/	Increasing the composting rate, especially when processing bulky materials (urban green waste, sludge), which are increasing	
CZ-SS06020282/	Conventional mechanical recycling of biopolymers is currently not a technologically feasible process, as their products often e	-
CZ-TK04010166/	There is a need to update biomass potential in the light of changing factors affecting land use and biomass yields, including up	-
CZ-FW06010358/	Reduction of the consumption of liquid substances (including liquid fertilisers) per unit area, in particular better use of these su	-
EL11-HIPO-ENERGY/NUTRI	- management of Hippophae leaves, which are cultivated only for the harvesting of the fruit- existing studies highlight the nutr	-



CZ-QK1920328/	The progressive large-scale decay of spruce stands affecting many areas in the Czech Republic can hardly be prevented and	-1
CZ-QK1920214/	The issue of protecting water resources while maintaining the competitiveness of agricultural production in their vicinity is quite	-1
CZ-TH03030319/	Efficient use of processed field by-products.	-1
CZ-QK1710379/	Use of sewage sludge as a valuable waste raw material in agriculture.	-1
CZ-TH02030681/	The establishment of field crops (maize) is currently carried out in the form of monoculture. This causes surface runoff of rainwa	-1
CZ-TH02030925/	Increasing the composting rate, especially when processing bulky materials (urban green waste, sludge), which are increasing	1
CZ-SS06020282/	Conventional mechanical recycling of biopolymers is currently not a technologically feasible process, as their products often e	-1
CZ-TK04010166/	There is a need to update biomass potential in the light of changing factors affecting land use and biomass yields, including up	-1
CZ-FW06010358/	Reduction of the consumption of liquid substances (including liquid fertilisers) per unit area, in particular better use of these su	-1
EL11-HIPO-ENERGY/NUTRI	- management of Hippophae leaves, which are cultivated only for the harvesting of the fruit-existing studies highlight the nutr	-1
EL12-AEIФOPIKA KHITEYTIKA/OREG	control of downy mildew (caused by soil fungi with negative effects in the production) in the context of the circular economy an	-1
EL13-OLIHERB/OLIVE	management of the significant quantities of olive leaves produced as by-products during cultivation (pruning), harvesting of ol	-1
EL14-BioAnimalChar/PIG	cost and quality of pig feed	1
EL15-COMPOST-INNO/COMPO	- lack of sufficient amounts of organic waste in the cultivation sites - distance of the sources of organic matter from the places	1
EL16-Compo - Laventer/COLAV	increase of the production and the quality of lavender oil	-1
EL17-AGROSCHOOLBUS.BIO/RESOL	Sustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees).	-1
EL18-SoilCircle/	Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply	-1
EL19-yfeiaptoz/YOGO	Exploitation of both goat milk and espresso coffee residues	-1
EL20-Innovative Rice Residue Management P	r Handling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in org	-1
EL21-EAAIQNAZ/OLFER	Management of waste and wastewater generated during the olive farming and olive oil production processes	-1
PL91-OrzechDębu/ACORN	Changing trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products	-1
PL93-GRIST/GRIST	Organic grain production and processing of brewery residues into meal, using an innovative dehydration method	-1
pl94-Owoce 4.0/Owoce 4.0	Development of technology dedicated to currant plantations	-1
(



5.2 Greece

5.2.1 Information for the "Workshop Answers" sheet.

FAN Countr Greece		
FAN Regior Greece		
	QL1	Q21
	□ Q1. What are the primary or secondary resources available in your representative region?	Q2. ₩hat processing equipment is currently being used in your □ ▼ representative region?
	Chestnut skin	Municipal units of household biomass processes
	2 Greenhouse Vegetable Plant biomass	2 Composting Units for plant residues
	3 Olive and olive oil-production biomass and prunings	3 Aerobic and anaerobic processing equipment
	4 Sheep wool	4 Bio-stimulants that support the composting process
	5 Prunings and grass from fruit trees	Sensors for detecting the status of the composting material (temperature, CO2 levels, 5 maturity)
	6 Stone-fruit residue	6
	7	7
	8	8
	9	9
	10	10
	11	11
	12 13	
	13	



27		Q4_1
Q3. What secondary products/by-products are currently being generated in your representative region?	•	Q4. What are your representative region's processing needs regarding primary and secondary resources? (identified needs should be ranked from high to low)
electricity		Need for collaboration with other sectors in order to avoid contamination of residue bio-mass with micro-plastics, petrol residue and other foreign matter
2 Heating		A system (i.e. public funding body, leasing model etc) for wide availability of 2 processing technology and know-how to farmers
3 Bio-gas		3 Piloting/demonstration/experimental schemes and educational purposes
4 Bio-fertilizers		Education on specific treatment protocols for the quality of the bio-mass streams 4 that is intended for cyclic use.
5 Bio-cyclic Humus-soil		5 Wool processing technology for use in agriculture
6 Bio-cyclic straws		6
7		7
8		8
9		9
10		10
11		11
12		



25. Lt Q5. What is the size/total area of the farm or forest in your representative region? ▼ Values provided by the FAN members: Range of farm size of the	Q5.2. Q5. What is the size/total area of the farm or forest in your representative region? □ ▼ Values provided by the FAN members: Range of forest size of the.
1 1.00-10.00 2 0.50-20.00 3 0.50-4.50	1 2 3
4	4
6 7 8 9	6 7 8 9
10	10



75. <u>3.</u> t			Q5.4_1		
) 🔻	Q5. What is the size/total area of the farm or forest in your representative region? National statistics data:		D 🔻	Q5. What is the size/total area of the farm or forest in your representative region? National statistics data:	
					fruit tre
		С.			farmsl
	542,312.40	Macedo		90,949.10	ve
	042,012.40	W.Mace	 1	30,343.10	grove
2	: 187,778.30		2	6,893.80	
3			3		_
4	84,700.00	Messinia	4	181,889.30	
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rep	. What is the size/total area of the farm or forest in your resentative region? tional statistics data:	•	<i>Q5.6_1</i> □ ▼	Q5. What is the size/total area of the farm or forest in your representative region? National statistics data:	
					chestni ts totali
1	533.	30 es	1	43,500.00	Greece
2	16.1	70	2		
3	1,550.9	90	3		
4	340.0	00	4	· · · · · · · · · · · · · · · · · · ·	
5			5	;	
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willing to invest in the short	rmers/foresters in your representative region be -term time (2 years) to implement a technology or em process their current resources into bio-		Q6. How much would the farmers/foresters in your representative region be willing to invest in the long-term time (5 years) to implement a technology or practice that would help them process their current resources into bio-
11	10,000.00	1	37,500.00
2 1	15,000.00	2	
31	7,000.00	3	I 30,000.00
4		4	
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9		8	
10		10	
		10	



9Z.8		48.Lt
	riod (number of years) is acceptable for investment of FAN and a range of values (years).	Q8. What key stakeholders are you currently D T interacting/collaborating with? T
1	е	1 MACC
2	9	2 KAEM Living Lab
3	8.5	3 EKETA
4	9	4 ROBOCOOP-EU
5		5 BioCycle Hummus Hub
6		6
8		8
9		9
10		10
		11
		12
		13
		14
		15
3.2.1	D831	<i>Q9 1</i>

Q8.2.1	Q8.2.1	Q21
ID 🔻 Q8. Nature of collaboration: e.g. advisory 💌	Q8. Type of collaboration: open or closed to new members or partners.	Q9. Where do you go for information in your region?
1 General	1 closed	1 Advisory services/extension
2 Innovation-co-creation	2 open	2 Technology providers
3 research	3 open	3 Peers/social networks
4 EU project	4 open	4 Youtube channels/other social media communities
5 advisory	5 open	5 EU portals and publications
6	6	6



Q10 t	011 t	012 t
Q10. What are the most significant environmental impacts in the region worrying your sector (forest/agriculture)? 	Q11. What ideas do you have for involving women, the ID vunemployed, and the youth in this area? v	Thinking about the current resources and needs identified, what ID ID
ıent	give incentives for young people to stay in rural areas	Improvement of the high financial burdens of processing
	allow more women to take active roles in agriculture	2 Establishment of pilots/experimental/demonstration schemes
ures / temperatures remaining high during winter	3	3
soil erosion	4	4
	5	5
	6	6
	7	7
	8	8
	10	10
	10	10



Q13_t	
Do you know of a more circular approach/technology that will help your RR work in a more circular	
there are such technologies but a professional farmer will usually rely on known methods due to financial risks involved in new practices 1	
2	
3	
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5.2.2 Information for the "TranslateTables" sheet.

FAN Country: Greece FAN Region: Greece							
	SECTION 1 - TRANSL	ATION OF VALUES FRO	OM DROPDOWN	FIELDS IN THE BBION	IETS INVENTORY		
	T1.1_t			T1.2_t		T1.3_t	
	Q1 Answers	Reference sector		Q1 Answers	Key Word	Q1 Answers	Categories
	Chestnut skin	A1.6Support activities to agriculture and post- harvest crop activities		Chestnut skin	Circular economy, incl. waste, by-products and residues	Chestnut skin	Crop residues and perennial plants F1
	Greenhouse Vegetable Plant biomass	A1.1Growing of non-perennial crops		Greenhouse Vegetable Plant biomass	Greenhouse crops	 Greenhouse Vegetable Plant biomass	Crop residues and perennial plants F1
	Olive and olive oil-production biomass and prunings	A1.2Growing of perennial crops		Olive and olive oil-production biomass and prunings	Circular economy, incl. waste, by-products and residues	Olive and olive oil-production biomass and prunings	Crop residues and perennial plants F1
	Sheep wool	A1.4Animal production		Sheep wool	Farm diversification Circular economy, incl. waste, by-products and	Sheep wool	Crop residues and perennial plants F1
	Prunings and grass from fruit trees	A1.2Growing of perennial crops		Prunings and grass from fruit trees	residues	Prunings and grass from fruit trees	Crop residues and perennial plants F1
	Stone-fruit residue	A1.6Support activities to agriculture and post- harvest crop activities		Stone-fruit residue	Circular economy, incl. waste, by-products and residues	Stone-fruit residue	Crop residues and perennial plants F1
					-		



		71.5_t	
1 Answers	Feedstock	Q1Answers	Value chains
.i.,	Diamaga na siduan	Chastrut dia	
in Greenhouse Vegetable Plant	Biomass residues	Chestnut skin	
biomass	Biomass	Greenhouse Vegetable Plant biomass	
Olive and olive oil-production	1		
biomass and prunings	Biomass	Olive and olive oil-production biomass and prunings	
	Biomass	Sheep wool	
Prunings and grass from fruit		Drupings and gross from fruit tracs	
trees	Biomass	Prunings and grass from fruit trees	
residue	Biomass residues	Stone-fruit residue	
	-		
	-		
	-		
	_		



					In these cells, we are interpreting the drop-down options
					low, medium, or high potential of carbon sequestration a
					low, medium, or high potential of carbon emissions. Th wording of the drop-down cells does not reflect this becau
T8.1 t	T8.2 t	T8.3 t		T10.1 t	of how the tool works.
Q8.1 Answers: key stakeholders	Nature of collaboration	Type of collaboration	Type of partners	Q10 Answers	C Sink
MACC	General	Closed	_	Water management	3 - High potential - strong potential for carbon sequestration a the feedstock and product level).
KAEM Living Lab	Innovation-co-creation	Open		Soil health	3 - High potential - strong potential for carbon sequestration a the feedstock and product level).
EKETA	Research	Open	Researcher	Rising temperatures / temperatures remaining high during winter	3 - High potential - strong potential for carbon sequestration a the feedstock and product level).
					3 - High potential - strong potential for carbon sequestration a
ROBOCOOP-EU	EU project	Open		Desertification/soil erosion	the feedstock and product level).
BioCycle Hummus Hub	Advisory	Open	Advisor		



	In these cells, we are interpreting the drop-down options are low, medium, or high potential of environmental benefits as low, medium, or high potential of environmental impacts . The wording of the drop-down cells does not reflect this			
<u>T10.2_t</u>	because of how the tool works.	T11_t		
Q10 Answers	Envi Sustainability	Q11 Answers	Socio Sustainability	
Water management Soil health Rising temperatures / temperatures remaining high during winter	 3 - High potential - Expected to bring at least 3 significant environmental benefits. 3 - High potential - Expected to bring at least 3 significant environmental benefits. 3 - High potential - Expected to bring at least 3 significant environmental benefits. 3 - High potential - Expected to bring at least 3 significant environmental benefits. 	Give incentives for young people to stay in rural areas Allow more women to take active roles in agriculture	 2 - Medium potential -Expected to bring 2 or 1 social benefits. 2 - Medium potential -Expected to bring 2 or 1 social benefits. 	



SECTION 2	- ADDING EXTRA INFORMAT	ION TO TRA	NICLATE VALUE			DC				
SECTION 2	- ADDING EATRA INFORMAT		INSLATE VALUE		SHOP AWINSER	13				
T5.3_t	", colum AO, in the Inventory_copy sh						T5.4_t ity", colum AO,	, in the Inventory_copy sheet is in T/D	ay. If that is not the case, please conve	
Q5.3 Answers. Nationa	l statistics data, Average fa Biomasses identified from Q1	Avg. yearly yield of bi	o Estimated Avg. tonnes Source of	information			Q5.4 Answers. NaBiomasses ident	ti Avg. yearly yield of biomasses per forest	Estimated Avg. tonnes of biomass per for	Source of information
	542,312.40 Chestnut skin		-				90,949.10 Chestnut skin			(
	187,778.30 Greenhouse Vegetable Plant biomass		-				6,893.80 Greenhouse Veg	getable Plant biomass	-	
	334,672.10 Olive and olive oil-production biomass and	l prunings	-					pil-production biomass and prunings		(
	84,700.00 Sheep wool		-				181,889.30 Sheep wool		-	(
	 Prunings and grass from fruit trees 		-				 Prunings and gra 		-	(
	 Stone-fruit residue 		-				 Stone-fruit resid 	lue	-	(
	-		-				-		-	
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T2.1_t		T2.2_t		73_t	
Q2 Answers	Key word to find in "Description BBT"	Q2 Answers	Key word to find in "Intended user / conditions of access"	Q3 Answers	Key word to find in "Outcomes and final p
	d biomass processes compost	Municipal units of household bion		Electricity	
Composting Units for plant r		Composting Units for plant residu		Heating	
Aerobic and anaerobic proce		Aerobic and anaerobic processing		Bio-gas	
	the composting procebio-stimulants	Bio-stimulants that support the co		Bio-fertilizers	
Sensors for detecting the st	atus of the compostinisensors	Sensors for detecting the status of	the composting material (temperature, CO2 levels, maturity)	Bio-cyclic Humus-soil	
				Bio-cyclic straws	



5.2.3 Information for the "Weight" sheet

	Workshop answers regarding processing needs (as visual reference only)		Inventory answers to BBTs needs/problems statement	Manually add weight t BBTs after reading the workshop anwsers
V4_t				
_	Q4. What are your representative region's processing needs regarding primary and secondary resources? (identified needs should be ranked from high to low)	BBT CODES	BBT NEEDS/PROBLEM STATEMENT	
U	(loentified needs should be ranked from high to low)	BBT CODES		Weight
	Need for collaboration with other sectors in order to avoid contamination of residue bio-mass with micro-plastics, petrol residue and other foreign		To improve the sustainability, value and resource efficiency of Ireland's livestock sector through farmer diversification into the bioeconomy and to assess the potential role of grass biorefinery in supporting sustainable and resilient communities in rural	
	weed on consideration with other sectors in other to avoid containination of residue and this swith initio-prastics, perior residue and other to regin 1 matter	IE10-Biorefinery Glas/GLAS	Ireland.	
	A system (i.e. public funding body, leasing model etc) for wide availability of processing technology and know-how to farmers	IT11-FABER/FABER	Forest biomass and its management to address climate change and GHG emissions.	
	· · · · · · · · · · · · · · · · · · ·		Preventing climate change, increasing bioenergy in rural areas, decreasing CO2 emissions from farms and the food chain,	
	3 Piloting/demonstration/experimental schemes and educational purposes	FI12-ForestChip4Farm/FC4FH	promoting a sustainable food chain, and developing new innovations and products.	
	4 Education on specific treatment protocols for the quality of the bio-mass streams that is intended for cyclic use.	DE13-Lignocellulosic Biorefinery/LIGNO	To valorize the lignocellulosic residues (meadow grass) from farms in a sustainable way.	
	5 Wool processing technology for use in agriculture	EL14-BIO2CHP/B2CHP	bypasses technical limitations & allows the use of residual biomass for small-scale & on-site energy production	
			There is a need for sustainable and efficient methods in the hemp supply chain to increase quality, valorize and reduce energy	
	6 (IT15-Scarabeo/HMP2C	consumption.	
	7	HU16-REFERTIL/3RZRO	Recycling and valorization of un-exploited farm and animal by-products	
	8 ()	IT17-Mountain Carbon/MNTNC	to help improve the management of the organic matter (OM) from dairy cattle manure in the mountain areas	
			a cost-effective and efficient way to produce bio-coal from late harvested hay pellets to benefit small and medium-sized	
	9	EE18-Hay Biosyngas/HAYBG	entrepreneurs	
		5140 May 1201 014120.5	to produce and use the gasification gas to boost methane formation in the biogas process, and simultaneously produce biochar,	
	10 (0	F119-Wood2Biogas/Wd2BG	and the use of woody materials in biogas energy production without increasing the amount of digestate from the biogas process	-
		FR21-SeCoPPA /ALFLF	The accumulation of low economic value woody/shrub biomass in mountain areas poses a significant threat as it increases the risk of challenges in efficiently drying alfalfa for animal feed, and a need to utilize manure and shredded wood from hedgerows	DI
		IE22-BBFB/CHAR	The unutilised biomass is left to decay which returns carbon dioxide to the atmosphere while also control of vegetation, by herbicit	4
		IE23-SBDP/BGAS	The intensification of Irish agriculture, particularly in dairying, has raised concerns about its environmental impact as it is a significa	
		DE24-GrassBiowert/BWERT	Displacement of fossil based products with bio-based alternatives, while offering rural diversification opportunities.	
		BE25-Grassification/GRSFY	Valorization of roadside grass dippings and improving its digestion with other feedstock, as monodigestion of grass can be technica	al
		FR26-Pyrogreen/PYROG	A bio-based technology that supports valorizing, recycling and recovering of resources by providing a versatile and easy to impleme	
		DE27-GO-GRASS/GOGRS	The grass from protected wetland areas in the polder meadows is heterogeneous, in parts strongly lignified (rigid) and its nutrition	
		NL28-GO-GRASS/GOGRS	Low quality natural and roadside grass are used for low added value applications such as compost which also includes costs associa	
		DK29-GO-GRASS/GOGRS	The conversion of annualcrops such as maize, rapeseed and cereals into grassland can significantly reduce nitrate leaching under EU	F.
		PT30-Spawnfoam/SPAWN	changing the paradigm of production and consumption of fossil-based composites and materials, such as plastics, by providing an in	
		DE31-MixBioPells/PLTIZ	Since nowadays wood is getting more scarce caused by the growing demand in material and the energetic use, alternative solid bio	
		DE32-MixBioPells/PLTHP	in Europe small-scale combustion units (20 to 200 kW) are used almost only with high quality wood fuels, and nowadays wood is ge	
		DE33-BIOlution/BIOLT	Agricultural waste such as tomato and wheat wastes are not used, which has an environmental impact and a management cost for t	
		FR34-GRANUL'HAIE/WdPLT	To enhance the value of local raw materials to meet the increasing demand from consumers who are interested in buying local proc	
		ES35-Bioferti+/BFTZ+	Waste recovery of cattle manure and other organic waste, to increase the biological and physical-chemical quality of agricultural so	
		NL36-ManurePellet/MnPLT IT37-BIOECO_FLIES/W2BSF	a higher percentage of organic matter, a better soil structure and more binding of nutrients in the soil, a problem is formulated for a	d
		DK38-Macrofuels/CWEED	to valorize agrifood biomass beyond the typical low added value applicaitons such as fertilizer or biomass for digesters There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bio-based	4
		IT39-Res4Carbon/RES4C	to define the best practices to guarantee maximum technical, economic and environmental efficiency in the processing, handling a	
		FR40-SIVABA/WdPwr	The need to better articulate the various links in the wood energy sector in order to increase its visibility vis-à-vis potential consum	
		BE41-BierbeekCHIP/Wd2CN	to valorise the woody material coming from the municipal hollow roads and the wood edges after shredding on the local fields of B	
		LT42-cogeneration residue/Res2F	a need to develop a production technology for a new type of fertilizer using wood ashes and digestate	
		IT43-CAREGA/4COAL	a gradual abandonment of the forests and a progressive decrease in commercial relations between forest owners, forestry compan	ie
		IT44-COBRAF/COBRA	develop an articulated system of biorefineries that allows maximum exploitation of the biomass of oil crops (hemp, safflower, flax	
		IT45-Stabilized Litter/StbMn	the impact of stabilized litter obtained from the solid/liquid separation of slurry subjected to a process of sanitation and stabilization	
		IT46-BIOACTAM/BIOAA	to develop and validate a new generation of products, based on the partial pyrolysis of ligno-cellulosic biomass deriving from fores	
		PT47-GOEfluentes /GoEFt	increase the efficiency of water and nutrient utilization, reduce the environmental impact of farming and add value to agricultural	
		ES48-INCREdible/RESIN	addressing challenges faced by resin as a non-wood forest product	
		LV49-WoodResidueLV/W2IHF	developing innovative technological solutions to reclamation of wood processing by-products, further processing and adding value	
		IT50-RBR-EAS/BCH4R	using different residual biomass with energy purposes (biofuel production), agricultural (production of fertilizer) and food (dietary	s



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EL14-BioAnimalChar/PIG cost and quality of pig feed 1 EL15-COMPOST-INNO/COMPO - lack of sufficient amounts of organic waste in the cultivation sites - distance of the sources of organic matter from the places of protection -1 EL16-Compo - Laventer/COLAV increase of the production and the quality of lavender oil -1 EL17-AGROSCHOOLBUS.BIO/RESOL Sustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees). 1 EL18-SoilCircle/ Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply so -1 EL20-Innovative Rice Residue Management Practic Handling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic r -1 EL21-EAAIQNAE/OLFER Management of waste and wastewater generated during the olive farming and olive oil production processes 1 PL91-OrzechDebu/ACORN Changing trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The v 1 PL93-GRIST/GRIST Organic grain production and processing of brewery residues into meal, using an innovative dehydration method -1			
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EL16-Compo - Laventer/COLAVincrease of the production and the quality of lavender oil-1EL17-AGROSCHOOLBUS.BIO/RESOLSustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees).1EL18-SoilCircle/Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply so-1EL19-YTEIAPTOZ/YOGOExploitation of both goat milk and espresso coffee residues-1EL20-Innovative Rice Residue Management Practic Handling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic-1EL21-EAAIQNAE/OLFERManagement of waste and wastewater generated during the olive farming and olive oil production processes1PL91-OrzechDebu/ACORNChanging trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The volume of the specific previous into meal, using an innovative dehydration method-1	•		
EL17-AGROSCHOOLBUS.BIO/RESOLSustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees).1EL18-SoilCircle/Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply so-1EL19-YTEIAPTOΣ/YOGOExploitation of both goat milk and espresso coffee residues-1EL20-Innovative Rice Residue Management PracticHandling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic r-1EL21-EΛAIΩNAΣ/OLFERManagement of waste and wastewater generated during the olive farming and olive oil production processes1PL91-OrzechDebu/ACORNChanging trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The v1PL93-GRIST/GRISTOrganic grain production and processing of brewery residues into meal, using an innovative dehydration method-1			
EL18-SoilCircle/Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply so-1EL19-YTEIAPTOΣ/YOGOExploitation of both goat milk and espresso coffee residues-1EL20-Innovative Rice Residue Management PracticHandling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic n-1EL21-EΛAIΩNAΣ/OLFERManagement of waste and wastewater generated during the olive farming and olive oil production processes1PL91-OrzechDebu/ACORNChanging trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The v1PL93-GRIST/GRISTOrganic grain production and processing of brewery residues into meal, using an innovative dehydration method-1	•		
EL19-YTEIAPTOΣ/YOGOExploitation of both goat milk and espresso coffee residues-1EL20-Innovative Rice Residue Management PracticHandling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic n-1EL21-EΛAIΩNAΣ/OLFERManagement of waste and wastewater generated during the olive farming and olive oil production processes1PL91-OrzechDebu/ACORNChanging trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The v1PL93-GRIST/GRISTOrganic grain production and processing of brewery residues into meal, using an innovative dehydration method-1	•		
EL20-Innovative Rice Residue Management PracticHandling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic r-1EL21-EΛAIΩNAΣ/OLFERManagement of waste and wastewater generated during the olive farming and olive oil production processes1PL91-OrzechDebu/ACORNChanging trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The v1PL93-GRIST/GRISTOrganic grain production and processing of brewery residues into meal, using an innovative dehydration method-1			
EL21-EΛAIΩNAΣ/OLFERManagement of waste and wastewater generated during the olive farming and olive oil production processes1PL91-OrzechDebu/ACORNChanging trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The v1PL93-GRIST/GRISTOrganic grain production and processing of brewery residues into meal, using an innovative dehydration method-1			
PL91-OrzechDębu/ACORN Changing trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The v 1 PL93-GRIST/GRIST Organic grain production and processing of brewery residues into meal, using an innovative dehydration method -1			
PL93-GRIST/GRIST Organic grain production and processing of brewery residues into meal, using an innovative dehydration method -1			
	• •		
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5.3 Ireland

5.3.1 Information for the "Workshop Answers" sheet.

N Country: Ireland		
N Region: Ireland		
	Q1 t	Q2 t
	ID 💌 Q1. What are the primary or secondary resources available in your representative region?	ID Q2. What processing equipment is currently being used in your representative region?
	Cattle slurry	Anaerobic digestion plants
	2 Tree branches	2 separators
	3 Food waste	3 Pyrolysis Biochar kilns
	3 4 Poultry manure	3 4 Debarkers
	5 Pig manure	5 Mixing equipment for poultry and farmyard manures
	6 Horticultural waste e.g plant biomass from mushrooms and tomato crops	6 Plant associated with poultry manure manufacture:
	7 Digestate from AD plants	7 Centrifuge (separators)
	8 Dairy sludge	8 Air dryers (steriliser)
	9 Brewers sludge	9 Air coolers
	10 Brewers grains	10 Pelletisers
	11 Straw	11
	12 Poultry ash	
	13 Bone meal	
	14 De-barked timber from processing	
	15 Saw dust	
	16 Pine cones	
	17 Rushes and gorse	
	18 Green manures e.g cover crops	
	19 Dairy washings	
	20 Flue gas from manufacturing plants	
	21 Food-chain losses i.e sub grade vegetables	



t	Q4_t
Q3. What secondary products/by-products are currently being generated in your representative region?	Q4. What are your representative region's processing needs regarding primary and secondary resources?
1 biogas	Incinerators for wood by-product ashes generation
2 struvite	2 Mulchers and chippers for wood by-products
Separated slurry, solid and liquid fractions	3 Greater number of anaerobic digesters
4 Inoculated slurry	
5 Incinerated poultry manure ash	5
6 Bespoke bi-product fertilisers	6
7 Ash from incinerated brewers' grains	7
8 Biofertilizer, sewage mixed with lime	8
9 Recycling of crop residues, e.g straw chopping and potato tops	9
10 Mushroom compost	10
11	11
Q5.1_t Q5. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of farm size of the stakeholders which FAN members interact with (ha): e.g. 10 – 400 ha	Q5.2_t Q5. What is the size/total area of the farm or forest in your representative region? Values provided by the FAN members: Range of forest size of the stakeholders which ID FAN members interact with (ha):
1 10.00-400.00	1 2.00-25.00
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	
	9
10 ,	9 10



5.3_t	1.0	Q5.4_t
Q5. What is the size/total area of the farm or forest in your representative	region?	Q5. What is the size/total area of the farm or forest in your representative region?
National statistics data:		National statistics data:
Average farm size (ha):	T	ID Average forest size (ha):
1	32.4	1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
10		10
15_t		Q5.6_t
Q5. What is the size/total area of the farm or forest in your representative re	region?	Q5. What is the size/total area of the farm or forest in your representative region?
National statistics data:		National statistics data:
Region total farmed area (ha):	T	ID Region total forest area (ha):
1 4,9	900,000.00	1 808,000.00
2		2
3		3
4		4
5		5
6		6



6.1_t		Q6.2_t		
	your representative region be willing to invest in			uch would the farmers/foresters in your representative region be willing to invest in
	echnology or practice that would help them process			rm time (5 years) to implement a technology or practice that would help them process
Their current resources into bio-products/by-produc	ducts? Range €	ID 🔻	their curren	t resources into bio-products/by-products? Range €
	27.522.02		_	
1 € 2	37,500.00	2	£	32,500.00
2		2		
3		3		
4		4		
5		5		
6		6		
7		7		
8		8		
9		9		
10		10		
7 t			Q8.1_t	
	of years) is acceptable for investment in a bio-based			
technology?				
Please provide an average value of FAN and a	ange of values (years).		ID 🔻	Q8. What key stakeholders are you currently interacting/collaborating with?
1	3			Teagasc
2	4		2	Farmer
3	5			EPA
4	1			DAFM
5	10			University students
6				Organic certification bodies Coillte
8				Manufacturers of bio-based fertilisers
9				Waste processors
2				
10			10	



Q8.2_t	Q8.3_t
ID 🛛 R8. Nature of collaboration: e.g. advisory	The second secon
1 advisory	1 Open
2 Advice	2 Open
3 Licensing & regulatory permission	3 Open
4 Project funding	4 Open
5 Education	5 Open
6 Certification advice	6 Open
7 Provision of raw materials	7 Open
8	8 Open
9	9 Open
10	10



_t	Q10_t	
Q9. Where do you go for information in your region?	ID Q10. What are the most sign	ificant environmental impacts in the region worrying your sector (forest/agriculture)?
advisory services	, Trade-off between maximi	ising efficiency and excessive removal of biomass from forestry
2 other farmers	-	n the wise use of bio-based fertilisers. I.e. matching application rates to crop demand
3 Internet	3 Need for faster analysis of	f nutrient constituents in bio-based fertilisers
4 Department of Agriculture, Food and the Marine -	4 Carbon sequestration	
5 Certification bodies	5 Lower carbon footprint as	sociated to bio-based fertilisers
6 Pilot farms	6	
7 EIPs	7	
8 Lighthouse demos	8	
9 County Council	9	
10 Teagasc Open Days	10	
11 National Ploughing Championships		
12 Farm supply merchants – technical sales teams		
13 Agronomists		
14 Organic certification bodies		
15 Organic trust		
16 Social media (X, LinkedIn, etc)		
17 Media (Agriland, Farmers Journal, Radio)		
111 t		Q12 t
11 <u>_</u> t		
		This line should be surrent assures and sounds identified whet
	a sector constrained in the second	Thinking about the current resources and needs identified, what
Q11. What ideas do you have for involving women, the unemploye	a, and the youth in this area?	1D improvements could be implemented to make the process more circu
1 Youth – Young Scientists Exhibition		1 Making processes more circular
2 Citizen science		2 slurry separation
3 Local development		root harvesting equipment
4 Leaving certificate agricultural science projects		4 biomass
5 EIP projects		5
6 Green agenda linked to youths		6
7 Balancing for gender in groups		7
8 LEADER funds		8
9 County council		9
10 Library		10



11 Local enterprise board

Q13_	t		
ID	-	Do you know of a more circular approach/technology that will help your RR work in a more circul	va y ?
		Improved machinery to collect branches, needles/leaves, and other wood-biomass after	
	1	thinning and felling.	
	2	Machines to process hemp straw to make fibre.	
		Anaerobic Digestion (AD) plants for shared storage of biomaterials and the production of	
	3	biomethane	
	4	Regionally funded shared technology and infrastructure	
	5	Smaller and more adaptable processing technology	
	6	Machinery co-operative systems	
	7		
	8		
	9		
	10		



5.3.2 Information for the "TranslateTables" sheet.

N Country: Ireland		
N Region: Ireland		
		SECTION 1 - TRANSLATION OF VA
	TILL	
	Q1 Answers	Reference sector
	Cattle slurry	A1.4Animal production
	Tree branches	A2.1Silviculture and other forestry activities
	Food waste	A1.6Support activities to agriculture and post-harvest crop activities
	Poultry manure	A1.4Animal production
	Pigmanure	A1.4Animal production
	Horticultural waste e.g plant biomass from mushrooms and tomato crops	A1.1Growing of non-perennial crops
	Digestate from AD plants	A1.6Support activities to agriculture and post-harvest crop activities
	Dairy sludge	A1.6Support activities to agriculture and post-harvest crop activities
	Brewers sludge	A1.6Support activities to agriculture and post-harvest crop activities
	Brewers grains	A1.1Growing of non-perennial crops
	Straw	A1.1Growing of non-perennial crops
	Poultry ash	A1.6Support activities to agriculture and post-harvest crop activities
	Bone meal	A1.6Support activities to agriculture and post-harvest crop activities
	De-barked timber from processing	A2.1Silviculture and other forestry activities
	Saw dust	A2.1Silviculture and other forestry activities
	Pine cones	A2.1Silviculture and other forestry activities
	Rushes and gorse	A2.3Gathering of wild growing non-wood products
	Green manures e.g cover crops	A2.3Gathering of wild growing non-wood products
	Dairy washings	A1.6Support activities to agriculture and post-harvest crop activities
	Flue gas from manufacturing plants	A1.6Support activities to agriculture and post-harvest crop activities
	Food-chain losses i.e sub grade vegetables	A1.6Support activities to agriculture and post-harvest crop activities



BBIONETS INVENTORY

Q1 Answers	Key Word
Cattle slurry	Animal husbandry
Tree branches	Forestry
Food waste	Supply chain, marketing and consumption
Poultry manure	Animal husbandry
Pig manure	Animal husbandry
Horticultural waste e.g plant biomass from mushrooms and tomato crops	Arable crops
Digestate from AD plants	Supply chain, marketing and consumption
Dairy sludge	Water
Brewers sludge	Supply chain, marketing and consumption
Brewers grains	Supply chain, marketing and consumption
Straw	Arable crops
Poultry ash	Supply chain, marketing and consumption
Bone meal	Supply chain, marketing and consumption
De-barked timber from processing	Forestry
Saw dust	Forestry
Pine cones	Forestry
Rushes and gorse	Biodiversity and nature
Green manures e.g cover crops	Crop rotation/crop diversification/dual-purpose or mixedcropping
Dairy washings	Water
Flue gas from manufacturing plants	
Food-chain losses i. e sub grade vegetables	Supply chain, marketing and consumption



71.21		77.4_2	
Q1 Answers	Categories	Q1 Answers	Feedstock
Cattle slurry	Waste or recycled material FC	Cattle slurry	Wastes
Tree branches	Waste or recycled material FC	Tree branches	Biomass residues
Foodwaste	Waste or recycled material FC	Food waste	Wastes
Poultry manure	Waste or recycled material FC	Poultry manure	Wastes
Pigmanure	Waste or recycled material FC	Pigmanure	Wastes
Horticultural waste e.g plant biomass from mushrooms and tomato crops	Waste or recycled material FC	Horticultural waste e.g plar	Wastes
Digestate from AD plants	Biorefineries C2	Digestate from AD plants	Wastes
Dairy sludge	Biorefineries C2	Dairy sludge	Wastes
Brewers sludge	Biorefineries C2	Brewers sludge	Wastes
Brewers grains	Biorefineries C2	Brewers grains	Wastes
Straw	Crop residues and perennial plants F1	Straw	Biomass residues
Poultry ash	Biorefineries C2	Poultry ash	Biomass residues
Bone meal	Biorefineries C2	Bone meal	Biomass residues
De-barked timber from processing	Waste or recycled material FC	De-barked timber from pro	Biomass residues
Saw dust	Waste or recycled material FC	Saw dust	Biomass residues
Pine cones	Waste or recycled material FC	Pine cones	Biomass residues
Rushes and gorse	Crop residues and perennial plants F1	Rushes and gorse	Biomass
Green manures e.g cover crops	Crop residues and perennial plants F1	Green manures e.g. cover	Biomass
Dairy washings	Biorefineries C2	Dairy washings	Wastes
Flue gas from manufacturing plants	Biorefineries C2	Flue gas from manufacturi	Wastes
Food-chain losses i.e sub grade vegetables	Waste or recycled material FC	Food-chain losses i.e sub	Wastes

7 <u>15_</u> 1		78. <u>L</u> t	T8.21	78. <u>3_</u> t	
Q1 Answers	Value chains	Q8.1 Answers: key stakeho	Id: Nature of collaboration	Type of collaboration	Type of partners
Cattle slurry	3 - High potential - Significant arisings of feedstocks available currently.	Teagasc	Advisory	Open	Advisor
Free branches	2 - Medium potential - Significant availability of feedstocks available by 2035.	Farmer	Advice	Open	Farmer
Food waste	1- Low potential - Low to medium arisings of feedstock available between 2023-2035	EPA	Licensing & regulatory permission	Open	Public Authority + LAC
Poultry manure	1- Low potential - Low to medium arisings of feedstock available between 2023-2035	DAFM	Project funding	Open	Public Authority + LAG
Pig manure	2 - Medium potential - Significant availability of feedstocks available by 2035.	University students	Education	Open	Training organization
forticultural waste e.g plant biom	a 1- Low potential - Low to medium arisings of feedstock available between 2023-2035	Organic certification bodies	Certification advice	Open	Advisor
Digestate from AD plants	1- Low potential - Low to medium arisings of feedstock available between 2023-2035	Coillte	Provision of raw materials	Open	Forester
Dairy sludge	3 - High potential - Significant arisings of feedstocks available currently.	Manufacturers of bio-based fer	rtilis	Open	Processor or retailer
Brewers sludge	2 - Medium potential - Significant availability of feedstocks available by 2035.	Waste processors		Open	Processor or retailer
Brewers grains	2 - Medium potential - Significant availability of feedstocks available by 2035.				
Straw	1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
Poultry ash	1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
Bone meal	1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
De-barked timber from processin	ng 1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
Saw dust	1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
Pine cones	1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
Rushes and gorse	2 - Medium potential - Significant availability of feedstocks available by 2035.				
Green manures e.g cover crops	1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
Dairy washings	3 - High potential - Significant arisings of feedstocks available currently.				
Flue gas from manufacturing plar	nt: 1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
Food-chain losses i.e sub grade	ve 2 - Medium potential - Significant availability of feedstocks available by 2035.				



	In these cells, we are interpreting the drop-down options are low, medium, or high potential of carbo
	sequestration as low, medium, or high potential of carbon emissions. The wording of the drop-down
710.Lt	cells does not reflect this because of how the tool works.
Q10 Answers	
Trade-off between maximising efficiency and excessive removal of biomass from forestry	2 - Medium potential - strong potential for carbon sequestration at the feedstock or product level only.
Caution to be exercised in the wise use of bio-based fertilisers. I.e. matching application rates to crop demand	1 - Low potential - low potential for carbon sequestration
Need for faster analysis of nutrient constituents in bio-based fertilisers	1-Low potential - low potential for carbon sequestration
Carbon sequestration	3 - High potential - strong potential for carbon sequestration at the feedstock and product level).
Lower carbon footprint associated to bio-based fertilisers	1-Low potential - low potential for carbon sequestration



710.2.1	In these cells, we are interpreting the drop-down options are low, medium, or high potential of environmental benefits as low, medium, or high potential of environmental impacts . The wording of the drop-down cells does not reflect this because of how the tool works.
Trade-off between maximising efficiency and excessive removal of biomass from forestry	2 - Medium potential - Expected to bring 2 or 1 environmental benefits.
Caution to be exercised in the wise use of bio-based fertilisers. I.e. matching application rates to crop dema	
Need for faster analysis of nutrient constituents in bio-based fertilisers	1 - Low potential - doesn't bring any environmental benefits.
Carbon seguestration	1 - Low potential - doesn't bring any environmental benefits.
Lower carbon footprint associated to bio-based fertilisers	1 - Low potential - doesn't bring any environmental benefits.



Q11 Asswers Youth - Young Scientists Exhibition Citizen science Local development Leaving certificate agricultural science projects	Socio Sestainability 3 - High potential - Expected to bring at least 3 significant social benel 2 - Medium potential - Expected to bring 2 or 1 social benefits. 3 - High potential - Expected to bring at least 3 significant social benef
EIP projects Green agenda linked to youths Balancing for gender in groups LEADER funds County council Library Local enterprise board	 2 - Medium potential -Expected to bring 2 or 1 social benefits. 1 - Low potential - doesn't bring any social benefits. 1 - Low potential - doesn't bring any social benefits. 1 - Low potential - doesn't bring any social benefits. 3 - High potential - doesn't bring any social benefits. 3 - High potential - Expected to bring at least 3 significant social benefits. 2 - Medium potential - Expected to bring 2 or 1 social benefits.



i21		to T/Day.		
5.3 Answers. National statistics d	a Biomasses identified from Q1	Avg. yearly yield of biomasses per hectare (f; Estimated Avg	, tonnes of biomass per far	Source of information
				Average cattle per farm: 70. (https://www.cso.ie/en/releasesandpublications/ep/p-coa/censusofagriculture2020-
				preliminaryresults/livestock/)
				Average farm hectare: 32.4 ha. (workshop answers)
				Average slurry production per housed period per cattle: 5t (https://www.teagasc.ie/media/website/publications/2020/Manure-
32.40	Cattle slurry	10.80	0.0959	Management-Practices-Report.pdf and unpublished InformBio work)
-	Tree branches		-	
		· · · · · · · · · · · · · · · · · · ·		120 kg of food waste per household or 44 kg per person (that's about half the weight of a full brown bin). https://www.epa.ie/our-
-	Food waste		0.1200	services/monitoringassessment/waste/national-waste-statistics/food/
				Average cattle per farm: 2k. (https://www.cso.ie/en/releasesandpublications/ep/p-coa/censusofagriculture2020-
				preliminaryresults/livestock/)
				Average farm hectare: 32.4 ha. (workshop answers)
				Average litter production per housed period: 8kg (T. Hennessy, "The Economic Importance of the Poultry (Meat and Egg) Sector
-	Poultry manure	0.49	0.0044	Ireland," UCC, 2019)
				Average cattle per farm: 1.1k. (https://www.cso.ie/en/releasesandpublications/ep/p-coa/censusofagriculture2020-
				preliminaryresults/livestock/)
				Average farm hectare: 32.4 ha. (workshop answers)
-	Pigmanure	23.26		Average litter production per housed period: 685kg (unpublished InformBio work)
-	Horticultural waste e.g plant biomass from must	71.25		Unpublished InformBio work
	3,			number of AD plants: 20 (https://www.energyireland.ie/the-irish-biomethane-sector-requires-policy-and-action-to-
				mobilise/#:1:text=AD%20technology%20can%20be%20deployed,industry%20in%20many%20European%20countries.)
				Average digestate produced: 145000 tonnes [Major new AD plant on the way to Kildare
				Kildare County Council has given the green light to Ireland's biggest non-waste AD plant, which will use 165,000 tonnes of spent
				brewers' and distillers' grain and crops to produce biomethane.
-	Digestate from AD plants	145.000.00	19.86	https://www.farmersjournal.ie/major-new-ad-plant-on-the-way-to-kildare-772038
	- 3			2017 data https://www.teagasc.ie/publications/2020/what-is-in-dairy-processing-wastewater-sludge-dps-
-	Dairy sludge	126,718.00	43 3966	.php#:/:text=Volumes%20and%20types%20of%20DPS.(wet%20weight)%20in%202017.
-	Brewers sludge	373.648.000.00		Unpublished InformBio work
-	Brewers grains	142,000,00		Unpublished InformBio work (tonnes nationally produced per 87 breweries)
	Straw	3.11		Average yield of wheat, oats, barley and hemp (unpublished informbio work)
	Poultry ash		-	
	Bone meal		_	
	De-barked timber from processing		_	
	Saw dust		-	
	Pine cones		-	
	Rushes and gorse	2.1375		BBFB https://www.biomasstobiochar.ie/ (Unpublished InformBio work)
	Green manures e.g cover crops	16.5		fodder beet vield in fresh weight (Unpublished InformBio work)
	ere er manues erg oover orops		0.1405	2017 data https://www.teagasc.ie/publications/2020/what-is-in-dairy-processing-wastewater-sludge-dps-
	Dairy washings	126,718.00	43 3966	.php#:1text=Volumes%20and%20types%20of%20DPS,(wet%20weight)%20in%202017.
	Flue gas from manufacturing plants	120,110.00	43.3300	providence to an exception of a copy of the copy of th
	Food-chain losses i. e sub grade vegetables		-	



Le	Check if the field "P	ocessing capacity", colum AO, in the Inventory_copy sheet is in T/Day. If that	is not the case, please convert the answer in the field to T/Day	
-		Avg. <u>yearly</u> yield of biomasses per hectare (forest)	Estimated Avg. tonnes of biomass per forest <u>per day</u>	Source of information
	Diolidostes Identifie	The state field of biolicities per neovare (torest)	Estimated ring. tormes of biomass per forest per unit	
7.40	Cattle slurry		-	
				Estimated from sitka spruce branches only as it represents the 79
				the Irish standing volume harvested (NFI, 2022). Sitka spruce brar
-	Tree branches	0.21	0.0004	yield obtained from 10.1007/s10342-005-0093-3.
-	Foodwaste		_	
-	r ood waste			
-	Poultry manure		-	
-	Pigmanure		-	
-	Horticultural waste e.g pl	ant biomass from mushrooms and tomato crops	-	
-	Digestate from AD plants		-	
-	Dairy sludge		-	
-	Brewers sludge		-	
-	Brewers grains		-	
	Straw		-	
	Poultry ash			
	Bone meal		-	
	De-barked timber from p Saw dust	0.6 261,930.39		From estimated sawmill residues (unpublished informbio work)
	Daw dust Pine cones	261,930.39	- 33.87	From estimated sawmill residues (unpublished informbio work)
	Rushes and gorse			
	Green manures e.g cove	r crops		
	Creen manures et y cove	l olops		
	Dairy washings			
	Flue gas from manufactu	ring plants	-	
	Food-chain losses i.e su		-	



7211		12.2 1		73 t	
Q2 Answers	Key word to find in "Description BBT"	Q2 Answers	Key word to find in "Intended user / conditions of access"	Q3 Answers	Key word to find in "Outcomes and fina product"
Anaerobic digestion plants	anaerobic	Anaerobic digestion plants	farm	Biogas	gas
Separators	separators	Separators	industry	struvite	phosphate
Pyrolysis Biochar kilns	pyrolysis	Pyrolysis Biochar kilns	industry	Separated slurry, solid and liquid fractions	slurry
Debarkers	bark	Debarkers	forest	Inoculated slurry	slurry
Mixing equipment for poultry and farmya manures	rd manure	Mixing equipment for poultry and farmyard manures	farm	Incinerated poultry manure ash	ash
Plant associated with poultry manure manufacture:	poultry	Plant associated with poultry manure manufacture:	farm	Bespoke bi-product fertilisers	fertiliser
Centrifuge (separators)	separators	Centrifuge (separators)	industry	Ash from incinerated brewers' grains	ash
Air dryers (steriliser)	steriliser	Air dryers (steriliser)	industry	Biofertilizer, sew age mixed with lime	fertiliser
Air coolers	air	Air coolers	industry	Recycling of crop residues, e.g straw chopping and potato tops	recycle
Pelletisers	pellet	Pelletisers	forest	Mushroom compost	compost
	-				



5.3.3 Information for the "Weight" sheet

	hop answers regarding processing needs (as visual reference only)		Inventory answers to BBTs needs/problems statement	Manually add weight to BBTs after reading the workshop anwsers
t	processing needs regarding primary and			
	secondary resources? (identified needs should be ranked from high	BBT CODES	BBT NEEDS/PROBLEM STATEMENT	₩eight
	(identified needs should be ranked from high	DBTCODES	To improve the sustainability, value and resource efficiency of Ireland's livestock sector through farmer diversification into the	weight
			bioeconomy and to assess the potential role of grass biorefinery in supporting sustainable and resilient communities in rural	
	1 Incinerators for wood by-product ashes generation	IE10-Biorefinery Glas/GLAS	Ireland.	
	2 Mulchers and chippers for wood by-products	IT11-FABER/FABER	Forest biomass and its management to address climate change and GHG emissions.	
	 Take repaired in preserver wood by products 		Preventing climate change, increasing bioenergy in rural areas, decreasing CO2 emissions from farms and the food chain,	
	3 Greater number of anaerobic digesters	FI12-ForestChip4Farm/FC4FH	promoting a sustainable food chain, and developing new innovations and products.	
	4 n	DE13-Lignocellulosic Biorefinery/LIGNO	To valorize the lignocellulosic residues (meadow grass) from farms in a sustainable way.	
	5 0	EL14-BIO2CHP/B2CHP	bypasses technical limitations & allows the use of residual biomass for small-scale & on-site energy production	-
			There is a need for sustainable and efficient methods in the hemp supply chain to increase quality, valorize and reduce	
	6 0	IT15-Scarabeo/HMP2C	energy consumption.	-
	7 0	HU16-BEFEBTIL/3BZBO	Recycling and valorization of un-exploited farm and animal by-products	-
	8 0	IT17-Mountain Carbon/MNTNC	to help improve the management of the organic matter (OM) from dairy cattle manure in the mountain areas	-
			a cost-effective and efficient way to produce bio-coal from late harvested hay pellets to benefit small and medium-sized	
	9 0	EE18-Hay Biosyngas/HAYBG	entrepreneurs	
			to produce and use the gasification gas to boost methane formation in the biogas process, and simultaneously produce	
			biochar, and the use of woody materials in biogas energy production without increasing the amount of digestate from the	
	10 0	FI19-Wood2Biogas/Wd2BG	biogas process	
	11 0	IT20-Clean-ER/CLINR	The accumulation of low economic value woody/shrub biomass in mountain areas poses a significant threat as it increases th	
		FR21-SeCoPPA/ALFLF	challenges in efficiently drying alfalfa for animal feed, and a need to utilize manure and shredded wood from hedgerows	
		IE22-BBFB/CHAR	The unutilised biomass is left to decay which returns carbon dioxide to the atmosphere while also control of vegetation, by her	
		IE23-SBDP/BGAS	The intensification of Irish agriculture, particularly in dairying, has raised concerns about its environmental impact as it is a sign	-
		DE24-GrassBiowert/BWERT	Displacement of fossil based products with bio-based alternatives, while offering rural diversification opportunities.	-
		BE25-Grassification/GRSFY	Valorization of roadside grass clippings and improving its digestion with other feedstock, as monodigestion of grass can be tee	-
		FR26-Pyrogreen/PYROG	A bio-based technology that supports valorizing, recycling and recovering of resources by providing a versatile and easy to in	-
		DE27-GO-GRASS/GOGRS	The grass from protected wetland areas in the polder meadows is heterogeneous, in parts strongly lignified (rigid) and its nutrit	i –
		NL28-GO-GRASS/GOGRS	Low quality natural and roadside grass are used for low added value applications such as compost which also includes costs	
		DK29-GO-GRASS/GOGRS	The conversion of annualcrops such as maize, rapeseed and cereals into grassland can significantly reduce nitrate leaching	
		PT30-Spawnfoam/SPAWN	changing the paradigm of production and consumption of fossil-based composites and materials, such as plastics, by providi	
		DE31-MixBioPells/PLTIZ	Since now adays wood is getting more scarce caused by the growing demand in material and the energetic use, alternative sc	
		DE32-MixBioPells/PLTHP	in Europe small-scale combustion units (20 to 200 kW) are used almost only with high quality wood fuels, and now adays wood	
		DE33-BIOlution/BIOLT	Agricultural waste such as tomato and wheat wastes are not used, which has an environmental impact and a management oc	
		FR34-GRANUL'HAIE/WdPLT	To enhance the value of local raw materials to meet the increasing demand from consumers who are interested in buying loca	
		ES35-Bioferti+/BFTZ+	Waste recovery of cattle manure and other organic waste, to increase the biological and physical-chemical quality of agricult	
		NL36-ManurePellet/MnPLT	a higher percentage of organic matter, a better soil structure and more binding of nutrients in the soil, a problem is formulated f	
		IT37-BIOECO_FLIES/W2BSF	to valorize agrifood biomass beyond the typical low added value applications such as fertilizer or biomass for digesters	-
		DK38-Macrofuels/CWEED	There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bio	
		IT39-Res4Carbon/RES4C	to define the best practices to guarantee maximum technical, economic and environmental efficiency in the processing, hand	
		FR40-SIVABA/WdPwr	The need to better articulate the various links in the wood energy sector in order to increase its visibility vis-à-vis potential con:	
		BE41-BierbeekCHIP/Wd2CN	to valorise the woody material coming from the municipal hollow roads and the wood edges after shredding on the local fields (



		AQ
BE41-BierbeekCHIP/Wd2CN	to valorise the woody material coming from the municipal hollow roads and the wood edges after shredding on the local fields o	
LT42-cogeneration residue/Res2F	a need to develop a production technology for a new type of fertilizer using wood ashes and digestate	1
IT43-CAREGA/4COAL	a gradual abandonment of the forests and a progressive decrease in commercial relations between forest owners, forestry cor	-1
IT44-COBRAF/COBRA	develop an articulated system of biorefineries that allows maximum exploitation of the biomass of oil crops (hemp, safflower, fla	-1
IT45-Stabilized Litter/StbMn	the impact of stabilized litter obtained from the solid/liquid separation of slurry subjected to a process of sanitation and stabiliza	1
IT46-BIOACTAM/BIOAA	to develop and validate a new generation of products, based on the partial pyrolysis of ligno-cellulosic biomass deriving from f	-1
PT47-GOEfluentes /GoEFt	increase the efficiency of water and nutrient utilization, reduce the environmental impact of farming and add value to agricultu	-1
ES48-INCREdible/RESIN	addressing challenges faced by resin as a non-wood forest product	-1
LV49-WoodResidueLV/W2IHF	developing innovative technological solutions to reclamation of wood processing by-products, further processing and adding	1
IT50-RBR-EAS/BCH4R	using different residual biomass with energy purposes (biofuel production), agricultural (production of fertilizer) and food (dieta	-1
AT-Closing cycles/NTREC	Farms need a reasonably closed nutrient cycle to recover energy and resources	-1
PL-BIOGAL/BIOGL	Livestock sector has several challengesbecause of the management of theresources and wastes produced. Manure isone of	-1
ES-LIFE Smart Fertirrigation/FRTGN	pig meat production generates large amounts of manure leading to important environmental problems and many anaerobic dic	1
BE-DIGESMART /DIGST	Biogas production is efficient at reducing agricultural emission by converting the biomass into electricity and thermal energy (c	1
NL-VORTEX/VORTX	Manure stripping innovation for efficiency and cost	-1
NL-Manure Evaporation/EVAPR	Different manure processing techniques are already available and the thick fraction can be well tolerated. However, the reduc	-1
DE-Manure Efficiency/MNURE	to develop a procedure for liquid slurry processing for agricultural enterprises, with which slurry and manure can be used to pro	-1
SE-Manure Refining/MNRRF	to produce concentrated, transport-efficient fertilizers from biogas plant that produces large amounts of digested manure, as	-1
BE-HIATUS/WATER	Almost every year, farmers face water shortages due to drought. Therefore, they are looking for alternatives for this valuable wa	-1
ES-GO IMECO/PgSLR	slurry management and treatment system for ensuring the product generated in pig farms is more competitive and has a lower	-1
FI-LEX4BIO/BBFRT	reducing dependency on mineral and fossil-based fertilizers by optimizing the use of bio-based fertilizers (BBFs)	-1
IT-ProBEST/BARK	In the production of forest wood fuels, the presence of bark and wigs must be limited, these can be chipped and delivered, es	1
IT-ProBEST/ASHES	In the production of forest wood fuels, the incombustible elements (ash) must be limited, these can be delivered, essentially at	1
IT-FiLeProPri/WSC	Face the problem of the socio-economic marginality of wood production in private property.	1
IT-ROSAEXTREM/NRH	Encourage the restructuring of farms with structural problems considerable	-1
IT-M.ER.LI.n/MERL	Analyze needs of partner companies to identify implementation opportunities innovative solutions that are energetically sustai	-1
IT-INNOVABIOZOO/INZOO	The project consists of a series of actions divided into the following areas work: preparatory phase, coordination and animation	-1
ES-AgriCarbón/AC	In Andalusia, agricultural activities play an important role in the socio-economic development which generates contamination	-1
ES-AGUACAVALUE/BYPRO	Promotes possible alternatives for the valorisation of avocado by-products by studying the characterisation of their nutritional	-1
ES-AGUACAVALUE/AVOCA	Spain concentrates the 93% of the avocado production in Europe. Malaga and Granada (Andalusian provinces) have the 88;	-1
ES-CHERRY4FOOD/CHERR	There is a need for the processing industries of tomato products (gazpacho and salmorejo) to utilise the by-products generate	-1
ES-TOMATOGROUP/TOMAT	There is a need for valorisation of the tomato chopping which currently is a residue with no value.	-1
ES-BIOSUERO/WHEY	In Andalusia, it is produced a large quantity of milk whey every year. From 10 L of milk, it is obtained 1 kg of cheese and 3 L of wh	-1
ES-Biochar/BIOCH	The project is mainly focused on the Western Coast of Huelva (Ayamonte, Isla Cristina, Lepe, Cartaya, Gibraleón, Punta Umbrí	-1
		-1
ES-BIORUMIOLI/FEED ES-OleoValoriza/OLIVE	Need to increase the profitability of livestock farms and create an alternative for the olive oil industry by achieving a more efficient of the provident of th	-1
	The olive-mill waterwaste constitute one of the most important environmental problems in olvie cooperatives, since they are ch The new second	-1
ES-OleoValoriza/OLIV2	The reuse and recovery of olive by-products are essential to reduce environmental pollution and contribute to increasing the e	
CZ-TJ02000130/	Among the difficult tasks are the application of fugate (a by-product of biogas production) and the dependence on peat (a no	-1
CZ-QK1920328/	The progressive large-scale decay of spruce stands affecting many areas in the Czech Republic can hardly be prevented and	-1
CZ-QK1920214/	The issue of protecting water resources while maintaining the competitiveness of agricultural production in their vicinity is quite	-1
CZ-TH03030319/	Efficient use of processed field by-products.	-1
CZ-QK1710379/	Use of sewage sludge as a valuable waste raw material in agriculture.	-1
CZ-TH02030681/	The establishment of field crops (maize) is currently carried out in the form of monoculture. This causes surface runoff of rainwa	-1
CZ-TH02030925/	Increasing the composting rate, especially when processing bulky materials (urban green waste, sludge), which are increasing	-1
CZ-SS06020282/	Conventional mechanical recycling of biopolymers is currently not a technologically feasible process, as their products often e	-1
CZ-TK04010166/	There is a need to update biomass potential in the light of changing factors affecting land use and biomass yields, including up	-1
CZ-FW06010358/	Reduction of the consumption of liquid substances (including liquid fertilisers) per unit area, in particular better use of these su	-1
EL11-HIPO-ENERGY/NUTRI	- management of Hippophae leaves, which are cultivated only for the harvesting of the fruit-existing studies highlight the nutr	-1
EL12-аеіфоріка кнпеутіка/OREG	control of downy mildew (caused by soil fungi with negative effects in the production) in the context of the circular economy an	-1
EL13-OLIHERB/OLIVE	management of the significant quantities of olive leaves produced as by-products during cultivation (pruning), harvesting of ol	-1
EL14-BioAnimalChar/PIG	cost and quality of pig feed	-1
EL15-COMPOST-INNO/COMPO	- lack of sufficient amounts of organic waste in the cultivation sites - distance of the sources of organic matter from the places	-1
EL16-Compo - Laventer/COLAV	increase of the production and the quality of lavender oil	-1

EL14-BioAnimalChar/PIG	cost and quality of pig feed	-1
EL15-COMPOST-INNO/COMPO	- lack of sufficient amounts of organic waste in the cultivation sites - distance of the sources of organic matter from the places	-1
EL16-Compo - Laventer/COLAV	increase of the production and the quality of lavender oil	-1
EL17-AGROSCHOOLBUS.BIO/RESOL	Sustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees).	-1
EL18-SoilCircle/	Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply	-1
EL19-yfeiaptoz/YOGO	Exploitation of both goat milk and espresso coffee residues	-1
EL20-Innovative Rice Residue Managemer	nt Pr Handling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in org	-1
EL21-EAAIQNAZ/OLFER	Management of waste and wastewater generated during the olive farming and olive oil production processes	-1
PL91-OrzechDębu/ACORN	Changing trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products	-1
PL93-GRIST/GRIST	Organic grain production and processing of brewery residues into meal, using an innovative dehydration method	-1
pl94-Owoce 4.0/Owoce 4.0	Development of technology dedicated to currant plantations	-1



5.4 Italy

5.4.1 Information for the "Workshop Answers" sheet.

AN Country:	Italy				
	North West	t			
		Q1_t		Q2_t	
					_
		ID 1	Q1. What are the primary or secondary resources available in your representative region?	ID 1	Q2. What processing equipment is currently being used in your representative region?
		[Wastewater		Plant for compost from green pruning residues
			1		1
			_ Chestnut coppicing		Biochar
			3 Forest resource		3 Biogas production from converting farm by-products with farm-scale anaerobic digesters
			4 Woody pruning residues		4 Vermicompost
			5 Herbaceous pruning residues		5 Nutraceutical compounds extraction plants
			6 Olive mill effluents		6 Distillation apparatus, e.g., Clevenger
			7 Depleted substrates		7 Microalgae production plants
			8 Agro-food waste		8 Local wood processing facilities, e.g., sawmills, debarker
			9 Olive pomace		9 Compost and biogas from olive-mill waste
		1	0 Uncultivated land	1	10 Plants for processing whey into feed or infant milk powder
		1	Grape marc	1	Cosmetics from processing grapes residues
		1	2 Manure		
		1	3 Whey		
			Male claves (They are sent for slaughter in the Netherlands when a valorization chain		
		1	4 could be created locally).		



t Q3. What secondary products/by-products are currently being generated in your representative region?	Q4_t Q4. What are your representative region's processing needs regarding primary and secondary resources? ID ▼ (identified needs should be ranked from high to low)
1 Biogas	Transformation chains of plant residues into second raw materials - e.g. Biostimulants, phytosanita 1 products
2 Compost	2 Innovation
3 Energy	3 Resources for investments
4 Biomasses	4 Territorial and/or supply chain projects
5 Wood processing residues	5 Dissemination visibility- e.g. advertising
6 Frozen insect larvae	6 Transformation plants
7 Digested substrate - frass fertilizer	7 Recovery chain of depleted substrates from floriculture
8 Hazelnut shells for secondary metabolite combustion	8 Material and assortment storage yards
9 Wood waste for construction materials	9 Forestry and woodworking mobile equipment – e.g. mobile sawmill, woodchippers, etc.
10 Biofertilizers and biostimulants from animal compounds - fish	10 Drying equipment
Mushroom production on aromatic plant residues	Production of thermoplastic starch for the manufacturing of biodegradable or compostable materials 11 e.g. Bags for floriculture, pots and containers for fruit growing, clips, etc.
12 .	

25.1_t	
	Q5. What is the size/total area of the farm or forest in your representative region?
	Values provided by the FAN members: Range of farm size of the stakeholders which FAN
D 🔻	members interact with (ha): e.g. 10 - 400 ha
1	1.00 - 50.00
2	
3	
4	
5	
6	
7	
8	
9	
10	

Q5.2_t	
ID 🔻	Q5. What is the size/total area of the farm or forest in your representative region? <u>Values provided by the FAN members: Range of forest size of the stakeholders which FAN</u> <u>members interact with (ha):</u>
1	2.00-10.00
2	
3	
4	
5	
6	
7	
8	
9	
10	



Q5.3_t			Q5.4_t	t
	Q5. What is the size/total area of the farm or forest in your representative region? National statistics data:			Q5. What is the size/total area of the farm or forest in your representative region? National statistics data:
ID 1	Average farm size (ha):	T	ID	Average forest size (ha):
	1	16		1 6.
	3			3
	5			5
	6			6
	7			7
	8			8
	9 0			9 10
				10

Q5.5_t			Q5.6_t	
	Q5. What is the size/total area of the farm or forest in your representative region?			Q5. What is the size/total area of the farm or forest in your representative region?
	National statistics data:			National statistics data:
ID 1	r Region total farmed area (ha):		ID	Region total forest area (ha):
	1 920,801.00			1 143,768.00
	2 42,397.00			2 29,487.00
	3 62,639.00			3 18,678.00
	4 1,025,837.00			4 191,933.00
	5 12,431,808.00			5 2,653,698.00
	6			6
	7			7
	8			8
	9			9
1	D			10 ,



Q6.1_t			Q6.2 t	
	6. How much would the farmers/foresters in your representative region be willing to invest in the short		0(0.2_1	Q6. How much would the farmers/foresters in your representative region be willing to invest in the long
	rm time (2 years) to implement a technology or practice that would help them process their current			term time (5 years) to implement a technology or practice that would help them process their current
	esources into bio-products/by-products? Range €		ID	resources into bio-products/by-products? Range €
1 €	2,250.00			1 € 2,250.00
2				3
5				5
4				4
5				5
6				6
7				7
8				8
9				9
10			1	0
27_t				Q8.1_t
	Q7. What return on investment period (number of years) is acceptable for investment in a bio-based tec	hnology?		
ID 🔻		-		ID 08. What key stakeholders are you currently interacting/collaborating with?
D 🔻	Please provide an average value of FAN and a range of values (years).	v		ID 💌 Q8. What key stakeholders are you currently interacting/collaborating with?
ID 💌 I		10		ID Q8. What key stakeholders are you currently interacting/collaborating with?
		*		
1 2		10		1 CREA 2 Nationa Rural Network
1		10		1 CREA
1 2 3		10 11 12		1 CREA 2 Nationa Rural Network 3 AGRION
1 2 3 4		10 11 12 13		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia
1 2 3 4 5		10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA
1 2 3 4 5 6	Please provide an average value of FAN and a range of values (years).	10 11 12 13		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities
1 2 3 4 5	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction
1 2 3 4 5 6 7	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities
1 2 3 4 5 6 7 8	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction 8 Piedmont Region
1 2 3 4 5 6 7 7 8 9	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction 8 Piedmont Region 9 Confindustria Cuneo 10 CLEVER innovation hub
1 2 3 4 5 6 7 7 8 9	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction 8 Piedmont Region 9 Confindustria Cuneo 10 CLEVER innovation hub 11 Chimica Verde Bionet
1 2 3 4 5 6 7 7 8 9	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction 8 Piedmont Region 9 Confindustria Cuneo 10 CLEVER innovation hub 11 Chimica Verde Bionet 12 Food and Wine hub
1 2 3 4 5 6 7 7 8 9	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction 8 Piedmont Region 9 Confindustria Cuneo 10 CLEVER innovation hub 11 Chimica Verde Bionet
1 2 3 4 5 6 7 7 8 9	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction 8 Piedmont Region 9 Confindustria Cuneo 10 CLEVER innovation hub 11 Chimica Verde Bionet 12 Food and Wine hub 13 CIC composters consortium
1 2 3 4 5 6 7 7 8 9	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction 8 Piedmont Region 9 Confindustria Cuneo 10 CLEVER innovation hub 11 Chimica Verde Bionet 12 Food and Wine hub 13 CIC composters consortium 14 4p1000
1 2 3 4 5 6 7 7 8 9	Please provide an average value of FAN and a range of values (years).	10 11 12 13 14		1 CREA 2 Nationa Rural Network 3 AGRION 4 Territorial Forestry Consortia 5 ISPRA 6 Universities 7 Ministry – Forestry Direction 8 Piedmont Region 9 Confindustria Cuneo 10 CLEVER innovation hub 11 Chimica Verde Bionet 12 Food and Wine hub 13 CIC composters consortium



Q8.2_t	Q8.3_t	
ID Q8. Nature of collaboration: e.g. advisory	ID Q8. Type of collaboration: open or closed to new members or partners.	-
	to real type of conduction open of closed to new memory of partners.	
1 applied research	1 open	
2 consultation	2 open	
3 applied research	3 open	
4 Partnership	4 open	
5 applied research	5 open	
6 applied research	6 open	
7 Consultation	7 open	
8 Consultation	8 open	
9 advisory	9	
10 Networking	10	100 C
11 Networking		
12 Networking		
13 Advisory+ networking		
14 Networking+training		
15 Networking+training		



	Q10_t			
▼ Q9. Where do you go for information in your region? ▼	ID Q10. What are the most	t significant env	onmental impacts in the region worrying your sector (forest/agriculture)?	
Leader farmers	1 Wastewater			
Technical studies (consultants – agronomists – 2 environmental engineers)	Accumulation of phyto	osanitary prod	cts	
3 International scientific publications	3 Accumulation of wate	r-insoluble or	anic components	
Various magazines	Even when using circ 4 transportation	ular techniqu	s, it's important for the byproduct to be local; otherwise, there's a	n impact
5 Associations and foundations		ical substance	s in aquifers and external storage tanks (drugs, PFAS, Triazine, glyphos	ate)
6			dues in agricultural fields	,
7			andonment of mountain territories	
8	8			
9	9			
10	10			
11				
12				
13				
1_t			212_t	
1 t			212_t	
<u>1</u> t			Thinking about the current resources and needs identified, what	
1_t ▼ Q11. What ideas do you have for involving women, the unemploy	ed, and the youth in this area?			rcular?
			Thinking about the current resources and needs identified, what	
Q11. What ideas do you have for involving women, the unemploy	e investments		Thinking about the current resources and needs identified, what D Thinking about the current resources and needs identified, what	ic actions
Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to mak 1	e investments		Thinking about the current resources and needs identified, what Thinking about the current resources and needs identified, what Local-level organization with specific objectives and strateging	ic actions
Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to mak Young people are more interested in closing the supply cha	e investments		Thinking about the current resources and needs identified, what D improvements could be implemented to make the process more ci Local-level organization with specific objectives and strategi Increases in public funding for these investments reco	ic actions ducing the
Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to mak Young people are more interested in closing the supply cha 2 activities	e investments ain and engaging in multifunctional farm		Thinking about the current resources and needs identified, what D Improvements could be implemented to make the process more ci Local-level organization with specific objectives and strategi Local-level organization funding for these investments rec bureaucracy.	ic actions ducing the
 Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to make Young people are more interested in closing the supply cha activities No differences observed between men and women 	e investments ain and engaging in multifunctional farm		Thinking about the current resources and needs identified, what D Improvements could be implemented to make the process more ci Local-level organization with specific objectives and strategi Local-level organization function for these investments rec bureaucracy. Joining forces to support the expenses of a new technologie	ic actions ducing the
 Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to make Young people are more interested in closing the supply chate 2 activities No differences observed between men and women Higher salaries to allow a larger and more normal family life 	e investments ain and engaging in multifunctional farm		Thinking about the current resources and needs identified, what D improvements could be implemented to make the process more of Local-level organization with specific objectives and strateging Increases in public funding for these investments reconstruction bureaucracy. 3 Joining forces to support the expenses of a new technologies Entrepreneurial capacity	ic actions ducing the
 Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to make Young people are more interested in closing the supply chate 2 activities No differences observed between men and women Higher salaries to allow a larger and more normal family life Workplace closer to your home (smart-working essential) 	e investments ain and engaging in multifunctional farm		Thinking about the current resources and needs identified, what D improvements could be implemented to make the process more of Local-level organization with specific objectives and strategi Increases in public funding for these investments rec 2 bureaucracy. 3 Joining forces to support the expenses of a new technologie Entrepreneurial capacity 5 Reduction in investment payback periods	ic actions ducing the
 Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to make Young people are more interested in closing the supply chate 2 activities No differences observed between men and women Higher salaries to allow a larger and more normal family life Workplace closer to your home (smart-working essential) Non-toxic working place 	e investments ain and engaging in multifunctional farm fe		Thinking about the current resources and needs identified, what D improvements could be implemented to make the process more of Local-level organization with specific objectives and strategi Increases in public funding for these investments rec 2 bureaucracy. 3 Joining forces to support the expenses of a new technologie Entrepreneurial capacity 5 Reduction in investment payback periods 6	ic actions ducing the
 Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to make Young people are more interested in closing the supply che 2 activities No differences observed between men and women Higher salaries to allow a larger and more normal family lift Workplace closer to your home (smart-working essential) Non-toxic working place Personal growth at work 	e investments ain and engaging in multifunctional farm fe		Thinking about the current resources and needs identified, what D improvements could be implemented to make the process more of Local-level organization with specific objectives and strategi Increases in public funding for these investments rec 2 bureaucracy. 3 Joining forces to support the expenses of a new technologie Entrepreneurial capacity 5 Reduction in investment payback periods 6	ic actions ducing the
 Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to make Young people are more interested in closing the supply che 2 activities No differences observed between men and women Higher salaries to allow a larger and more normal family lift Workplace closer to your home (smart-working essential) Non-toxic working place Personal growth at work Promote the multifunctionality of the forest and the multidia 	e investments ain and engaging in multifunctional farm fe		Thinking about the current resources and needs identified, what D improvements could be implemented to make the process more of Local-level organization with specific objectives and strategi Increases in public funding for these investments rec 2 bureaucracy. 3 Joining forces to support the expenses of a new technologie Entrepreneurial capacity 5 Reduction in investment payback periods 6 7	ic actions ducing the
 Q11. What ideas do you have for involving women, the unemploy The older the entrepreneur, the more likely they are to mak Young people are more interested in closing the supply che activities No differences observed between men and women Higher salaries to allow a larger and more normal family lif Workplace closer to your home (smart-working essential) Non-toxic working place Personal growth at work Promote the multifunctionality of the forest and the multidi 8 sustainable way and develop ecosystem services 	e investments ain and engaging in multifunctional farm fe		Thinking about the current resources and needs identified, what D Improvements could be implemented to make the process more of Local-level organization with specific objectives and strategi Increases in public funding for these investments rec bureaucracy. Joining forces to support the expenses of a new technologie Entrepreneurial capacity Reduction in investment payback periods	ic actions ducing the



Q13_t	
D	💌 Do you know of a more circular approach/technology that will help your RR work in a more circular way 💌
	Innovative composting cycle for depleted floriculture substrates
	2 Wastewater treatment methods
	3 Sustainable logistics (electric, or hydrogen, or biomethane trucks, Etc.)
	4 Public investments or rewards in sustainable working groups or businesses
	5
	6
	7
	8
	9
	10



5.4.2 Information for the "TranslateTables" sheet.

Country: Italy Region: North							
SECTION	1 - TRANSLATIO	OF VALUES FROM DR	OPDOWN FIELDS IN THE	BBIONETS INVEN	TORY		
Lenion	1 110/1102/1101			BBIOHEIGHITTEH	TORT		
	TILE		71.2.1			71.51	
	Q1 Answers	Reference sector	Q1 Answers	Key Word		Q1 Answers	Categories
		A1.6Support activities to agriculture					Crop residues and pe
	Wastewater	and post-harvest crop activities	Wastewater	Water Outdoor horticulture and woodu		Wastewater	plants F1
				crops (incl. viticulture, olives, fruit,			Crop residues and p
	Chestnut coppicing	A1.2Growing of perennial crops	Chestnut coppicing	ornamentals)		Chestnut coppicing	plants F1
		A2.1Silviculture and other forestry					Waste or recycled ma
	Forest resource	activities	Forest resource	Forestry		Forest resource	FC
				Outdoor horticulture and woody crops (incl. viticulture,olives, fruit,			Crop residues and p
	Woody pruning residues	A1.2Growing of perennial crops	Woody pruning residues	ornamentals)		Woody pruning residues	plants F1
	······································			,		Herbaceous pruning	Crop residues and p
	Herbaceous pruning residues	A1.1Growing of non-perennial crops	Herbaceous pruning residues	Arable crops		residues	plants F1
		A1.6Support activities to agriculture		Circular economy, incl. waste, by-			Waste or recycled ma
	Olive mill effluents	and post-harvest crop activities	Olive mill effluents	products and residues		Olive mill effluents	FC Crop residues and pe
	Depleted substrates	A1.1Growing of non-perennial crops	Depleted substrates	Soil		Depleted substrates	plants F1
		A1.6Support activities to agriculture		Circular economy, incl. waste, by-			Waste or recycled ma
	Agro-food waste	and post-harvest crop activities	Agro-food waste	products and residues		Agro-food waste	FC
		A1.6Support activities to agriculture		Circular economy, incl. waste, by-			Waste or recycled ma
	Olive pomace	and post-harvest crop activities	Olive pomace	products and residues		Olive pomace	FC
	Uncultivated land	A1.1Growing of non-perennial crops	Uncultivated land	Soil		Uncultivated land	Crop residues and po plants F1
	Circultrated faile	A1.6Support activities to agriculture	On California California	Circular economy, incl. waste, by-		Cilcularated faild	Waste or recycled ma
	Grape marc	and post-harvest crop activities	Grape marc	products and residues		Grape marc	FC
							Waste or recycled ma
	Manure	A1.4Animal production	Manure	Animal husbandry		Manure	FC
	Whey	A1.6Support activities to agriculture and post-harvest crop activities	Whey	Circular economy, incl. waste, by- products and residues		Whev	Waste or recycled ma FC
	Male claves (They are sent for	and post natrest crop detrices	Male claves (They are sent for	products did residues		Male claves (They are sent	
	slaughter in the Netherlands when a		slaughter in the Netherlands when a			for slaughter in the	
	valorization chain could be created		valorization chain could be created			Netherlands when a	
	locally).	A1.4Animal production	locally).	Animal husbandry		valorization chain could be	



Q1 Answers	Feedstock	Q1 Answers	Value chains
wastewater	Wastes	Wastewater	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
Chestnut coppicing	Biomass residues	Chestnut coppicing	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
orest resource	Biomass	Forest resource	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
/oody pruning residues	Biomass residues	Woody pruning residues	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
lerbaceous pruning esidues	Biomass residues	Herbaceous pruning residues	 Low potential - Low to medium arisings of feedstock available between 2023-2035
Olive mill effluents	Wastes	Olive mill effluents	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
Depleted substrates	Biomass	Depleted substrates	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
\gro-food waste	Wastes	Agro-food waste	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
Dlive pomace	Biomass residues	Olive pomace	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
Incultivated land	Biomass	Uncultivated land	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
Grape marc	Wastes	Grape marc	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
Vlanure	Wastes	Manure	 Low potential - Low to medium arisings of feedstock available between 2023-2035 Low potential - Low to medium arisings of feedstock
//hey /lale claves (They are sent	Wastes	Whey	available between 2023-2035
or slaughter in the letherlands when a		Male claves (They are sent for slaughter in the Netherlands when a valorization chain could be created	1- Low potential - Low to medium arisings of feedstock
alorization chain could be	Biomass	locally).	available between 2023-2035



78.L1	78.21	T8. <u>S_</u> 1		
Q8.1 Answers: key stakeholders	Nature of collaboration	Type of collaboration	Type of partners	
CREA	Applied research	Open	Researcher	
Nationa Rural Network	Consultation	Open	Advisor	
AGRION	Applied research	Open	Researcher	
Territorial Forestry Consortia	Partnership	Open	Advisor	
ISPRA	Applied research	Open	Researcher	
Universities Ministry - Forestry	Applied research	Open	Researcher	
lvlinistry – Forestry Direction	Consultation	Open	Advisor	
Piedmont Region	Consultation	Open	Advisor	
Confindustria Cuneo	Advisory		Advisor	
CLEVER innovation hub	Networking		Other	
Chimica Verde Bionet	Networking		Other	
Food and Wine hub CIC composters	Networking		Other	
consortium	Advisory+ networking		Advisor	
	Networking+training		Training organization	
4p1000			Training organization	



	In these cells, we are interpreting the drop-down		In these cells, we are interpreting the drop-down			
	options are low, medium, or high potential of		options are low, medium, or high potential of			
	carbon sequestration as low, medium, or high		environmental benefits as low, medium, or high			
	potential of carbon emissions. The wording of		potential of environmental impacts. The wording			
	the drop-down cells does not reflect this because		of the drop-down cells does not reflect this			
T10.1 t	of how the tool works.	T10.2 t	because of how the tool works.		711 t	
710.1_0	of now the tool works.	110.2_0	because of now the tool works.		111_0	
Q10 Answers	C Sink	Q10 Answers	Envi Sustainability		Q11 Answers	Socio Sustainability
	2 - Medium potential - strong potential for carbon		2 - Medium potential - Expected to bring 2 or 1		The older the entrepreneur, the more likely they	2 - Medium potential -Expected to bring 2 or 1 social
	sequestration at the feedstock or product level only.	Wastewater	environmental benefits.		are to make investments	benefits.
	, and a second sec				Young people are more interested in closing the	
	2 - Medium potential - strong potential for carbon		2 - Medium potential - Expected to bring 2 or 1		supply chain and engaging in multifunctional farm	2 - Medium potential -Expected to bring 2 or 1 social
	sequestration at the feedstock or product level only.	Accumulation of phytosanitary products	environmental benefits.		activities	benefits.
recommendation of phycosonically produces	sequestion at the recustory or product level only.	reconcision of phytosenitery products	controlline dell'entito.		activities .	ochemes.
Accumulation of water-insoluble organic	2 - Medium potential - strong potential for carbon	Accumulation of water-insoluble organic	2 - Medium potential - Expected to bring 2 or 1			2 - Medium potential -Expected to bring 2 or 1 social
					1. um 1. 1. 1. 1.	
	sequestration at the feedstock or product level only.	components	environmental benefits.		No differences observed between men and women	benents.
Even when using circular techniques, it's important		Even when using circular techniques, it's important				
for the byproduct to be local; otherwise, there's an		for the byproduct to be local; otherwise, there's an			Higher salaries to allow a larger and more normal	2 - Medium potential -Expected to bring 2 or 1 social
	sequestration at the feedstock or product level only.	impact from transportation	environmental benefits.		family life	benefits.
Accumulation of chemical substances in aquifers		Accumulation of chemical substances in aquifers				
and external storage tanks (drugs, PFAS, Triazine,	2 - Medium potential - strong potential for carbon	and external storage tanks (drugs, PFAS, Triazine,	2 - Medium potential - Expected to bring 2 or 1		Workplace closer to your home (smart-working	2 - Medium potential -Expected to bring 2 or 1 social
	sequestration at the feedstock or product level only.	glyphosate)	environmental benefits.		essential)	benefits.
Use of sewage sludge or related residues in	2 - Medium potential - strong potential for carbon	Use of sewage sludge or related residues in	2 - Medium potential - Expected to bring 2 or 1			2 - Medium potential -Expected to bring 2 or 1 social
	sequestration at the feedstock or product level only.	agricultural fields	environmental benefits.		Non-toxic working place	benefits.
	and a contract of the second of product level only.		and a benefits.		terre to the transmis proce	
Hydrogeological instability due to abandonment of	2 - Medium potential - strong potential for orthog	Hydrogeological instability due to abandonment of	2 - Medium potential - Expected to bring 2 or 1			2 - Medium potential -Expected to bring 2 or 1 social
		mountain territories	2 - Medium potential - Expected to bring 2 or 1 environmental benefits.		Remenal mouth at work	2 - Medium potential -Expected to bring 2 or 1 social benefits.
mountain territories	sequestration at the feedstock or product level only.	mountain territories	environmental benefits.		Personal growth at work	Denents.
					Promote the multifunctionality of the forest and	
					the multidisciplinary to manage the forest in a	2 - Medium potential -Expected to bring 2 or 1 social
					sustainable way and develop ecosystem services	benefits.
			- 			



C	ECTION 2 - ADDING EX	TDA INCODMATION TO	TRANSLATE VALUE	EDOM WORKSHOD				
3	ECHON 2 - ADDING EA	TRA INFORMATION I	J TRANSLATE VALUE.	S FROM WORKSHOP	AVVINSERS			
75.3 t		n the Inventory_copy sheet is in T/Day. If that is r				75.4 t sing capacity", colum AQ, in the I	nventory_copy sheet is in T/Day. If that is	
	a. Average fa Biomasses identified from Q1	Avg. yearly yield of biomasses per farm	Estimated Avg. tonnes of biomass per farm per d			05.4 Answers. National statistics data. AviBiomasses identified from 01	Avg. yearly yield of biomasses per forest	
Q3.5 Answers, National statistics data	16.00 Wastewater	Avg. yearry yield of biomasses per famil	Estimated Avg. tonnes of biomass per farm per d	source of mormation		6.20 Wastewater	Avg. yearry yield of biomasses per forest	estimated Avg. tormes or bromass per ron-
	Chestnut coppicing					- Chestnut coppicing		
	Forest resource					- Forest resource		
	 Woody pruning residues 					- Woody pruning residues		
	 Herbaceous pruning residues 					 Herbaceous pruning residues 		
	 Olive mill effluents 					- Olive mill effluents		
	 Depleted substrates 					- Depleted substrates		
	 Agro-food waste 					 Agro-food waste 		
	 Olive pomace 		· · ·			- Olive pomace		
	 Uncultivated land 		· · · ·			- Uncultivated land		
	Grape marc		· · · · ·			Grape marc		
	Manure			-		Manure		
	Whey	the Netherlands when a valorization chain could be cr				Whey	er in the Netherlands when a valorization chai	
	Wate daves (They are sent for staughter in	the Nethenands when a valorization chain could be cr				Male claves (They are sent for slaugh	er in the Nethenands when a valorization chai	

T2.1 t		T2.2 t		T3 t		
Q2 Answers	Key word to find in "Description BBT"	Q2 Answers	Key word to find in "Intended user / conditions of access"	Q3 Answers	Key word to find in "Outcomes and final	d pr
Plant for compost from green pruning residu	s compost	Plant for compost from green pruning residues	pruning	Biogas	gas	Т
Biochar	pyrolysis	Biochar	biochar	Compost	compost	
Biogas production from converting farm by-p	oduanaerobic digestion	Biogas production from converting farm by-proc	dubiogas	Energy	energy	
Vermicompost	vermicompost	Vermicompost	vermicompost	Biomasses	biomass	
Nutraceutical compounds extraction plants	extraction	Nutraceutical compounds extraction plants	extraction	Wood processing residues	wood	
Distillation apparatus, e.g., Clevenger	distillation	Distillation apparatus, e.g., Clevenger	distillation	Frozen insect larvae	insect	
Microalgae production plants	microalgae	Microalgae production plants	algae	Digested substrate - frass fertilizer	fertiliser	
Local wood processing facilities, e.g., sawmil	s,	Local wood processing facilities, e.g., sawmills,				
debarker	wood	debarker	sawmill	HazeInut shells for secondary metabolite	e combustion	4
Compost and biogas from olive-mill waste	glive	Compost and biogas from olive-mill waste	biogas	Wood waste for construction materials	construction	
Plants for processing whey into feed or infan		Plants for processing whey into feed or infant				
milk powder	whey	milk powder	milk	Biofertilizers and biostimulants from ani	infertiliser	
Cosmetics from processing grapes residues	grape	Cosmetics from processing grapes residues	cosmetic	Mushroom production on aromatic plant	r mushroom	



5.4.3 Information for the "Weight" sheet

Workshop answers regarding processing needs (as visual reference only)		Inventory answers to BBTs needs/problems statement	Manually add weight to BBTs after reading the workshop anwsers	
W4_t Q4. What are your representative region's processing needs regarding primary and secondary resources? (identified needs should be ranked from high to low)	BBT CODES	BBT NEEDS/PROBLEM STATEMENT	Weight	
Transformation chains of plant residues into second raw materials - e.g. Biostimulants, phytosanitary products ion	IE10-Biorefinery Glas/GLAS IT11-FABER/FABER	To improve the sustainability, value and resource efficiency of Ireland's livestock sector through farmer diversification into the bioeconomy and to assess the potential role of grass biorefinery in supporting sustainable and resilient communities in rural Ireland. Forest biomass and its management to address climate change and GHG emissions.	1	
ces for investments ial and/or supply chain projects ination visibility– e.g. advertising	FI12-ForestChip4Farm/FC4FH DE13-Lignocellulosic Biorefinery/LIGNO EL14-BIO2CHP/B2CHP	Preventing climate change, increasing bioenergy in rural areas, decreasing CO2 emissions from farms and the food chain, promoting a sustainable food chain, and developing new innovations and products. To valorize the lignocellulosic residues (meadow grass) from farms in a sustainable way. bypasses technical limitations & allows the use of residual biomass for small-scale & on-site energy production	1 1 1 1	
rmation plants ry chain of depleted substrates from floriculture il and assortment storage yards Forestry and woodworking mobile equipment – e.g. mobile	IT15-Scarabeo/HMP2C HU16-REFERTIL/3RZRO IT17-Mountain Carbon/MNTNC	There is a need for sustainable and efficient methods in the hemp supply chain to increase quality, valorize and reduce energy consumption. Recycling and valorization of un-exploited farm and animal by-products to help improve the management of the organic matter (OM) from dairy cattle manure in the mountain areas a cost-effective and efficient way to produce bio-coal from late harvested hay pellets to benefit small and medium-sized	1 -1 -1	
sawmill, woodchippers, etc. ≥quipment 11 Production of thermoplastic starch for the manufacturing of I	EE18-Hay Biosyngas/HAYBG FI19-Wood2Biogas/Wd2BG bi IT20-Clean-ER/CLINR FR21-SeCOPPA /ALFLF	entrepreneurs to produce and use the gasification gas to boost methane formation in the biogas process, and simultaneously produce biochar, and the use of woody materials in biogas energy production without increasing the amount of digestate from the biogas process The accumulation of low economic value woody/shrub biomass in mountain areas poses a significant threat as it increases the risk of challenges in efficiently drying alfalfa for animal feed, and a need to utilize manure and shredded wood from hedgerows	-1 1 1	
	IE22-BBFB/CHAR IE23-SBDP/BGAS DE24-GrassBiowert/BWERT BE25-Grassification/GRSFY	The unutilised biomass is left to decay which returns carbon dioxide to the atmosphere while also control of vegetation, by herbicic The intensification of Irish agriculture, particularly in dairying, has raised concerns about its environmental impact as it is a significal Displacement of fossil based products with bio-based alternatives, while offering rural diversification opportunities. Valorization of roadside grass clippings and improving its digestion with other feedstock, as monodigestion of grass can be technica	n -1 1 I -1	
	FR26-Pyrogreen/PYROG DE27-GO-GRASS/GOGRS NL28-GO-GRASS/GOGRS DK29-GO-GRASS/GOGRS	A bio-based technology that supports valorizing, recycling and recovering of resources by providing a versatile and easy to impleme The grass from protected wetland areas in the polder meadows is heterogeneous, in parts strongly lignified (rigid) and its nutrition Low quality natural and roadside grass are used for low added value applications such as compost which also includes costs associat The conversion of annualcrops such as maize, rapeseed and cereals into grassland can significantly reduce nitrate leaching under EU	a 1 (1 -1	
	PT30-Spawnfoam/SPAWN DE31-MixBioPells/PLTIZ DE32-MixBioPells/PLTHP DE33-BIOlution/BIOLT	changing the paradigm of production and consumption of fossil-based composites and materials, such as plastics, by providing an in Since nowadays wood is getting more scarce caused by the growing demand in material and the energetic use, alternative solid biol in Europe small-scale combustion units (20 to 200 kW) are used almost only with high quality wood fuels, and nowadays wood is get Agricultural waste such as tomato and wheat wastes are not used, which has an environmental impact and a management cost for th	1 1 1 1	
	FR34-GRANUL'HAIE/WdPLT ES35-Bioferti+/BFTZ+ NL36-ManurePellet/MnPLT IT37-BIOECO_FLIES/W2BSF	To enhance the value of local raw materials to meet the increasing demand from consumers who are interested in buying local proc Waste recovery of cattle manure and other organic waste, to increase the biological and physical-chemical quality of agricultural so a higher percentage of organic matter, a better soil structure and more binding of nutrients in the soil, a problem is formulated for a to valorize agrifood biomass beyond the typical low added value applications such as fertilizer or biomass for digesters	1	
	DK38-Macrofuels/CWEED IT39-Res4Carbon/RES4C FR40-SIVABA/WdPwr BE41-BierbeekCHIP/Wd2CN LT42-cogeneration residue/Res2F	There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bio-based to define the best practices to guarantee maximum technical, economic and environmental efficiency in the processing, handling an The need to better articulate the various links in the wood energy sector in order to increase its visibility vis-à-vis potential consum to valorise the woody material coming from the municipal hollow roads and the wood edges after shredding on the local fields of B a need to develop a production technology for a new type of fertilizer using wood ashes and digestate	1 6 1	



LT42-cogeneration residue/Res2F	a need to develop a production technology for a new type of fertilizer using wood ashes and digestate	1
IT43-CAREGA/4COAL	a gradual abandonment of the forests and a progressive decrease in commercial relations between forest owners, forestry compani	1
IT44-COBRAF/COBRA	develop an articulated system of biorefineries that allows maximum exploitation of the biomass of oil crops (hemp, safflower, flax	-1
IT45-Stabilized Litter/StbMn	the impact of stabilized litter obtained from the solid/liquid separation of slurry subjected to a process of sanitation and stabilization	-1
T46-BIOACTAM/BIOAA	to develop and validate a new generation of products, based on the partial pyrolysis of ligno-cellulosic biomass deriving from forest	1
PT47-GOEfluentes /GoEFt	increase the efficiency of water and nutrient utilization, reduce the environmental impact of farming and add value to agricultural w	-1
ES48-INCREdible/RESIN	addressing challenges faced by resin as a non-wood forest product	1
LV49-WoodResidueLV/W2IHF	developing innovative technological solutions to reclamation of wood processing by-products, further processing and adding value t	1
T50-RBR-EAS/BCH4R	using different residual biomass with energy purposes (biofuel production), agricultural (production of fertilizer) and food (dietary s	1
AT-Closing cycles/NTREC	Farms need a reasonably closed nutrient cycle to recover energy and resources	1
PL-BIOGAL/BIOGL	Livestock sector has several challengesbecause of the management of theresources and wastes produced. Manure isone of the bigge	1
ES-LIFE Smart Fertirrigation/FRTGN	pig meat production generates large amounts of manure leading to important environmental problems and many anaerobic digestic	-1
BE-DIGESMART /DIGST	Biogas production is efficient at reducing agricultural emission by converting the biomass into electricity and thermal energy (cogen	-1
NL-VORTEX/VORTX	Manure stripping innovation for efficiency and cost	-1
NL-Manure Evaporation/EVAPR	Different manure processing techniques are already available and the thick fraction can be well tolerated. However, the reduction o	
DE-Manure Efficiency/MNURE	to develop a procedure for liquid slurry processing for agricultural enterprises, with which slurry and manure can be used to produce	1
SE-Manure Refining/MNRRF	to produce concentrated, transport-efficient fertilizers from biogas plant that produces large amounts of digested manure, as well a	1
BE-HIATUS/WATER	Almost every year, farmers face water shortages due to drought. Therefore, they are looking for alternatives for this valuable water,	-1
ES-GO IMECO/PgSLR	slurry management and treatment system for ensuring the product generated in pig farms is more competitive and has a lower envir	-1
FI-LEX4BIO/BBFRT	reducing dependency on mineral and fossil-based fertilizers by optimizing the use of bio-based fertilizers (BBFs)	 1
IT-ProBEST/BARK		1
· · · · · · · · · · · · · · · · · · ·	In the production of forest wood fuels, the presence of bark and twigs must be limited, these can be chipped and delivered, essentially the presence of bark and twigs must be limited these can be delivered as a statistical statement (as the presence of bark and twigs must be limited).	
IT-ProBEST/ASHES	In the production of forest wood fuels, the incombustible elements (ash) must be limited. these can be delivered, essentially at cos	1
IT-FiLeProPri/WSC	Face the problem of the socio-economic marginality of wood production in private property.	1
T-ROSAEXTREM/NRH	Encourage the restructuring of farms with structural problems considerable	-1
IT-M.ER.LI.n/MERL	Analyze needs of partner companies to identify implementation opportunities innovative solutions that are energetically sustainabl	-1
IT-INNOVABIOZOO/INZOO	The project consists of a series of actions divided into the following areas work: preparatory phase, coordination and animation, ado	-1
ES-AgriCarbón/AC	In Andalusia, agricultural activities play an important role in the socio-economic development which generates contamination in sur	1
ES-AGUACAVALUE/BYPRO	Promotes possible alternatives for the valorisation of avocado by-products by studying the characterisation of their nutritional profil	-1
ES-AGUACAVALUE/AVOCA	Spain concentrates the 93% of the avocado production in Europe. Malaga and Granada (Andalusian provinces) have the 88% of the to	-1
ES-CHERRY4FOOD/CHERR	There is a need for the processing industries of tomato products (gazpacho and salmorejo) to utilise the by-products generated in the	1
ES-TOMATOGROUP/TOMAT	There is a need for valorisation of the tomato chopping which currently is a residue with no value.	1
ES-BIOSUERO/WHEY	In Andalusia, it is produced a large quantity of milk whey every year. From 10 L of milk, it is obtained 1 kg of cheese and 9 L of whey.	-1
ES-Biochar/BIOCH	The project is mainly focused on the Western Coast of Huelva (Avamonte, Isla Cristina, Lepe, Cartava, Gibraleón, Punta Umbría and A	-1
ES-BIORUMIOLI/FEED	Need to increase the profitability of livestock farms and create an alternative for the olive oil industry by achieving a more efficient	-1
ES-OleoValoriza/OLIVE	The olive-mill waterwaste constitute one of the most important environmental problems in olvie cooperatives, since they are chara	1
ES-OleoValoriza/OLIV2	The reuse and recovery of olive by-products are essential to reduce environmental pollution and contribute to increasing the efficie	
CZ-TJ02000130/	Among the difficult tasks are the application of fugate (a by-product of biogas production) and the dependence on prest (a non-renev	-1
CZ-QK1920328/	The progressive large-scale decay of spruce stands affecting many areas in the Czech Republic can hardly be prevented and we have	-1
CZ-QK1920214/	The progressive range state access of sprace stands interacting that y access the point and y access the provide and we have a state access of a sprace transmission of the state access of the state acc	-1
CZ-TH03030319/	Efficient use of processed field by-products.	-1
CZ-QK1710379/		
· · ·	Use of sewage sludge as a valuable waste raw material in agriculture.	-1
CZ-TH02030681/	The establishment of field crops (maize) is currently carried out in the form of monoculture. This causes surface runoff of rainwater a	-1
CZ-TH02030925/	Increasing the composting rate, especially when processing bulky materials (urban green waste, sludge), which are increasingly proc	-1
CZ-SS06020282/	Conventional mechanical recycling of biopolymers is currently not a technologically feasible process, as their products often end up	-4
CZ-TK04010166/	There is a need to update biomass potential in the light of changing factors affecting land use and biomass yields, including updating	1
CZ-FW06010358/	Reduction of the consumption of liquid substances (including liquid fertilisers) per unit area, in particular better use of these substa	-1
EL11-HIPO-ENERGY/NUTRI	 management of Hippophae leaves, which are cultivated only for the harvesting of the fruit- existing studies highlight the nutritiona 	-1
EL12-AEIФOPIKA KHIIEYTIKA/OREG	control of downy mildew (caused by soil fungi with negative effects in the production) in the context of the circular economy and the	-1
EL13-OLIHERB/OLIVE	management of the significant quantities of olive leaves produced as by-products during cultivation (pruning), harvesting of olives a	1
EL14-BioAnimalChar/PIG	cost and quality of pig feed	-1
EL15-COMPOST-INNO/COMPO	- lack of sufficient amounts of organic waste in the cultivation sites - distance of the sources of organic matter from the places of prov	-1
L16-Compo - Laventer/COLAV	increase of the production and the quality of lavender oil	-:
L17-AGROSCHOOLBUS.BIO/RESOL	Sustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees).	
L18-SoilCircle/	Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply so	
EL19-YFEIAPTOZ/YOGO	Exploitation of both goat milk and espresso coffee residues	-3
	ractic Handling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic n	
EL21-EΛΑΙΩΝΑΣ/OLFER	Management of waste and wastewater generated during the olive farming and olive oil production processes	
PL91-OrzechDębu/ACORN	Changing trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The vi	
PL93-GRIST/GRIST	Organic grain production and processing of brewery residues into meal, using an innovative dehydration method	
pl94-Owoce 4.0/Owoce 4.0		-1
p194-OWOLE 4.0/OWOLE 4.0	Development of technology dedicated to currant plantations 0 0	-1
Funded by	0	

5.5 Poland

5.5.1 Information for the "Workshop Answers" sheet.

FAN Country: Poland		
FAN Region: Poland		
	Q1_t	02_t
	ID VQ1. What are the primary or secondary resources available in your representative region?	ID Q2. What processing equipment is currently being used in your representative region?
	1 Straw	1 anaerobic digestion plants
	2 Manure	2 manure separators
	3 Slurry	3
	4 fruits and vegetables press waste	4
	5 grass	5
	6 Timber	6
	7 roots	7
	8 branches	8
	9	9
	10	10
	11	11
	12	
	13	
	14	
	15	
	16	
	17	
	18	
	19	
	20	
	21	



Q3_t	Q4_t
ID Q3. What secondary products/by-products are currently being generated in your representative region?	Q4. What are your representative region's processing needs regarding primary and secondary resources?
1 bio-fertiliser	1 root harvesting equipment
2 soil conditioner	2 Biogas production from converting farm by-products with farm-scale anaerobic digesters
	Press cake and protein for cattle and pig feed, respectively, using green biorefineries processing grasses
3 compost	3 and other green leaves
4 biogas	4 Biochar production
5 digestate	5 RENURE fertiliser production- Recovery Nitrogen from manure
6	6
7	7
8	8
9	9
10	10
11	11 .

Q5.1_t	Q5.2_t
Q5. What is the size/total area of the farm or forest in your representative region?	Q5. What is the size/total area of the farm or forest in your representative region?
Values provided by the FAN members: Range of farm size of the stakeholders which FAN	Values provided by the FAN members: Range of forest size of the stakeholders which FAN
ID Tempers interact with (ha): e.g. 10 – 400 ha	ID The members interact with (ha):
1 10-1000	1 10-1000
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10



Q5.3_t	Q5.4_t	
Q5. What is the size/total area of the farm or forest in your representative region?		Q5. What is the size/total area of the farm or forest in your representative region?
National statistics data:		National statistics data:
D Average farm size (ha):	T ID T	Average forest size (ha):
1 11	.3	1 0.243
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
10	. 1	0
)5.5_t	Q5.6_t	
Q5. What is the size/total area of the farm or forest in your representative region?		Q5. What is the size/total area of the farm or forest in your representative region?
National statistics data:		National statistics data:
D Region total farmed area (ha):	ID 🔻	Region total forest area (ha):
1 14,126,274.8		9,476,925.67
2		2
3		3
4		4
5		5
6		5
7		7
8		3
9		9
10	. 10	
	-	



Q6.1_t	Q6.2_t
Q6. How much would the farmers/foresters in your representative region be willing to invest in the short term time (2 years) to implement a technology or practice that would help them process their current ID ▼ resources into bio-products/by-products? Range €	Q6. How much would the farmers/foresters in your representative region be willing to invest in the long- term time (5 years) to implement a technology or practice that would help them process their current ID ▼ resources into bio-products/by-products? Range €
1 € 244,185.90	1 € 1,395,348.60
2 € 366,278.85	2 € 2,093,022.90
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10

Q7_t			Q8.1_t	
D	Q7. What return on investment period (number of years) is acceptable for investment in a bio-based technology? Please provide an average value of FAN and a range of values (years).		ID Q8. What key stakeholders are you currently interacting/collaborating with?	
	1		1 farmers	
	2		2 scientific institutions	
	3 · · · · · · · · · · · · · · · · · · ·		3 farmers, entrepreneurs, scientific institutions 4 local government administration 5	
	6		6	
	7		7	
	8		8	
	9		9	
	10		10	



Q8.2_t		Q8.	3_t
ID 💌 Q8. Nature of collaboration: e.g. advisory	*	ID	Q8. Type of collaboration: open or closed to new members or partners.
1 advisory			1 open
2 cooperation in project implementation			2 open
3 cooperation within the cluster			3 open
4 cooperation in organizing local workshops and agricultural fairs			4 open
5			5
6			6
7			7
8			8
9			9
10			10
Q9_t	Q10_t		
ID 🔻 Q9. Where do you go for information in your region?	ID		st significant environmental impacts in the region worrying your sector (forest/agriculture)?
1 advisory service		1 fertilization	
			the development of construction. Occupying suburban areas that were previously used for
2 internet		2 agriculture or as sub	urban recreational areas for development
3		3 extensive forest man	aromont
4		4	agement
5		5	
6		6	
7		7	
8		8	
9		9	
10		10	
11			
12			
13			
14			
15			
16			
17			



Q11_t	012_t
ID VII. What ideas do you have for involving women, the unemployed, and the youth in this area?	ID Thinking about the current resources and needs identified, what improvements could be implemented to make the process more circular
1 youth education at school	1 slurry separation
2 organization of workshops with presentation of success stories of specific farms, start-ups	2 root harvesting equipment
3 Open days for farmers	3 processing animal excrement into modern fertilizers: RENURE -Recovered Nitrogen from manure
Promotion at Rural Housewives' Associations (KGW) are a representative example of social	
4 organisations shaped in the spirit of Polish tradition)	4 processing of agro-food waste
5	5 biochar production
6	6 pellet from agricultural waste
7	7
8	8
9	9
10	10
11	

213_t	
D	Do you know of a more circular approach/technology that will help your RR work in a more circular way
	1 Introduction of technology to produce RENURE
	Introduction of biomass coaling installation
	3 mobile pellet production machine
	4
	5
	6
	7
	8
	9
	10



5.5.2 Information for the "TranslateTables" sheet.

N Country:	Poland					
I Region:	Poland					
	SECTION 1 -	TRANSLATION OF VALUES FROM DI	RUDUUU	FIFI DS IN THE BR	IONETS INVENTORY	
	326110111					
	71.1 t			74.0.4		
		Reference sector		71.2_t Q1 Answers	<i>и</i> ни т	
	Q1 Answers				Key Word	
	Straw	A1.1Growing of non-perennial crops		Straw	Arable crops	
	Manure	A1.4Animal production		Manure	Animal husbandry	
	Slurry	A1.4Animal production		Slurry	Animal husbandry	
	Fruits and vegetables press waste	A1.6Support activities to agriculture and post-harvest crop activities		Fruits and vegetables press waste Grass	Food security, safety, quality, processing and nutrition Fodder and feed	
	Grass	A1.2Growing of perennial crops		Timber		
	Timber	A2.2Logging			Forestry	
	Roots	A2.2Logging		Roots	Forestry	
	Branches	A2.2Logging		Branches	Forestry	
					-	



T1.3_t		T1.4_t	
Q1 Answers	Categories	Q1 Answers	Feedstock
Straw	Crop residues and perennial plants F1	Straw	Biomass residues
Manure	Waste or recycled material FC	Manure	Wastes
Slurry	Waste or recycled material FC	Slurry	Wastes
Fruits and vegetables press waste	Waste or recycled material FC	Fruits and vegetables p	res Biomass residues
Grass	Crop residues and perennial plants F1	Grass	Biomass
Timber	Crop residues and perennial plants F1	Timber	Biomass
Roots	Crop residues and perennial plants F1	Roots	Biomass residues
Branches	Crop residues and perennial plants F1	Branches	Biomass residues



T1.5_t		T8.1_t	78.2_t	T8.3_t	
Q1 Answers	Value chains	Q8.1 Answers: key stakeholders	Nature of collaboration	Type of collaboration	Type of partners
Straw	3 - High potential - Significant arisings of feedstocks available currently.	Farmers	Advisory	Open	Farmer
Manure	3 - High potential - Significant arisings of feedstocks available currently.	Scientific institutions	Cooperation in project implementation	Open	Researcher
		Farmers, entrepreneurs, scientific			
Slurry	3 - High potential - Significant arisings of feedstocks available currently.	institutions	Cooperation within the cluster	Open	Advisor
Fruits and vegetables			Cooperation in organizing local		
press waste	3 - High potential - Significant arisings of feedstocks available currently.	Local government administration	workshops and agricultural fairs	Open	Public Authority + LA
Grass	3 - High potential - Significant arisings of feedstocks available currently.				
Timber	2 - Medium potential - Significant availability of feedstocks available by 2035.				
Roots	1- Low potential - Low to medium arisings of feedstock available between 2023-2035				
Branches	1- Low potential - Low to medium arisings of feedstock available between 2023-2035				



	In these cells, we are interpreting the drop-down options are		
	low, medium, or high potential of carbon sequestration as		In these cells, we are interpreting the drop-down options are low,
	low, medium, or high potential of carbon emissions. The		medium, or high potential of environmental benefits as low, medium,
	wording of the drop-down cells does not reflect this because		or high potential of environmental impacts. The wording of the drop
T10.1_t	of how the tool works.	T10.2_t	down cells does not reflect this because of how the tool works.
Q10 Answers	C Sink	Q10 Answers	Envi Sustainability
	3 - High potential - strong potential for carbon sequestration at		3 - High potential - Expected to bring at least 3 significant environmenta
Fertilization	the feedstock and product level).	Fertilization	benefits.
		Expansion related to the	
		development of construction.	
		Occupying suburban areas that were	
Expansion related to the development of construction. Occupying		previously used for agriculture or as	
· · · ·	2 - Medium potential - strong potential for carbon	suburban recreational areas for	
suburban recreational areas for development	sequestration at the feedstock or product level only.	development	2 - Medium potential - Expected to bring 2 or 1 environmental benefits.
Extensive forest management	1 - Low potential - low potential for carbon sequestration	Extensive forest management	2 - Medium potential - Expected to bring 2 or 1 environmental benefits.



711_t	
Q11 Answers	Socio Sustainability
Youth education at school	2 - Medium potential -Expected to bring 2 or 1 social benefits.
Organization of workshops with presentation of success stories of	1 - Low potential - doesn't bring any social
specific farms, start-ups	benefits.
	3 - High potential - Expected to bring at least 3
Open days for farmers	significant social benefits.
Promotion at Rural Housewives' Associations (KGW) are a	
representative example of social organisations shaped in the spirit	2 - Medium potential -Expected to bring 2 or 1
of Polish tradition)	social benefits.



	Charle State - Calif Upper section and	a de la calcara do la de a la canta de la calcarda		
75.3 t	Check if the field "Processing cap		eet is in T/Day. If that is not the case, please	
Q5.3 Answers. National statistics data, Average	Biomasses identified from 01	convert the answer in the field to T/I	Estimated Avg. tonnes of biomass per farm <u>per day</u>	Source of information
QJ.J Aliswers, National statistics data, Average	biomasses identified from Q1	Avg. <u>yearry</u> yield of biomasses per nectare (iarm)	Estimated Avg. tomies of biomass per farm <u>per day</u>	
11.20	Changer	1.42	0.0044	Dane Eurostat, suma (plon zbóż * wsp.
11.50	Straw	1.42		Słoma/ziarno [SCIndex]) 2023
				Roczne dane sumy masy obornika i
	Manua	2.718090976		gnojowicy od bydła i trzody dla terenu Polski (tabela CiNURGi na podst. DJP_2020)
-	Manure	2./18090976		· · · · · · · · · · · · · · · · · · ·
				Roczne dane sumy masy obornika i
	Slurry	1.750923836		gnojowicy od bydła i trzody dla terenu Polski (tabela CiNURGi na podst. DJP_2020)
-	Fruits and vegetables press waste	1.750925650		Polski (tabela chiokol na podst. DiP_2020)
-	Grass	0.12		Dane referencyjne Biomasa_2023_baza
-	Timber	0.12	0.0004	Dane referencyjne biomasa_2025_baza
-	Roots			
	Branches			
	branches			
			-	
			-	
			-	
			-	
			-	
			-	
			-	
			-	



	Check if the field "Proce	essing capacity", colum AO, in the Invento	ory_copy sheet is in T/Day. If that is not the	
T5.4_t		case, please convert the answer in th	e field to T/Day.	
Q5.4 Answers. National	Biomasses identified from	(Avg. yearly yield of biomasses perhectare(forest	Estimated Avg. tonnes of biomass per forest per da	Source of information
0.24	Straw		-	
-	Manure		-	
-	Slurry		-	
-	Fruits and vegetables pr	ess waste	-	
-	Grass		-	
				GUS Leśnictwo 2022 w m3, strona 98,
				https://www.bdl.lasy.gov.pl/portal/Media/Default/Publikacje,
-	Timber	4.609215625		GUS_lesnictwo_2023.pdf
				GUS Leśnictwo 2022 w m3, strona 98,
				https://www.bdl.lasy.gov.pl/portal/Media/Default/Publikacje/
-	Roots	8.63493E-05		GUS_lesnictwo_2023.pdf
				GUS Leśnictwo 2022 w m3, strona 98,
	_ .			https://www.bdl.lasy.gov.pl/portal/Media/Default/Publikacje,
-	Branches	0.209828705		GUS_lesnictwo_2023.pdf
-			-	
-			-	
			-	
			-	
			-	
			-	
			-	
			-	
			-	
			-	
			-	



SECTION 3 - TRANSLATION OF VALUES FROM NARRATIVE SYNTHESIS FIELDS IN THE BBIONETS INVENTORY

T2.1_t		T2.2_t		
Q2 Answers	Key word to find in "Description BBT"	Q2 Answers	Key word to find in "Intended user / conditions of access"	
Anaerobic digestion plants	Anaerobic	Anaerobic digestion plants	Anaerobic	
Manure separators	manure	Manure separators	manure	



Key word to find in "Outcomes and final product"	
fertilizer	
soil	
compost	
biogas	
digestate	
	fertilizer soil compost biogas



5.5.3 Information for the "Weight" sheet

AL	AM	AO AO	AP	AQ
Works	shop answers regarding processing needs (as visual reference only)		Inventory answers to BBTs needs/problems statement	Manually add weight to BBTs after reading the workshop anwsers
W4.1				
ID	processing needs regarding primary and secondary resources? (identified needs should be ranked from high	BBT CODES	BBT NEEDS/PROBLEM STATEMENT	¶ ∀eight
	· · · · · · · · · · · · · · · · · · ·		To improve the sustainability, value and resource efficiency of Ireland's livestock sector through farmer diversification into the	-
	1 root harvesting equipment	IE10-Biorefinery Glas/GLAS	bioeconomy and to assess the potential role of grass biorefinery in supporting sustainable and resilient communities in rural Ireland.	1
	Biogas production from converting farm by-products 2 with farm-scale anaerobic digesters Press cake and protein for cattle and pig feed,	IT11-FABER/FABER	Forest biomass and its management to address climate change and GHG emissions.	1
	respectively, using green biorefineries processing 3 grasses and other green leaves	FI12-ForestChip4Farm/FC4FH	Preventing climate change, increasing bioenergy in rural areas, decreasing CO2 emissions from farms and the food chain, promoting a sustainable food chain, and developing new innovations and products.	-1
	4 Biochar production	DE13-Lignocellulosic Biorefinery/LIGNO	To valorize the lignocellulosic residues (meadow grass) from farms in a sustainable way.	-1
	RENURE fertiliser production-Recovery Nitrogen from 5 manure	EL14-BIO2CHP/B2CHP	by passes technical limitations & allows the use of residual biomass for small-scale & on-site energy production	-1_
	e	IT15-Scarabeo/HMP2C	There is a need for sustainable and efficient methods in the hemp supply chain to increase quality, valorize and reduce energy consumption.	-1
	7	HU16-REFERTIL/3RZRO	Recycling and valorization of un-exploited farm and animal by-products	-1
	8	IT17-Mountain Carbon/MNTNC	to help improve the management of the organic matter (OM) from dairy cattle manure in the mountain areas	-1
	9 0	EE18-Hay Biosyngas/HAYBG	a cost-effective and efficient way to produce bio-coal from late harvested hay pellets to benefit small and medium-sized entrepreneurs	-1
			to produce and use the gasification gas to boost methane formation in the biogas process, and simultaneously produce biochar, and the use of woody materials in biogas energy production without increasing the amount of digestate from the	
	10 0	FI19-Wood2Biogas/Wd2BG	biogas process	1
	11 0	IT20-Clean-ER/CLINR	The accumulation of low economic value woody/shrub biomass in mountain areas poses a significant threat as it increases the	1
		FR21-SeCoPPA/ALFLF	challenges in efficiently drying alfalfa for animal feed, and a need to utilize manure and shredded wood from hedgerows	-1
		IE22-BBFB/CHAR IE23-SBDP/BGAS	The unutilised biomass is left to decay which returns carbon dioxide to the atmosphere while also control of vegetation, by her	
		DE24-GrassBiowert/BWERT	The intensification of Irish agriculture, particularly in dairying, has raised concerns about its environmental impact as it is a sign Displacement of fossil based products with bio-based alternatives, while offering rural diversification opportunities.	-1
		BE25-Grassification/GBSFY	Usplacement or rossil based products with bio-based alternatives, while orrering rural diversification opportunities. Valorization of roadside grass clippings and improving its digestion with other feedstock, as monodigestion of grass can be tec	
		FR26-Pyrogreen/PYROG	A bio-based technology that supports valorizing, recycling and recovering of resources by providing a versatile and easy to im	
		DE27-GO-GRASS/GOGRS	The grass from protected wetland areas in the polder meadows is heterogeneous, in parts strongly lignified (rigid) and its nutriti	
		NL28-GO-GRASS/GOGRS	Low quality natural and roadside grass are used for low added value applications such as compost which also includes costs	
		DK29-GO-GRASS/GOGRS	The conversion of annualcrops such as maize, rapeseed and cereals into grassland can significantly reduce nitrate leaching	-1
		PT30-Spawnfoam/SPAWN	changing the paradigm of production and consumption of fossil-based composites and materials, such as plastics, by providi	-1
		DE31-MixBioPells/PLTIZ	Since nowadays wood is getting more scarce caused by the growing demand in material and the energetic use, alternative so	
		DE32-MixBioPells/PLTHP	in Europe small-scale combustion units (20 to 200 kW) are used almost only with high quality wood fuels, and now adays wood	-1
		DE33-BIOlution/BIOLT	Agricultural waste such as tomato and wheat wastes are not used, which has an environmental impact and a management co	
		FR34-GRANUL'HAIE/WdPLT	To enhance the value of local raw materials to meet the increasing demand from consumers who are interested in buying local	
		ES35-Bioferti+/BFTZ+	Waste recovery of cattle manure and other organic waste, to increase the biological and physical-chemical quality of agricult	
		NL36-ManurePellet/MnPLT	a higher percentage of organic matter, a better soil structure and more binding of nutrients in the soil, a problem is formulated f	
		IT37-BIOECO_FLIES/W2BSF DK38-Macrofuels/CWEED	to valorize agrifood biomass beyond the typical low added value applications such as fertilizer or biomass for digesters	-1
		IT39-Res4Carbon/RES4C	There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bio to define the best practices to quarantee maximum technical, economic and environmental efficiency in the processing, hand	-
		noo nesqualbonimeoqu	to denne the best practices to guarantee maximum technical, economic and environmental efficiency in the processing, hand	



IT37-BIOECO_FLIES/W2BSF	to valorize agrifood biomass beyond the typical low added value applicaitons such as fertilizer or biomass for digesters	-1
DK38-Macrofuels/CWEED	There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bio-based f	-1
IT39-Res4Carbon/RES4C	to define the best practices to guarantee maximum technical, economic and environmental efficiency in the processing, handling ar	1
FR40-SIVABA/WdPwr	The need to better articulate the various links in the wood energy sector in order to increase its visibility vis-à-vis potential consume	1
BE41-BierbeekCHIP/Wd2CN	to valorise the woody material coming from the municipal hollow roads and the wood edges after shredding on the local fields of Bi	-1
LT42-cogeneration residue/Res2F	a need to develop a production technology for a new type of fertilizer using wood ashes and digestate	-1
IT43-CAREGA/4COAL	a gradual abandonment of the forests and a progressive decrease in commercial relations between forest owners, forestry compani	-1
IT44-COBRAF/COBRA	develop an articulated system of biorefineries that allows maximum exploitation of the biomass of oil crops (hemp, safflower, flax	-1
IT45-Stabilized Litter/StbMn	the impact of stabilized litter obtained from the solid/liquid separation of slurry subjected to a process of sanitation and stabilizatio	-1
IT46-BIOACTAM/BIOAA	to develop and validate a new generation of products, based on the partial pyrolysis of ligno-cellulosic biomass deriving from forest	-1
PT47-GOEfluentes /GoEFt	increase the efficiency of water and nutrient utilization, reduce the environmental impact of farming and add value to agricultural w	-1
ES48-INCREdible/RESIN	addressing challenges faced by resin as a non-wood forest product	-1
LV49-WoodResidueLV/W2IHF	developing innovative technological solutions to reclamation of wood processing by-products, further processing and adding value	-1
IT50-RBR-EAS/BCH4R	using different residual biomass with energy purposes (biofuel production), agricultural (production of fertilizer) and food (dietary	-1
AT-Closing cycles/NTREC	Farms need a reasonably closed nutrient cycle to recover energy and resources	-1
PL-BIOGAL/BIOGL	Livestock sector has several challengesbecause of the management of theresources and wastes produced. Manure isone of the bigg	1
ES-LIFE Smart Fertirrigation/FRTGN	pig meat production generates large amounts of manure leading to important environmental problems and many anaerobic digestic	1
BE-DIGESMART /DIGST	Biogas production is efficient at reducing agricultural emission by converting the biomass into electricity and thermal energy (cogen	1
NL-VORTEX/VORTX	Manure stripping innovation for efficiency and cost	-1
NL-Manure Evaporation/EVAPR	Different manure processing techniques are already available and the thick fraction can be well tolerated. However, the reduction c	-1
DE-Manure Efficiency/MNURE	to develop a procedure for liquid slurry processing for agricultural enterprises, with which slurry and manure can be used to produce	-1
SE-Manure Refining/MNRRF	to produce concentrated, transport-efficient fertilizers from biogas plant that produces large amounts of digested manure, as well a	-1
BE-HIATUS/WATER	Almost every year, farmers face water shortages due to drought. Therefore, they are looking for alternatives for this valuable water,	-1
ES-GO IMECO/PgSLR	slurry management and treatment system for ensuring the product generated in pig farms is more competitive and has a lower envi	1
FI-LEX4BIO/BBFRT	reducing dependency on mineral and fossil-based fertilizers by optimizing the use of bio-based fertilizers (BBFs)	-1
IT-ProBEST/BARK	In the production of forest wood fuels, the presence of bark and twigs must be limited. these can be chipped and delivered, essenti	-1
IT-ProBEST/ASHES	In the production of forest wood fuels, the incombustible elements (ash) must be limited. these can be delivered, essentially at co	-1
IT-FiLeProPri/WSC	Face the problem of the socio-economic marginality of wood production in private property.	-1
IT-ROSAEXTREM/NRH	Encourage the restructuring of farms with structural problems considerable	-1
IT-M.ER.LI.n/MERL	Analyze needs of partner companies to identify implementation opportunities innovative solutions that are energetically sustainab	-1
IT-INNOVABIOZOO/INZOO	The project consists of a series of actions divided into the following areas work: preparatory phase, coordination and animation, adc	-1
ES-AgriCarbón/AC	In Andalusia, agricultural activities play an important role in the socio-economic development which generates contamination in su	-1
ES-AGUACAVALUE/BYPRO	Promotes possible alternatives for the valorisation of avocado by-products by studying the characterisation of their nutritional profi	-1
ES-AGUACAVALUE/AVOCA	Spain concentrates the 93% of the avocado production in Europe. Malaga and Granada (Andalusian provinces) have the 88% of the tc	-1
ES-CHERRY4FOOD/CHERR	There is a need for the processing industries of tomato products (gazpacho and salmorejo) to utilise the by-products generated in th	-1
ES-TOMATOGROUP/TOMAT	There is a need for valorisation of the tomato chopping which currently is a residue with no value.	-1
FS-RIOSIIFRO/WHEY	In Andalusia, it is produced a large quantity of milk when every year. From 101 of milk, it is obtained 1 kg of cheese and 91 of when	-1

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ES-AGUACAVALUE/AVOCA	Spain concentrates the 93% of the avocado production in Europe. Malaga and Granada (Andalusian provinces) have the 88% of the tc	-1
ES-CHERRY4FOOD/CHERR	There is a need for the processing industries of tomato products (gazpacho and salmorejo) to utilise the by-products generated in th	-1
ES-TOMATOGROUP/TOMAT	There is a need for valorisation of the tomato chopping which currently is a residue with no value.	-1
ES-BIOSUERO/WHEY	In Andalusia, it is produced a large quantity of milk whey every year. From 10 L of milk, it is obtained 1 kg of cheese and 9 L of whey.	-1
ES-Biochar/BIOCH	The project is mainly focused on the Western Coast of Huelva (Ayamonte, Isla Cristina, Lepe, Cartaya, Gibraleón, Punta Umbría and A	-1
ES-BIORUMIOLI/FEED	Need to increase the profitability of livestock farms and create an alternative for the olive oil industry by achieving a more efficient	-1
ES-OleoValoriza/OLIVE	The olive-mill waterwaste constitute one of the most important environmental problems in olvie cooperatives, since they are chara	-1
ES-OleoValoriza/OLIV2	The reuse and recovery of olive by-products are essential to reduce environmental pollution and contribute to increasing the efficie	-1
CZ-TJ02000130/	Among the difficult tasks are the application of fugate (a by-product of biogas production) and the dependence on peat (a non-rene	-1
CZ-QK1920328/	The progressive large-scale decay of spruce stands affecting many areas in the Czech Republic can hardly be prevented and we have	-1
CZ-QK1920214/	The issue of protecting water resources while maintaining the competitiveness of agricultural production in their vicinity is quite co	-1
CZ-TH03030319/	Efficient use of processed field by-products.	-1
CZ-QK1710379/	Use of sewage sludge as a valuable waste raw material in agriculture.	-1
CZ-TH02030681/	The establishment of field crops (maize) is currently carried out in the form of monoculture. This causes surface runoff of rainwater	-1
CZ-TH02030925/	Increasing the composting rate, especially when processing bulky materials (urban green waste, sludge), which are increasingly proc	1
CZ-SS06020282/	Conventional mechanical recycling of biopolymers is currently not a technologically feasible process, as their products often end up	-1
CZ-TK04010166/	There is a need to update biomass potential in the light of changing factors affecting land use and biomass yields, including updating	-1
CZ-FW06010358/	Reduction of the consumption of liquid substances (including liquid fertilisers) per unit area, in particular better use of these substa	-1
EL11-HIPO-ENERGY/NUTRI	- management of Hippophae leaves, which are cultivated only for the harvesting of the fruit- existing studies highlight the nutrition	-1
EL12-AEIΦΟΡΙΚΑ ΚΗΠΕΥΤΙΚΑ/OREG	control of downy mildew (caused by soil fungi with negative effects in the production) in the context of the circular economy and th	-1
EL13-OLIHERB/OLIVE	management of the significant quantities of olive leaves produced as by-products during cultivation (pruning), harvesting of olives a	-1
EL14-BioAnimalChar/PIG	cost and quality of pig feed	1
EL15-COMPOST-INNO/COMPO	- lack of sufficient amounts of organic waste in the cultivation sites - distance of the sources of organic matter from the places of pro	1
EL16-Compo - Laventer/COLAV	increase of the production and the quality of lavender oil	-1
EL17-AGROSCHOOLBUS.BIO/RESOL	Sustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees).	-1
EL18-SoilCircle/	Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply so	-1
EL19-YΓΕΙΑΡΤΟΣ/YOGO	Exploitation of both goat milk and espresso coffee residues	-1
EL20-Innovative Rice Residue Managemer	nt Practic Handling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic r	-1
EL21-ΕΛΑΙΩΝΑΣ/OLFER	Management of waste and wastewater generated during the olive farming and olive oil production processes	-1
PL91-OrzechDębu/ACORN	Changing trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The v	-1
PL93-GRIST/GRIST	Organic grain production and processing of brewery residues into meal, using an innovative dehydration method	-1
pl94-Owoce 4.0/Owoce 4.0	Development of technology dedicated to currant plantations	-1
	0	



5.6 Spain

5.6.1 Information for the "Workshop Answers" sheet.

FAN Country:	Spain					
FAN Region:						
		04.1				
		Q1_t			02_t	
		ID 🔽 Q1. V	What are the primary or secondary resources available in your representative region?		ID Q2. What processing equipment is currently being used in your representative re	egion
		Fore	st pruning residues		Chopped	
		1			1	
		Sluri	n/		Crushed	
		Jiun	'Y		Clusica	
		2			2	
		Woo	bd		Separation	
		3			3	
		4 Oliv	e stone		4 Drying	
		Oliv	e pruning residues		Storage	
		5			5	
		Gree	nhouses plant debris		Fermentation	
		6			6	
		7			7	_
		8			8	
		9			9	
		10			10	
		11 12			11	
		12				
		14				



<u>Q3_t</u>		-	<u>Q4_t</u>
ID	 Q3. What secondary products/by-products are currently being generated in your representative region? 		Q4. What are your representative region's processing needs regarding primary and secondary resources? ID (identified needs should be ranked from high to low)
	Fuel 1		Absence of biorefineries or biomass management plants close to the production site for local biomass processing (compost, biogas, etc. both in agriculture and forestry sector). To produce valuable products that 1 make it more profitable.
	Compost 2		High cost of storage and transport of products with a high percentage of moisture
	Biogas		Bioproducts currently do not have enough added value to make the logistics cost profitable.
	3 4 Pellets		 Available technologies with a bad efficiency cost ratio, mainly still at pilot phase, not available in the market. 4 Large number of R&D projects but not all are scalable.
	5		Weeding, storage, clutching of forest increase the biomass cost.
	6		Logistics problems due to seasonal biomass generation. No guarantee of a stable prize of the bioproduct in the market (uncertainty that makes biomass valorisation not profitable) Lack of awareness about circular 6 bioeconomy concept to the agricultural and forest producer (biomass supplier) and the society as a whole.
	7		7
	8		8
	9		9
	10 11		10
	11 12		



Q5.1_		 	Q5.2_t	
	Q5. What is the size/total area of the farm or forest in your representative region?			Q5. What is the size/total area of the farm or forest in your representative region?
	Values provided by the FAN members: Range of farm size of the stakeholders which			Values provided by the FAN members: Range of forest size of the stakeholders which
ID	FAN members interact with (ha): e.g. 10 – 400 ha		ID 🔹	FAN members interact with (ha):
	1 10 00 500 00			1 50 00 500 00
	1 10.00 - 500.00			1 50.00 - 500.00
	2			2
				-
	3			3
	4			4
	5			5
				c .
	6			6
	7			7
				/
	8			8
	9			9
	10			0
		-	-	



Q5.3_t			Q5.4_t	
	Q5. What is the size/total area of the farm or forest in your representative region?			Q5. What is the size/total area of the farm or forest in your representative region?
	National statistics data:			National statistics data:
ID	▼ Average farm size (ha):	r	ID ·	Average forest size (ha):
	1 17.	7		1
	2			2
	3			3
	·			
	4			4
				-
	5			5
	5			5
	6			6
	U			0
	7			7
	8			0
	8 9			9
	10			9
	10	-	1	



Q5.5_t		Q5.6_t	
Q5. What is the size/total area of the farm or forest in your rep	presentative region?		Q5. What is the size/total area of the farm or forest in your representative region?
National statistics data: ID Region total farmed area (ha):	*		National statistics data:
ID Region total farmed area (ha):	¥	ID 🔻	Region total forest area (ha):
1	4,380,000.00	1	4,460,000.00
2		2	
3		3	
		5	
4		4	k
5		5	
6		6	
7		7	
8		8	
9		9	
10		10	



Q6.1 t			Q6.2 t	
don <u></u> t	Q6. How much would the farmers/foresters in your representative region be willing to invest in the short-term time (2 years) to implement a technology or practice that would help them process			Q6. How much would the farmers/foresters in your representative region be willing to invest in the long-term time (5 years) to implement a technology or practice that would help them process
ID .	their current resources into bio-products/by-products? Range €	•	ID	v their current resources into bio-products/by-products? Range €
	1 € 4,000.00)		1 € 10,000.0
	2			2
	3			3
	-			
	4			4
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	6			6
	7			7
	8			8
	8 9			8 9
1	0			10



Q7 t				
	Q7. What return on investment period (number of years) is acceptable for investment in a bio-based technology?			Q8.1_t
ID	 Please provide an average value of FAN and a range of values (years). 	-		ID v Q8. What key stakeholders are you currently interacting/collaborating with?
ſ				
		2		A A star bound and successful and successful
	1	2		1 Agricultural research centers.
	2	3		2 Universities
	3	4		3 Biotech companies
	4	5		4 Agricultural and forestry organizations, cooperatives, and associations
	-			
	5			5 Rural development groups
	6			6 Technological centres
	0	_		o reemological centres
	7			7 Pasture and forestry exploitations.
	·			
	8			8 Cooperatives
	9			9 Olive oil companies
	10			10 Agricultural associations
				11 CSIC



Q8.2	t		Q8.3 t	
ID	▼ Q8. Nature of collaboration: e.g. advisory		ID 🗖	Q8. Type of collaboration: open or closed to new members or partners.
ĺ				
	1 Applied research projects.			1 Open
	2 Joint or pilot research projects for the application of innovative technologies.			2 Open
	Collaboration in R&D programs providing raw materials in search for innovative 3 solutions for the valorisation, or production of biofuels, bioplastics.			3 Open
	Pilot projects, promotion actions, support for seeking opportunities, access to markets 4 for bioproducts.			4 Open
	5 Technical support for fund raising			5 Open
	6 Collaboration for the promotion of forestry technologies.			6 Open
	7 Direct contact with owners			7 Open
	8			8 Open
	9			9 Open
	10			0 Open
	11	·	1	1 Open



<u>Q9_t</u>			Q10_t		
ID	▼ Q9. Where do you go for information in your region? ▼		ID	Q10. What are the most significant environmental impacts in the region worrying your sector (forest/agriculture)?	
	Scientific and technical publications: JRC.			Land degradation and deforestation.	
	Platforms (https://observatoriobiomasa.es/, https://bioplat.org/, Red INtercamBIOM (https://intercambiom.org/practicas-innovadoras/), APPA Renovables- Biomasa (https://www.appa.es/appa- 2 biomasa/).			Lack of forest cleanup.	
	Public administration portals + Reports (MITECO, CAPADR, AAE (Andalusian Energy Agency). 3			CO ₂ emissions – climate change.	
	Technological and Agricultural Research Centers such as 4 IFAPA, ceiA3.			The burning of pruning waste, both agricultural and gardening, and the destruction of fruit in warehouses.	
	Agricultural and forestry organizations and associations: Spanish Association of Biomass Energy Valorization (AVEBIOM), CLANER (Renewable Energy Association of 5 Andalusia), AgroBioHeat.			Loss of biodiversity. 5	
	Research Institutions and Universities (UCO, US, ceiA3, CIEMAT (Centro de Investigaciones Energéticas, 6 Medioambientales y Tecnológicas).			Water and soil contamination (use of fertilizers and pesticides).	
	Collaboration networks / projects (BIC, ROBIN, SCALE-UP, 7 BIOTRANSFORM, BIOREFINERY MAP).			7 Consumption of water resources.	
	Contacts with experts and technology suppliers through 8 attendance at events in this field.			8 Rapid depletion of natural resources.	
	9 Consultants and industry professionals.			9 Increase risk of fires if forestry biomass is not managed.	
	10 Internet.		1	10	
	11 Competitor companies.				
	12 Sectorial bibliography				
	13				



Q11_t			Q12_t	
ID	Q11. What ideas do you have for involving women, the unemployed, and the youth in this area? Create a strategy that makes examples visible, promotes cooperation and improves entry conditions in		ID	Thinking about the current resources and needs identified, what improvements could be implemented to make the process more circula Promote new business models to manage biomass resources on-site t
	the sector.			make profitable and cost effective the biomass management.
	Offer courses related to forestry training, especially practical ones.			Raffia separation equipment to make greenhouses vegetables biomas usable. 2
	Educational campaigns from an early age in schools.			Increase information to the producer about the available technologies and processes, and communicate opportunities offered by the bioeconomy. Increase social awareness for sustainability. Encourage funding for scaling up pilot technologies that is not yet available at 3 market level
	Skills development programs for university students.			4
	Specific training sessions aimed at specific segments of the population.			5
	Outreach campaigns and initiatives to promote interest in issues related to biomass valorisation.			6
	Support with public/private funding for the creation of startups, spinoffs, business incubators, etc.			7
	$_{\rm 8}$ Establish online platforms and digital tools so that this sector of the population can get involved.			8
	9 Labour internships in agricultural exploitations and agri-food industries.			9
	10 Investing in reuse plants to generate new job positions.			10
	11			



Q13_t		
ID 🔽	Do you know of a more circular approach/technology that will help your RR work in a more circular way?	
	Generate circular bioeconomy microclimates with biomass management plants in forestry areas to incentivise employment and biomass valorisation.	
	2 Technology to reduce the size and density of the biomass transport in forest sector.	
	3	
4	4	
	5	
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10	0	

5.6.2 Information for the "TranslateTables" sheet.

SECTION 1 - TR	ANSLATION OF VALUES FROM DRC	TL2 t	NETS INVENTORY	71.3 t	
Q1 Answers	Reference sector	Q1 Answers	Key Word	Q1 Answers	Categories
Forest pruning residues	A2.1Silviculture and other forestry activities	Forest pruning residues	Forestry	Forest pruning residues	Crop residues and perennial plants F1
Slurry	A1.4Animal production	Slurry	Animal husbandry	Slurry	Waste or recycled material FC
Wood	A2.1Silviculture and other forestry activities	Wood	Forestry	Wood	Crop residues and perennial plants F1
Olive stone	A1.6Support activities to agriculture and post-harvest crop activities	Olive stone	Circular economy, incl. waste, by-products and residues	Olive stone	Waste or recycled material FC
Olive pruning residues	A1.2Growing of perennial crops	Olive pruning residues	Outdoor horticulture and woody crops (incl. viticulture, olives,	fruit, ornamentals) Olive pruning residues	Crop residues and perennial plants F1
Greenhouses plant debris	A1.1Growing of non-perennial crops	Greenhouses plant debris	Greenhouse crops	Greenhouses plant debris	Crop residues and perennial plants F1
					_
					_
			_		_
					-



T1.4_t		T1.5_t	
Q1 Answers	Feedstock	Q1 Answers	Value chains
Forest pruning residues	Biomass residues	Forest pruning residues	3 - High potential - Significant arisings of feedstocks available currently.
Slurry	Wastes	 Slurry	2 - Medium potential - Significant availability of feedstocks available by 2035.
Wood	Biomass	Wood	3 - High potential - Significant arisings of feedstocks available currently.
Olive stone	Wastes	Olive stone	1- Low potential - Low to medium arisings of feedstock available between 2023-2035
Olive pruning residues	Biomass residues	Olive pruning residues	2 - Medium potential - Significant availability of feedstocks available by 2035.
Greenhouses plant debris	Biomass	Greenhouses plant debris	2 - Medium potential - Significant availability of feedstocks available by 2035.



T8.1_t	T8.2_t	T8.3_t		
Q8.1 Answers: key stakeholders	Nature of collaboration	Type of collaboration	Type of partners	
Agricultural research centers.	Applied research projects.	Open	Researcher	
	Joint or pilot research			
	projects for the application of			
Universities	innovative technologies.	Open	Researcher	
	Collaboration in R&D			
	programs providing raw			
	materials in search for			
	innovative solutions for the valorisation, or production of			
Biotech companies	biofuels, bioplastics.	Open	Other	
biotech companies	Pilot projects, promotion	Open	Other	
Agricultural and forestry	actions, support for seeking			
organizations, cooperatives,	opportunities, access to			
and associations	markets for bioproducts.	Open	Advisor	
	· ·			
	Technical support for fund			
Rural development groups	raising	Open	Other	
	Collaboration for the			
	promotion of forestry			
Technological centres	technologies.	Open	Researcher	
Desture and forestry				
Pasture and forestry exploitations.	Direct contact with owners	Open	Forester	
exploitations.	Direct contact with owners	open	Torester	
Cooperatives		Open	Advisor	
Olive oil companies		Open	Processor or retailer	
onve on companies		Open		
Agricultural associations		Open	Farmer	
CSIC		Open	Researcher	
				<u> </u>
· · · · · · · · · · · · · · · · · · ·				



	In these cells, we are interpreting the drop-down		In these cells, we are interpreting the drop-down
	options are low, medium, or high potential of		options are low, medium, or high potential of
	carbon sequestration as low, medium, or high		environmental benefits as low, medium, or high
	potential of carbon emissions. The wording of		potential of environmental impacts. The wording
	the drop-down cells does not reflect this because		of the drop-down cells does not reflect this
T10.1_t	of how the tool works.	T10.2_t	because of how the tool works.
Q10 Answers	C Sink	Q10 Answers	Envi Sustainability
Land degradation and deforestation.	3 - High potential - strong potential for carbon sequestration at the feedstock and product level).	Land degradation and deforestation.	3 - High potential - Expected to bring at least 3 significant environmental benefits.
	2 - Medium potential - strong potential for carbon		2 - Medium potential - Expected to bring 2 or 1
Lack of forest cleanup.	sequestration at the feedstock or product level only.	Lack of forest cleanup.	environmental benefits.
	3 - High potential - strong potential for carbon		3 - High potential - Expected to bring at least 3
CO2 emissions – climate change.	sequestration at the feedstock and product level).	CO2 emissions – climate change.	significant environmental benefits.
0		, in the second s	Ŭ
The burning of pruning waste, both agricultural and		The burning of pruning waste, both agricultural and	
gardening, and the destruction of fruit in	3 - High potential - strong potential for carbon	gardening, and the destruction of fruit in	3 - High potential - Expected to bring at least 3
warehouses.	sequestration at the feedstock and product level).	warehouses.	significant environmental benefits.
	· · · · · · · · · · · · · · · · · · ·		
	2 - Medium potential - strong potential for carbon		2 - Medium potential - Expected to bring 2 or 1
Loss of biodiversity.	sequestration at the feedstock or product level only.	Loss of biodiversity.	environmental benefits.
· ·	· · · · ·		
Water and soil contamination (use of fertilizers and	2 - Medium potential - strong potential for carbon	Water and soil contamination (use of fertilizers and	2 - Medium potential - Expected to bring 2 or 1
pesticides).	sequestration at the feedstock or product level only.	pesticides).	environmental benefits.
	3 - High potential - strong potential for carbon		3 - High potential - Expected to bring at least 3
Consumption of water resources.	sequestration at the feedstock and product level).	Consumption of water resources.	significant environmental benefits.
	2 - Medium potential - strong potential for carbon		3 - High potential - Expected to bring at least 3
Rapid depletion of natural resources.	sequestration at the feedstock or product level only.	Rapid depletion of natural resources.	significant environmental benefits.
Increase risk of fires if forestry biomass is not	2 - Medium potential - strong potential for carbon	Increase risk of fires if forestry biomass is not	2 - Medium potential - Expected to bring 2 or 1
managed.	sequestration at the feedstock or product level only.	managed.	environmental benefits.



Q11 Answers	Socio Sustainability	
Create a strategy that makes examples visible, promotes cooperation and improves entry conditions in the sector.	3 - High potential - Expected to bring at least 3 significant social benefits.	
Offer courses related to forestry training, especial practical ones.	ly 1 - Low potential - doesn't bring any social benefits.	
gns from an early age in school	s. 1 - Low potential - doesn't bring any social benefits.	
Skills development programs for university students.	1 - Low potential - doesn't bring any social benefits.	
Specific training sessions aimed at specific segments of the population.	1 - Low potential - doesn't bring any social benefits.	
Outreach campaigns and initiatives to promote interest in issues related to biomass valorisation. Support with public/private funding for the	2 - Medium potential -Expected to bring 2 or 1 social benefits.	
creation of startups, spinoffs, business incubators, etc.	2 - Medium potential -Expected to bring 2 or 1 social benefits.	
Establish online platforms and digital tools so that this sector of the population can get involved.	1 - Low potential - doesn't bring any social benefits.	
Labour internships in agricultural exploitations an agri-food industries. Investing in reuse plants to generate new job	 2 - Medium potential -Expected to bring 2 or 1 social benefits. 2 - Medium potential -Expected to bring 2 or 1 social 	
positions.	benefits.	



SECTION 2 - ADDING E	XTRA INFORMATIO	N TO TRA	NSI ATE V	ALLIES FROM WORK		VNSERS					
SECTION 2 - ADDING L			SEALE V			INSENS					
75.3 t	, colum AO, in the Inventory copy sheet is	in T/Day, If that is no					T5.4 t	itu" salum AO in I	the Inventory convehent is in T/	Day. If that is not the case, please conv	
Q5.3 Answers. National statistics data, Average fa				Source of information						t Estimated Avg. tonnes of biomass per fo	
	Forest pruning residues	Aug. <u>rearry</u> ficia or bi	0					Forest pruning resid		-	Juisource o
	Slurry	5,540,282	8 575 62	Consejería de Agricultura, Pesca, Agua y Desarroll	n Rural, Junta de And	alucía. "Carcterización del Se		Slurry	005		-
	Wood	-)	-				-	Wood		-	
	Olive stone	408.074	631.64	Consejería de Agricultura, Pesca, Agua y Desarroll	o Rural, Junta de And	alucía. "Carcterización del Se	-	Olive stone			
-	Olive pruning residues	2,615,650		Consejería de Agricultura, Pesca, Agua y Desarroll			-	Olive pruning residu	Jes		
-	Greenhouses plant debris	1,434,883		Consejería de Agricultura, Pesca, Agua y Desarroll				Greenhouses plant d	lebris	-	
			-				-			-	
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SECTION 3 - TRANSLATION OF VALUES FROM NARRATIVE SYNTHESIS FIELDS IN THE BBIONETS INVENTORY

Q2 Answers	Key word to find in "Description BBT"		Q2 Answers	Key word to find in "Intended user / conditions of access	Q3 Answers	Key word to find in "Outcomes and final produc
		-				
Chopped	Chipping;pellet;fertilizer;chips		Chopped	industrial;forester;farmer;SME;processing;industries;pro		energy; power; combustible
Crushed	Dryer;pelletizing;fertilizer;chips		Crushed	industrial;forester;farmer;SME;processing;industries;pro		fertilizer; nutritional
Separation	Maceration; fibers; pyrolysis; separator; evaporat	ion;olivepulp	Separation	industrial;forester;farmer;SME;processing;industries;pro		energy; power; combustible; biogas
Drying	Dryer;heat;molding;packaging;temperature		Drying	industrial;forester;SME;processing;industries	Pellets	combustible; energy; heat
Storage	Residues;grain		Storage	forester;SME;farmer;landowner;producer		
Fermentation	Fertilizer;anaerobic;compost;biofertilizer;comp	osting;descomposition	Fermentation	SME;biogas;industrial		



5.6.3 Information for the "Weight" sheet



Workshop answers regarding processing needs (as visual reference only) W4_t processing needs regarding primary and secondary resources? ID (identified needs should be ranked from high			Inventory answers to BBTs needs/problems statement	Manually add weig BBTs after reading workshop anwse
W4 t				
	processing needs regarding primary and			
	secondary resources?			
ID	(identified needs should be ranked from high	BBT CODES	BBT NEEDS/PROBLEM STATEMENT	Weight
	Absence of biorefineries or biomass		To improve the sustainability, value and resource efficiency of Ireland's livestock sector through farmer diversification into the	
	management plants close to the production		bioeconomy and to assess the potential role of grass biorefinery in supporting sustainable and resilient communities in rural	
1	L site for local biomass processing (compost,	IE10-Biorefinery Glas/GLAS	Ireland.	
2	2 High cost of storage and transport of products	IT11-FABER/FABER	Forest biomass and its management to address climate change and GHG emissions.	
	Bioproducts currently do not have enough		Preventing climate change, increasing bioenergy in rural areas, decreasing CO2 emissions from farms and the food chain,	
	3 added value to make the logistics cost	FI12-ForestChip4Farm/FC4FH	promoting a sustainable food chain, and developing new innovations and products.	
	Available technologies with a bad efficiency			
	a cost ratio, mainly still at pilot phase, not	DE13-Lignocellulosic Biorefinery/LIGNO	To valorize the lignocellulosic residues (meadow grass) from farms in a sustainable way.	
	5 Weeding, storage, clutching of forest increase Logistics problems due to seasonal biomass generation. No guarantee of a stable prize of 5 the bioproduct in the market (uncertainty that	EL14-BIO2CHP/B2CHP	bypasses technical limitations & allows the use of residual biomass for small-scale & on-site energy production There is a need for sustainable and efficient methods in the hemp supply chain to increase quality, valorize and reduce energy consumption.	
7	7 0	HU16-REFERTIL/3RZRO	Recycling and valorization of un-exploited farm and animal by-products	
8	3 0	IT17-Mountain Carbon/MNTNC	to help improve the management of the organic matter (OM) from dairy cattle manure in the mountain areas	
_			a cost-effective and efficient way to produce bio-coal from late harvested hay pellets to benefit small and medium-sized	
9	9 0	EE18-Hay Biosyngas/HAYBG	entrepreneurs	
			to produce and use the gasification gas to boost methane formation in the biogas process, and simultaneously produce biochar,	
10	0 0	FI19-Wood2Biogas/Wd2BG	and the use of woody materials in biogas energy production without increasing the amount of digestate from the biogas process	
11	L 0	IT20-Clean-ER/CLINR	The accumulation of low economic value woody/shrub biomass in mountain areas poses a significant threat as it increases the risk o	of
		FR21-SeCoPPA /ALFLF	challenges in efficiently drying alfalfa for animal feed, and a need to utilize manure and shredded wood from hedgerows	
		IE22-BBFB/CHAR	The unutilised biomass is left to decay which returns carbon dioxide to the atmosphere while also control of vegetation, by herbicid	di i
		IE23-SBDP/BGAS	The intensification of Irish agriculture, particularly in dairying, has raised concerns about its environmental impact as it is a significar	n
		DE24-GrassBiowert/BWERT	Displacement of fossil based products with bio-based alternatives, while offering rural diversification opportunities.	
		BE25-Grassification/GRSFY	Valorization of roadside grass dippings and improving its digestion with other feedstock, as monodigestion of grass can be technical	I
		FR26-Pyrogreen/PYROG	A bio-based technology that supports valorizing, recycling and recovering of resources by providing a versatile and easy to impleme	
		DE27-GO-GRASS/GOGRS	The grass from protected wetland areas in the polder meadows is heterogeneous, in parts strongly lignified (rigid) and its nutrition	
		NL28-GO-GRASS/GOGRS	Low quality natural and roadside grass are used for low added value applications such as compost which also includes costs associat	ie



DK29-GO-GRASS/GOGRS	The conversion of annualcrops such as maize, rapeseed and cereals into grassland can significantly reduce nitrate leaching under EU	-1
PT30-Spawnfoam/SPAWN	the conversion or animatory source an many representation of passing and the agrimmative reduce instruction by the providing an in changing the paradigm of production and consumption of fossil-based composites and materials, such as plastics, by providing an inr	-1
DE31-MixBioPells/PLTIZ	Since nowadays wood is getting more scarce caused by the growing demand in material and the energetic use, alternative solid biofi	-1
DE32-MixBioPells/PLTHP	in Europe small-scale combustion units (20 to 200 kW) are used almost only with high quality wood fuels, and nowadays wood is gett	-1
DE33-BIOlution/BIOLT	In Europe sinal-scale controls that must 20 to 20 will are set a misst only with man quarky woot reads, and neways woot signt Agricultural waste such as tomato and wheat wastes are not used, which has an environmental impact and a management cost for th	-1
FR34-GRANUL'HAIE/WdPLT	Agricultural wasce sature of local raw materials to meet the increasing demand from consumers who are interested in buying local prod	1
ES35-Bioferti+/BFTZ+	Waste recovery of cattle manure and other organic waste, to increase the biological and physical-chemical quality of agricultural soil	-1
NL36-ManurePellet/MnPLT	wasce revery of cate manue and other organic wasce, to increase the organic and physical clemical quarty of agricultural soil a higher percentage of organic matter, a better soil structure and more binding of nutrients in the soil, a problem is formulated for a	-1
IT37-BIOECO FLIES/W2BSF	a ingret percentage of organic infactor, a becter son structure and infore bindings on nutrients in the son, a problem is forminated for a to valorize agrifood biomass beyond the typical low added value applications such as fertilizer or biomass for digesters	-1
DK38-Macrofuels/CWEED		-1
IT39-Res4Carbon/RES4C	There is an undisputed and urgent need to decarbonise the European transport sector and seaweed can be a sustainable bio-based f to define the best practices to guarantee maximum technical, economic and environmental efficiency in the processing, handling an	1
FR40-SIVABA/WdPwr		-1
-	The need to better articulate the various links in the wood energy sector in order to increase its visibility vis-à-vis potential consume	-1
BE41-BierbeekCHIP/Wd2CN	to valorise the woody material coming from the municipal hollow roads and the wood edges after shredding on the local fields of Bi	1
LT42-cogeneration residue/Res2F	a need to develop a production technology for a new type of fertilizer using wood ashes and digestate	-1
IT43-CAREGA/4COAL	a gradual abandonment of the forests and a progressive decrease in commercial relations between forest owners, forestry companie	1
IT44-COBRAF/COBRA	develop an articulated system of biorefineries that allows maximum exploitation of the biomass of oil crops (hemp, safflower, flax i	-1
IT45-Stabilized Litter/StbMn	the impact of stabilized litter obtained from the solid/liquid separation of slurry subjected to a process of sanitation and stabilization	-1
IT46-BIOACTAM/BIOAA	to develop and validate a new generation of products, based on the partial pyrolysis of ligno-cellulosic biomass deriving from forest	1
PT47-GOEfluentes /GoEFt	increase the efficiency of water and nutrient utilization, reduce the environmental impact of farming and add value to agricultural w	-1
ES48-INCREdible/RESIN	addressing challenges faced by resin as a non-wood forest product	1
LV49-WoodResidueLV/W2IHF	developing innovative technological solutions to reclamation of wood processing by-products, further processing and adding value t	1
IT50-RBR-EAS/BCH4R	using different residual biomass with energy purposes (biofuel production), agricultural (production of fertilizer) and food (dietary s	-1
AT-Closing cycles/NTREC	Farms need a reasonably closed nutrient cycle to recover energy and resources	-1
PL-BIOGAL/BIOGL	Livestock sector has several challengesbecause of the management of theresources and wastes produced. Manure isone of the bigge	-1
ES-LIFE Smart Fertirrigation/FRTGN	pig meat production generates large amounts of manure leading to important environmental problems and many anaerobic digestio	-1
BE-DIGESMART / DIGST	Biogas production is efficient at reducing agricultural emission by converting the biomass into electricity and thermal energy (cogen	1
NL-VORTEX/VORTX	Manure stripping innovation for efficiency and cost	-1
NL-Manure Evaporation/EVAPR	Different manure processing techniques are already available and the thick fraction can be well tolerated. However, the reduction o	-1
DE-Manure Efficiency/MNURE	to develop a procedure for liquid slurry processing for agricultural enterprises, with which slurry and manure can be used to produce	1
SE-Manure Refining/MNRRF	to produce concentrated, transport-efficient fertilizers from biogas plant that produces large amounts of digested manure, as well a	1
BE-HIATUS/WATER	Almost every year, farmers face water shortages due to drought. Therefore, they are looking for alternatives for this valuable water,	-1
ES-GO IMECO/PgSLR	slurry management and treatment system for ensuring the product generated in pig farms is more competitive and has a lower envir	-1
FI-LEX4BIO/BBFRT	reducing dependency on mineral and fossil-based fertilizers by optimizing the use of bio-based fertilizers (BBFs)	-1
IT-ProBEST/BARK	In the production of forest wood fuels, the presence of bark and twigs must be limited. these can be chipped and delivered, essenti	1
IT-ProBEST/ASHES	In the production of forest wood fuels, the incombustible elements (ash) must be limited. these can be delivered, essentially at cos	-1
IT-FiLeProPri/WSC	Face the problem of the socio-economic marginality of wood production in private property.	-1
IT-ROSAEXTREM/NRH	Encourage the restructuring of farms with structural problems considerable	-1
IT-M.ER.LI.n/MERL	Analyze needs of partner companies to identify implementation opportunities innovative solutions that are energetically sustainable	-1
IT-INNOVABIOZOO/INZOO	The project consists of a series of actions divided into the following areas work: preparatory phase, coordination and animation, ado	-1
ES-AgriCarbón/AC	In Andalusia, agricultural activities play an important role in the socio-economic development which generates contamination in sup	-1
ES-AGUACAVALUE/BYPRO	Promotes possible alternatives for the valorisation of avocado by-products by studying the characterisation of their nutritional profil	-1
ES-AGUACAVALUE/AVOCA	Spaint concentrates the 93% of the avocado production in Europe. Nalaga and Granada (Andalusian provinces) have the 88% of the to	-1
ES-CHERRY4FOOD/CHERR	There is a need for the processing industries of tomato products (gazpacho and salmorejo) to utilise the by-products generated in the	-1
ES-TOMATOGROUP/TOMAT	There is a need for valorisation of the tomato chopping which currently is a residue with no value.	-1
ES-BIOSUERO/WHEY		-1
•	In Andalusia, it is produced a large quantity of milk whey every year. From 10 L of milk, it is obtained 1kg of cheese and 9 L of whey.	
ES-Biochar/BIOCH	The project is mainly focused on the Western Coast of Huelva (Ayamonte, Isla Cristina, Lepe, Cartaya, Gibraleón, Punta Umbría and A	-1
ES-BIORUMIOLI/FEED	Need to increase the profitability of livestock farms and create an alternative for the olive oil industry by achieving a more efficient	-1
ES-OleoValoriza/OLIVE	The olive-mill waterwaste constitute one of the most important environmental problems in olvie cooperatives, since they are chara	-1
ES-OleoValoriza/OLIV2	The reuse and recovery of olive by-products are essential to reduce environmental pollution and contribute to increasing the efficiency of the second	-1
CZ-TJ02000130/	Among the difficult tasks are the application of fugate (a by-product of biogas production) and the dependence on peat (a non-renev	-1
CZ-QK1920328/	The progressive large-scale decay of spruce stands affecting many areas in the Czech Republic can hardly be prevented and we have	-1
CZ-QK1920214/	The issue of protecting water resources while maintaining the competitiveness of agricultural production in their vicinity is quite cor	-1
CZ-TH03030319/	Efficient use of processed field by-products.	-1
CZ-QK1710379/	Use of sewage sludge as a valuable waste raw material in agriculture.	-1
CZ-TH02030681/	The establishment of field crops (maize) is currently carried out in the form of monoculture. This causes surface runoff of rainwater a	-1
CZ-TH02030925/	Increasing the composting rate, especially when processing bulky materials (urban green waste, sludge), which are increasingly proc	-1
CZ-SS06020282/	Conventional mechanical recycling of biopolymers is currently not a technologically feasible process, as their products often end up	-1
CZ-TK04010166/	There is a need to update biomass potential in the light of changing factors affecting land use and biomass yields, including updating	-1
CZ-FW06010358/	Reduction of the consumption of liquid substances (including liquid fertilisers) per unit area, in particular better use of these substa	-1
EL11-HIPO-ENERGY/NUTRI	- management of Hippophae leaves, which are cultivated only for the harvesting of the fruit- existing studies highlight the nutritiona	-1

EL12-ΑΕΙΦΟΡΙΚΑ ΚΗΠΕΥΤΙΚΑ/OREG	control of downy mildew (caused by soil fungi with negative effects in the production) in the context of the circular economy and the	-1
EL13-OLIHERB/OLIVE	management of the significant quantities of olive leaves produced as by-products during cultivation (pruning), harvesting of olives a	-1
EL14-BioAnimalChar/PIG	cost and quality of pig feed	
EL15-COMPOST-INNO/COMPO	- lack of sufficient amounts of organic waste in the cultivation sites - distance of the sources of organic matter from the places of proc	-1
EL16-Compo - Laventer/COLAV	increase of the production and the quality of lavender oil	-1
EL17-AGROSCHOOLBUS.BIO/RESOL	Sustainable management of the residues (branches and leaves), pruning of the olive tree (and other productive trees).	-1
EL18-SoilCircle/	Due to the negative effects on crop growth and the environment from the use of synthetic fertilisers, it is recommended to apply so	-1
EL19-ΥΓΕΙΑΡΤΟΣ/YOGO	Exploitation of both goat milk and espresso coffee residues	-1
EL20-Innovative Rice Residue Management	Practic Handling plant residues remaining in the rice fields after harvesting. Their burning was banned because of the reduction in organic n	-1
EL21-ΕΛΑΙΩΝΑΣ/OLFER	Management of waste and wastewater generated during the olive farming and olive oil production processes	-1
PL91-OrzechDębu/ACORN	Changing trends in consumer attitudes and food preferences towards reducing the consumption of meat and animal products. The ve	-1
PL93-GRIST/GRIST	Organic grain production and processing of brewery residues into meal, using an innovative dehydration method	-1
pl94-Owoce 4.0/Owoce 4.0	Development of technology dedicated to currant plantations	-1
	0 0	





6 Conclusions and future works

The D2.2 "BBTs Assessment Tool - v1" represents a significant advancement in the evaluation and prioritization of Bio-Based Technologies for different regions. By integrating comprehensive data and providing a user-friendly interface, the tool enables stakeholders to make informed decisions based on regional needs and specific conditions. The methodology and data model ensure that the results are precise and relevant, fostering greater accuracy with detailed user inputs.

This initial version sets the foundation for future enhancements and wider adoption across various regions. The incorporation of feedback from ongoing and future workshops will further refine the tool, aligning it more closely with real-world applications and challenges. As more data is collected and incorporated, the BBTs Assessment Tool will evolve, offering increasingly robust and tailored recommendations.

Overall, the BBTs Assessment Tool is poised to become an essential resource for regional planners and decision-makers, facilitating the strategic implementation of bio-based technologies and promoting sustainable development. The guidelines provided ensure that partners can effectively utilize the tool, ensuring consistency and reliability in creating 'reference' scenarios. This deliverable marks an important milestone in the project's journey towards fostering innovation and sustainability through bio-based solutions.



References

- [1] "Difference Between Star and Snowflake Schema. <u>https://techdifferences.com/difference-between-star-and-snowflake-schema.html</u>." [Online]. Available: <u>https://techdifferences.com/difference-between-star-and-snowflake-schema.html</u>.
- [2] D. J. Cohen and M. R. Reynolds, "Interpreting the results of cost-effectiveness studies," *J Am Coll Cardiol*, vol. 52, no. 25, pp. 2119-26, Dec 16 2008, doi: 10.1016/j.jacc.2008.09.018.





Appendix I Guidelines for Reference Scenarios

Below there is a copy of the guidelines sent to partners to follow for the creation of the reference scenarios.





Document information

Title	BBioNets - Creation and promotion of Forest and Agriculture Networks to boost Bio-Based Technologies adoption and Value Chain devel- opment (GA No 101133904)
Start - end date	1/11/2023 – 31/10/2026 (36 months)
Project type	Coordination and Support Action
Programme	Horizon Europe – Cluster 6
Funding	1,998,636.20€
Coordinator	Munster Technological University Ms. Carmen Girón Domínguez (carmen.dominguez@mtu.ie)

Project overview BBioNets will constitute a thematic network that will rely on, promote, and further advance the work carried out by EIP AGRI Operational Groups (OGs) with respect to management and/or processing of agricultural and forest biomass with Bio-Based Technologies (BBTs). The project will set up 6 regional Forest and Agriculture Networks - FANs (IE, ES, IT, GR, PL, CZ) that will identify local needs, prioritise specific BBTs and share BBT knowledge ready for practice to farmers and foresters, boosting the (re)definition of value chains, stimulating cross-fertilisation beyond borders, and bringing Europe to the forefront of farming, forestry, and bioeconomy with economically viable and sustainable practices.











