WOOD2WOOD

A Wood-to-Wood Cascade Upcycling Valorisation Approach

» Deliverable 19.2

Exploitation and Business Innovation Plan and activities (version 1)

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TABLE OF CONTENTS

EXECUTIVE SUMMARY **6**

1. INTRODUCTION **7**

1.1. Project intro 7

1.2. Purpose of the deliverable 7

1.3. Intended Audience 7

1.4. Structure of the deliverable 8

2. METHODOLOGY **9**

2.1. Definition 9

2.2. Exploitation management 10

2.3. Exploitable results Identification and Assessment 12

2.4. Exploitable results management and tracking 13

2.5. Market analysis, sustainable business models 15

2.6. IPR management 15

2.6.1. Intellectual Property Obligations for Horizon Europe beneficiaries 16

2.6.2. Access to results 17

2.6.3. Ownership of results 18

2.6.4. Intellectual Property and Intellectual Property Rights 18

2.6.5. Commercialisation of IP 19

3. IMPLEMENTATION: PROCESS AND TOOLS **21**

3.1.1. Process 21

3.1.2. Tracker 22

3.1.3. Template 23

4. PROJECT EXPLOITABLE RESULTS **25**

4.1. List of exploitable results 25

4.2. IP Background 35

5. CONCLUSION **37**

Disclaimer of Warranties **38**

Bibliography **39**

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GLOSSARY OF ACRONYMS

Acronym	Extended Definition
W2W	Wood2Wood
ER	Exploitable Result
KER	Key Exploitable result
IP	Intellectual Property
IPR	Intellectual Property Rights

LIST OF TABLES

Table 1 Examples of weak and strong evidence used in ER assessment. 13
Table 2 Common Intellectual Property Rights 18
Table 4 W2W Exploitable results - IP Background 35

LIST OF FIGURES

Figure 1. Overall strategy for Exploitation management (source: R2M Solution) 11
Figure 2. Exploration Board 15
Figure 3 W2W - IP management strategy 17
Figure 3 Commercialisation of IP 19
Figure 4 Exploitation and Business innovation plan 21
Figure 5. Schematic figure of the collaborative Innovation Management process proposed. 22
Figure 6 An example of ER description template 23
Figure 7 An example of ER assessment template 24
Figure 8 Exploitable results and categories 37

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EXECUTIVE SUMMARY

The Wood2Wood (W2W) project is committed to developing a comprehensive, multi-faceted approach to valorizing wood from construction and demolition (C&D) and furniture waste, with a focus on creating a closed-loop economy where materials are continuously recycled and reused throughout their lifecycle.

The European Commission has established rules concerning ownership, protection, access rights, dissemination and exploitation of project results, which establish guiding principles for IP management in Horizon Europe. IP rules are mainly defined in the Grant Agreement (GA) and the Consortium Agreement (CA). The Grant Agreement contains "default rules" applicable to IP management, which will be further specified by project consortia in the CA, while the GA takes precedence

i. Obligation to protect
ii. Obligation to disseminate
iii. Obligation to exploit (European IP Helpdesk, 2022)

The deliverable "*D19.2 Exploitation and Business Innovation Plan and activities (version 1)*" is the preliminary version of the 4 part deliverable series aimed solely at project exploitation activities. The "*D19.1 Communication and Dissemination plan and activities (version 1)*" complements D19.2 and focuses on W2W Communication and Dissemination plan and activities. This deliverable D19.2 provides a comprehensive overview of the methodology and implementation plan for the exploitation management of the Wood2Wood (W2W) project.

i. A detailed outline of the obligations and requirements for exploitation and intellectual property (IP) protection of the project's Exploitable Results (ERs)
ii. A dictionary of key terminology used throughout the exploitation activities
iii. A description of the various actors involved in the exploitation process, including their roles and responsibilities
iv. A step-by-step walkthrough of the implementation roadmap, from ER identification to the development of the KER exploitation plan
v. Tools used to provide a structured and consistent approach to exploitation management

Furthermore, the preliminary list of ERs is provided along with basic information related each ER. As of Month 6 there are 24 ERs and each ER has been assigned an ER manager.

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1. INTRODUCTION

1.1. PROJECT INTRO

The Wood2wood (W2W) project is dedicated to creating a holistic framework for the multi-dimensional cascade valorisation of wood from construction and demolition (C&D) and furniture waste. The project goal is to minimize the demand for virgin materials, reduce waste sent to landfills or incineration, and support the transformation towards a circular economy. By doing so, the project aims to foster closed-loop systems where materials are continually recycled and reused throughout their lifecycle, reducing waste and promoting a more sustainable future. The 4 main pillars that enables W2W project to reach its aim of multi-dimensional cascade valorisation of wood waste from C&D and furniture are:

- Advanced Separation and Sorting Technologies;
- Upcycling Processes and Technologies;
- Digital Tools for Improving Circular Flows of Secondary Materials;
- Supportive Framework in Policy, Market, and Skills.

The W2W project will achieve a Technology Readiness Level (TRL) of 6 by project completion, paving the way for the commercialization and widespread adoption of its innovative solutions. The project will demonstrate its effectiveness on 3 use cases and create sustainable Value Chains of Secondary Materials.

These innovative solutions will transform the way wood waste is managed, reducing waste sent to landfills and incineration, and promoting a closed-loop economy where materials are continually recycled and reused.

1.2. PURPOSE OF THE DELIVERABLE

Exploitation refers to the strategic and effective utilization of project outcomes through various channels, including scientific, economic, political, and societal routes. The goal is to convert research and innovation actions into tangible value and societal benefits (European Innovation Council and SMEs Executive Agency, 2022).

The objective of this deliverable is to provide a comprehensive roadmap for the overall project exploitation management over the entire reporting period, ensuring that the project's outcomes are effectively utilized and contribute to the project's overall impact. The roadmap will outline the strategies, tactics, and milestones necessary to ensure the successful exploitation of project results, taking into account the project's unique characteristics, stakeholders. This will enable the project to maximize its potential for making a positive impact on society and achieving its intended goals.

1.3. INTENDED AUDIENCE

Even though the dissemination level of the document is “Public”, This document serves as a comprehensive guide for the consortium members and the European Commission, outlining the overall exploitation strategy and plan for the project. The goal is to provide a structured approach to leveraging the project's results, ensuring efficient and effective use of the project outcomes, and maximizing the impact on the project's objectives.

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1.4. STRUCTURE OF THE DELIVERABLE

The deliverable can be broadly classified into 3 sections in addition to introduction and conclusion which are explained in the following.

i. **Methodology** – This section provides a comprehensive summary of the logical scheme and approach underlying the development of the project exploitation process and intellectual property (IP) management of project results. This section aims to clarify the essential concepts and obligations associated with exploiting project results, as well as the methodology employed by R2M to manage the exploitation process. Additionally, it offers a detailed overview of the exploitation management process methodology used by R2M. By doing so, it aims to facilitate a better understanding of the project's exploitation objectives, timelines, and expected outcomes.

ii. **Implementation** – This section provides an overview of the processes and tools employed to facilitate the timely collection and management of the Project Exploitable Results (ER). The purpose of this section is to illustrate the methodology used to identify, track, and document the project's exploitable results, ensuring seamless data collection and management throughout the project's lifecycle.

iii. **Project exploitable results** - This section presents an updated list of Project Exploitable Results (ERs) with information collected and processed during the initial stages as of M06 of the project. The purpose of this section is to provide a snapshot of the project's ERs, including their status, categorization, and key details.

Disclaimer: The exploitation methodology proposed in this deliverable may include graphics, tables, and descriptive content similar to those found in other H2020 and Horizon Europe project reports where R2M is/has been involved.

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2. METHODOLOGY

2.1. DEFINITION

The central goal of Horizon Europe is to accelerate the transfer of ground-breaking research results into marketable innovations and services through targeted funding measures, thus making a decisive contribution to Europe's global competitiveness and economic strength.

Horizon Europe clearly distinguishes between results, outcomes, and impact.

i. **Results** are achievements made during or shortly after the implementation of the project.
ii. **Outcomes** are the effects of the project in the medium term, achieved through the uptake, diffusion, and use of the results.
iii. **Impacts** are the effects on society, the economy, and science in the long term, enabled by the outcomes of the project. The specific time periods in which results, outcomes, and impacts are expected depend on the specific project, but typically may be three, five and seven years from the project start, respectively (European IP Helpdesk, 2022).

As a base definition, Exploitable Results (ER) are:

ER definition: The achieved and/or expected results coming from the project that will have an impact on the economy, environment and/or society as a whole. These results have commercial or social significance and can be exploited as stand-alone products, processes, services, etc.

Exploitable results, in general, may require additional research, prototyping, engineering, and validation after the project's completion before they can be commercially exploited. These results can be categorized into several categories as per the Horizon Results Platform classification:

i. **Policy Related Result** - Result primarily useful and influential for policy makers or legislators (Ex. regulatory analysis, policy related study, foresight analysis, pre-standard, standard, publications of other forms, etc.).
ii. **Scientific or Technological R&D Result including ICT Hardware** – Any scientific or technological R&D related result at any stage of development. The results can be a scientific finding or approach, model or method, a proof of concept, a technological solution or component, a chemical, a new material, a new manufacturing process, a medicine, a therapy, an agri-food, an electric component, sensor, processor, computer hardware, etc. The result can be at any stage of development: from the basic, applied research to the prototype and commercial readiness.
iii. **ICT Software Digital solution** – Any software, algorithm, database, model, online platform, cloud, etc. at any stage of development.
iv. **Other Intangible Results** (Ex. citizens engagement platform, know-how, best practices, methodologies etc.).
v. **Services** (Ex. research infrastructures, educational sources, citizen helplines, etc.).
vi. **Other** - please specify in the Result Description.

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In a project, it's essential to recognize that not all outputs will have the same level of impact or potential for exploitation. By pinpointing the most impactful results, we can effectively prioritize resources and focus on accelerating their development. This is a crucial step in achieving the project's overall objectives and maximizing its impact.

The criteria used to measure and pinpoint these results are:

i. Innovation risk: Degree of innovation and exploitability
ii. Impact: Economic, scientific, environmental and/or societal impact

The aforementioned assessment will lead to the definition of W2W Key Exploitable results (KER).

KER definition:
Key Exploitable Results (KERs) are a crucial aspect of a project that determines the project's impact, effectiveness, and legacy. By focusing on achieving KERs, projects can demonstrate value, accomplish their objectives, and create a tangible outcome that can be built upon in the future.

Some key aspects of KER's are

i. **Measurable**: KERs must be quantifiable, allowing you to track progress and measure success.
ii. **Achievable**: KERs must be realistic and challenging, yet attainable with available resources.
iii. **Relevant**: KERs must align with the project's goals and objectives, ensuring that they are meaningful and impactful.

2.2. EXPLOITATION MANAGEMENT

In the context of European Research and Innovation projects, exploitation management refers to the strategic planning, implementation, and coordination of activities that enable the maximum use of project results after the project has been completed. The exploitation pathways of the results are two

i. **Scientific exploitation** - Scientific exploitation refers to the use of research results for further scientific research, development, or innovation. This can include publishing papers, presenting findings at conferences, or collaborating with other researchers to build upon the project results. The aim of scientific exploitation is to advance knowledge and contribute to the scientific community.
ii. **Commercial exploitation** - Commercial exploitation, on the other hand, focuses on the use of project results to create new products, services, or businesses that can generate revenue. This can involve licensing intellectual property, forming partnerships, or creating spin-off companies. The aim of commercial exploitation is to generate economic value and create societal benefits

The main goal is to ensure that the outcomes of the project continue to generate value and impact beyond the project lifecycle.

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The exploitation management process can be broken down into three distinct stages. Each stage involves a range of tasks that require specific tools and resources to be implemented successfully. Here is an overview of what occurs during each phase:

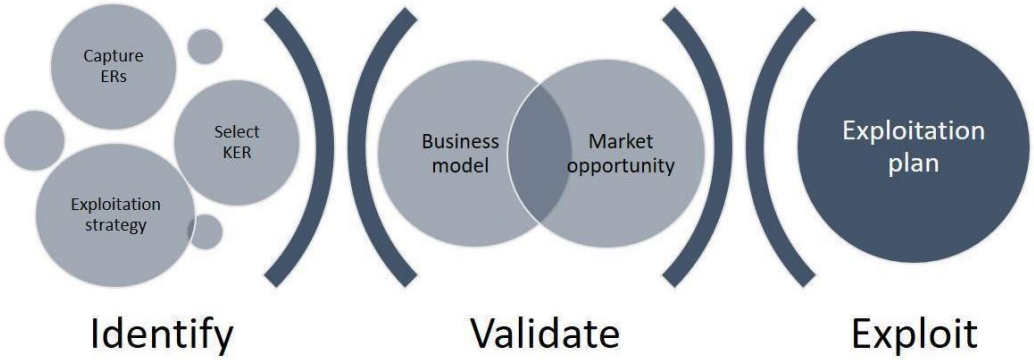

Figure 1. Overall strategy for Exploitation management (source: R2M Solution)

Identify - During the initial phase, exploitable results (ERs) are identified, collated, and assessed. An exploitation tracker (refer section 3.1.2) is set up in the WP19 shared folder to continuously monitor the status of each ER and maintain an ongoing record of its development. The grant agreement's initial list of project outcomes serves as a starting point for the ER tracker, with ER managers being assigned to each ER. Regular Work Package (WP) meetings will be facilitated for reviewing and updating the ER list. In later stages, questionnaires will be distributed to collect essential information related to ERs and to perform an impact assessment to pinpoint the project's most significant **Key Exploitable Results (KERs).**

Validate – During this stage, the value proposition of individual **KER** is thoroughly explored with the assistance of KER managers and other involved parties. The market analysis conducted for the three W2W use cases in "*T19.5 Market analysis, sustainable business models and go-to-market strategy*" (see section 2.5) serves as a foundation for comprehending the current market landscape and stakeholder requirements (including target customers, end-users, and additional stakeholders). By gaining a profound understanding of the market, the KER can be confidently addressed to fulfil a genuine need or solve an existing problem. The main objective is to establish a business model that is conveniently feasible (from an implementation standpoint), desirable (satisfying customer requirements), and viable (financially sustainable) for the KER owner(s). Utilizing tools like the Business Model Canvas and the Value Proposition Canvas, developed by Alexander Osterwalder and Yves Pigneur in 2008[1], will provide a visual and thorough representation of the business model and its underlying components.

Exploit – The objective of this phase is to comprehensively plan and execute the exploitation strategies for the identified Key Exploitable Results (KERs). After creating solid business models, this phase concentrates on securing the post-project exploitation of these results. Primary tasks involve: defining an exploitation strategy, creating a commercialization roadmap, and overseeing IPR management for the KERs under the guidance of KER managers. This period concludes with the initiation of the exploitation plan's execution.

[1] Y. P. Dr Alexander Osterwalder, Business Model Generation. Strategyzer AG.

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This three-phase strategy, encompassing identification, development, and exploitation of Key Exploitable Results (KERs), is a continuous process, providing ample opportunities for KER recognition throughout the project. Regular meetings with all project partners are scheduled to facilitate open dialogue and consistent review of the evolving KER list. This proactive approach guarantees a timely and effective identification and management of exploitable opportunities.

Exploitation and Intellectual Property Rights (IPR) Management Workshop
"An Exploitation and Intellectual Property Rights (IPR) Management Workshop was initiated on **M5** (May 9, 2024), providing the project partners with an introduction to the overall exploitation process. The initial focus was on the list of project outcomes laid out in the Grant Agreement. Participants were requested to assign an Exploitable Results (ER) manager for each ER and fill in the required ER information. Moreover, these Work Package (WP) meetings served as a forum for validating previously reported ERs and a platform to share any new ERs discovered within the 5-month project duration"
Additional workshops are planned during the course of the project.

2.3. EXPLOITABLE RESULTS IDENTIFICATION AND ASSESSMENT

Performing an ER assessment is crucial for prioritizing the ERs holding the greatest potential returns and the least innovation risk. This targeted approach enables to effectively allocate resources and exploitation efforts in an optimised way.

To effectively evaluate ERs, a pair of questionnaires are employed: one for impact assessment and another for risk evaluation. Both questionnaires consist of multiple indicators, structured according to the Key Impact Pathways requirements of the Horizon Europe programme[2]. Each indicator is segmented into three components:

i. **Indicator**: Indicators are essential variables for evaluating the potential impact and innovation risk of ERs. They represent specific aspects of the ER that are measurable and provide insights into the project's significance, performance, and expected outcomes. To ensure accurate assessment, a customized set of indicators must be defined for each project, considering the distinctive characteristics of its business domain and the innovative aspects of the ERs being developed.
ii. **Value**: The Value assigned to each indicator represents its importance or significance in the overall ER assessment. Measurable units and benchmarks are applied to each indicator to assign a quantifiable score, which can be compared and weighed against other indicators. The scoring scale for indicators can vary depending on their particular nature, but generally, they encompass a range between two extremes, such as small-large, weak-strong, or low-high. This enables a consistent and structured evaluation of the ER's potential impact and innovation risk.
iii. **Evidence**: To effectively assess the impact and innovation risk of an ER using indicators, it's crucial to provide robust evidence that substantiates each indicator's underlying hypothesis. The strength of this evidence significantly influences the reliability of the

[2]https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/shaping-eu-research-and-innovation-policy/evaluation-impact-assessment-and-monitoring/horizon-europe-programme-analysis_en

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indicator in supporting or contradicting the hypothesis, ultimately contributing to a more accurate and valuable overall ER assessment. Thus, it's essential to gather credible data, facts, and findings that indisputably demonstrate the value and significance of each indicator in relation to the specific ER.

The Table 1 below provides some examples of weak and strong evidence to be used in the ER assessment in ascending order:

Table 1 Examples of weak and strong evidence used in ER assessment.

Level	Description
0	No evidence (spreadsheet and PowerPoint only)
1	First light evidence (what people say, e.g. interview results)
2	Light evidence with real artefacts (what people say, e.g. showing storyboard, prototype etc)
3	Light call-to-action evidence (what people do, e.g. sign up with email)
4	Strong call-to-action evidence (what people do, e.g. pre-order or down-payment)
5	Irrefutable evidence from markets (what people do, e.g. pop-up shops)

For each Exploitable Result (ER), the appointed ER manager is tasked with completing the questionnaires, scoring the value and supplying substantiating evidence for each indicator. The results obtained from the assessment undergo review and clarification by the Innovation Manager (R2M). The Innovation Manager subsequently assigns a "low" or "high" score to the expected impact and innovation risk for each ER. The assessment findings are shared with the ER manager for approval and validation. The outcome of this evaluation, comprising the impact and innovation risk classifications, will then be documented on the **Exploration Board** (discussed in Section 2.4). By collaborating closely and maintaining clear communication between the ER managers and the Innovation Manager, the consistency and accuracy of the ER assessment process is reinforced

2.4. EXPLOITABLE RESULTS MANAGEMENT AND TRACKING

The Exploration Board (Figure 2) is a visual tool utilized to arrange and illustrate the ER assessment results for every Exploitable Result (ER) within the project. Inspired by Osterwalder's Portfolio Map, this composition consists of two axes: the first represents the projected impact, ranging from low to high, and the second represents the innovation risk, which also spans from low to high. Consequently, an Exploration Board consists of four distinct quadrants, allowing for a clear and organized view of the ERs' anticipated impact and risk profiles.

- Quadrant 1: Low Impact, Low Innovation Risk
- Quadrant 2: Low Impact, High Innovation Risk
- Quadrant 3: High Impact, Low Innovation Risk
- Quadrant 4: High Impact, High Innovation Risk.

These classified ERs can be further investigated and prioritized based on their position within the Exploration Board, potentially leading to valuable insights and strategic decisions for the project.

i. **Rising Star (high impact, low risk)**: ERs with significant impact (economic, societal, or otherwise) and low innovation risk are typically positioned. The presence of these high-

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impact, low-risk ERs often signals a clear market demand due to their demonstrable benefits and relevance to the intended audience. By targeting ERs in this quadrant, stakeholders can prioritize their resources and efforts on projects with a higher chance of achieving positive returns.

ii. **Safe Play (low impact, low risk)**: ERs with minimal innovation risk and restricted marketability or niche applications reside. Despite having a relatively smaller overall impact, these ERs can still retain value and significance within their respective markets or industries, offering opportunities for targeted applications or specialized customer bases. By focusing on these ERs with limited marketability but low innovation risk, stakeholders may identify specific niches in need of unique solutions, potentially fostering the growth and development of those markets.

iii. **Niche Opportunity (low impact, high risk)**: ERs with less commercial appeal due to their high innovation risk and smaller potential impact are typically located. Although these ERs may not attract immediate attention or investment due to the potential challenges associated with their high innovation risk, they can still provide beneficial knowledge inputs for future research and innovation projects. By investing time and resources in these less marketable but high-risk ERs, stakeholders can stimulate groundbreaking discoveries, lay the foundation for new markets, and build a competitive edge in emerging technologies.

iv. **Promising concept (high impact, high risk)**: ERs with significant potential for creating disruptive innovations and shaping industries are positioned. These ERs carry a high degree of innovation risk, entailing uncertainty and complex challenges, but they also harbour the potential for generating substantial value, creating new opportunities, and rendering groundbreaking advancements. Due to their high impact and risk profiles, these ERs are prime candidates for KER identification.

Exploration Board acts as a visual representation and oversight tool to monitor the progress of ERs throughout the project lifecycle. Based on the results from ER assessment, the ERs are placed in the designated quadrant. As the project progresses, actions and strategic decisions are made to elevate the ERs' impact, diminish their innovation risk, or accomplish both objectives. These efforts are aimed at transitioning the ERs towards the "Rising Star" quadrant, maximizing the overall project impact.

Once an ER reaches a successful exploitation milestone, it is transferred from the Exploration Board to the Exploitation Board for continued focus and further development. Conversely, if it is determined that an ER cannot be viably exploited, it is removed from the Exploration Board to free up resources for other high-potential ERs. The primary goal is to clear the Exploration Board by the end of the project, enabling all stakeholders to focus on the most promising and commercially relevant ERs.

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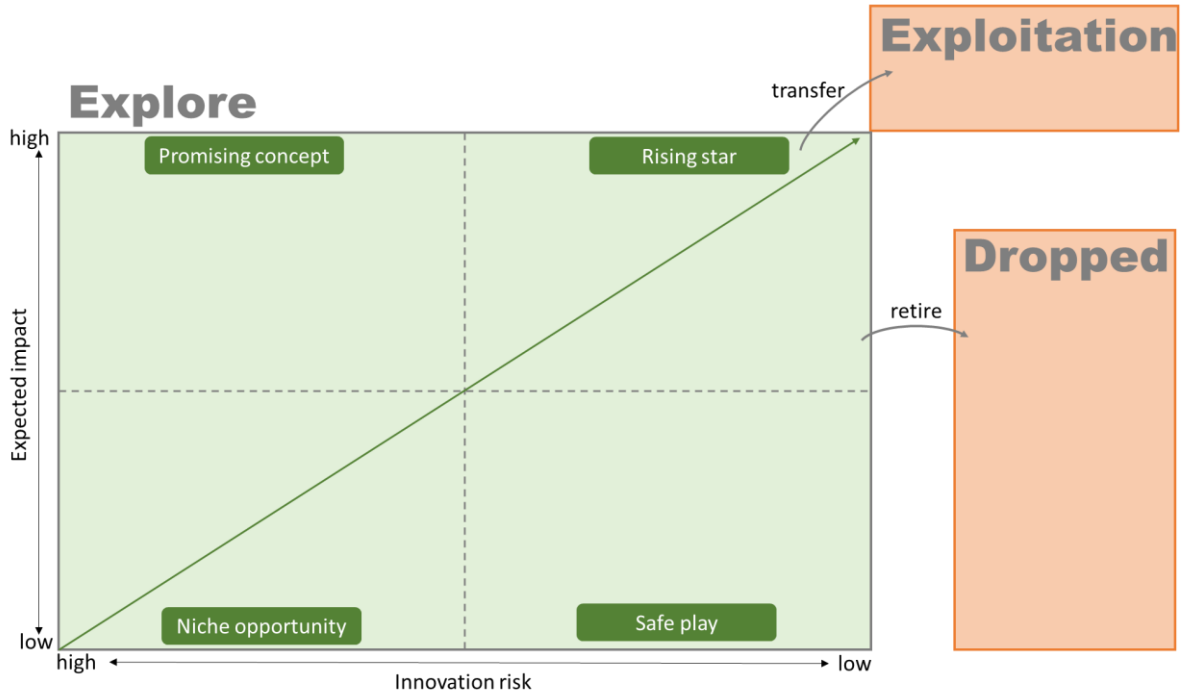

Figure 2. Exploration Board

2.5. MARKET ANALYSIS, SUSTAINABLE BUSINESS MODELS

The Task "*19.5 Market analysis, sustainable business models and go-to-market strategy*" led by QPLAN, aims to identify target markets for circular technologies, gather input from technical providers, design sustainable business models, and develop go-to-market strategies for reaching customers and establishing long-term collaborations. In this task QPLAN will define value chains, conduct market segmentation, identify the target audience, and provide an overview of the competitive landscape with the contribution of all the partners involved in our three use cases as well as a literature review.

2.6. IPR MANAGEMENT

Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. IP is protected in law by, for example, patents, copyright and trademarks, which enable people to earn recognition or financial benefit from what they invent or create. By striking the right balance between the interests of innovators and the wider public interest, the IP system aims to foster an environment in which creativity and innovation can flourish[3].

[3] https://www.wipo.int/about-ip/en/

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2.6.1. Intellectual Property Obligations for Horizon Europe beneficiaries

Protection of results (Article 16)
"Beneficiaries which have received funding under the grant must adequately protect their results
- for an appropriate period and with appropriate territorial coverage
- if protection is possible and justified, taking into account all relevant considerations,

including the prospects for commercial exploitation, the legitimate interests of the other beneficiaries and any other legitimate interests."

Intellectual Property (IP) considerations can vary significantly during the project lifecycle and needs to be addressed accordingly.

i. **At the beginning of the project**, it is important to establish agreements regarding the sharing of existing knowledge, including the terms and conditions for its utilization during the project and post-project completion.
ii. **During project implementation** new results are generated, they must be documented, assessed, and evaluated in terms of ownership, management, and protection. This process ensures that proper IP rights are applied to each result and that their dissemination and exploitation can begin.
iii. **Towards the end of the collaborative project**, as all anticipated ERs become available, designing future exploitation pathways assumes even greater importance. Each result could have been developed individually by partners or collaboratively, requiring careful planning and coordination to efficiently manage and maximize the benefits of these joint efforts (European IP Helpdesk, 2022).

Exploitation of results (Art 16)
Beneficiaries which have received funding under the grant must
- up to four years after the end of the action
- use their best efforts to exploit their results directly or to have them exploited
- indirectly by another entity, in particular through transfer or licensing

For a more successful exploitation of the results generated during the project, it is crucial to implement the appropriate intellectual property IP protection mechanisms. Once results are adequately protected, though not mandatory, the results owner may use different techniques to commercially exploit the results (see 2.6.5)

For the W2W project, responsibility for managing IPR will be overseen by the Innovation Board, which is led by R2M. R2M brings extensive expertise in IPR management and has access to specialized resources, including patent and legal experts. Moreover, many project partners are supported by their own legal teams. The Innovation Board, under R2M's leadership, will adhere to the European Commission's guidelines on data and IPR management. In their capacity as the IPR manager, R2M will counsel the project team on IPR-related matters, knowledge management, and innovation activities.

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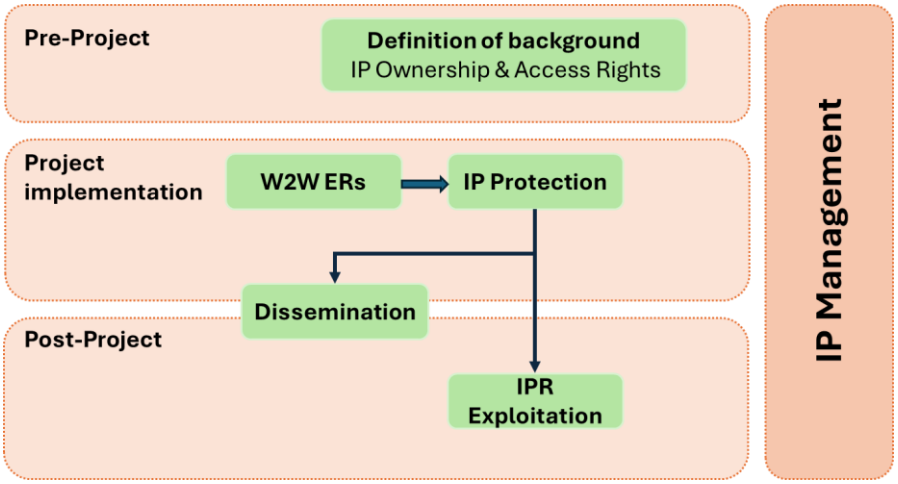

Figure 3 W2W - IP management strategy

2.6.2. Access to results

IP Background (Article 16)
'Background' means any data, know-how or information — whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights — that is:

- held by the beneficiaries before they acceded to the Agreement and
- needed to implement the action or exploit the results.

The background of Intellectual Properties could be significant for some ERs since they can be combined to generate other ERs and so on. Generally, the management of IPs is adequately addressed in the consortium agreement. Nevertheless, if the agreement does not provide enough coverage, relevant details can be included in the IP management section of the exploitation plan or added within the characterization of specific ERs where necessary.

Foreground refers to the results that are generated during a project, while IP rights are the legal protections accorded to these generated results

With regards to access to background (ARTICLE 16), The beneficiaries must grant each other access —on a royalty-free basis —to background needed to implement their own tasks under the action, unless the beneficiary that holds the background has —before acceding to the Agreement

- informed the other beneficiaries that access to its background is subject to restrictions, or
- agreed with the other beneficiaries that access would not be on a royalty-free basis.

With regard to access rights for exploiting the results (ARTICLE 16), The beneficiaries must grant each other access —on a royalty-free basis —to results needed for implementing their own tasks under the action.

The beneficiaries are required to grant each other access to results and background needed for exploiting their results. This access must be provided under fair and reasonable conditions. However, if a beneficiary has previously informed the other beneficiaries that access to its background is subject to restrictions, then that restriction would apply.

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Requests for access should typically be made up to one year after the end of the action, unless agreed otherwise in writing. This means that if the beneficiaries have not agreed to a different timeframe for requesting access, they should do so within one year of the end of the action

2.6.3. Ownership of results

According to the ARTICLE 16, "Results are owned by the beneficiaries that generate them"

Joint ownership applies when two or more beneficiaries jointly generate results and it is not possible to establish the contribution of each beneficiary or separate the results for protection. Joint owners must agree on the allocation and terms of exercise of their joint ownership in writing (joint ownership agreement).

Each joint owner is allowed to grant non-exclusive licenses to third parties to exploit the jointly-owned results, provided they give other joint owners at least 45 days advance notice and fair compensation. The joint owners may also agree to apply another regime than joint ownership in writing.

If third parties (like employees) might claim rights to the results, the beneficiary concerned must ensure those rights can be exercised in a manner compatible with their obligations under the agreement.

Joint ownership is governed by Grant Agreement Article 16.4 and its Annex 5, Section Ownership of results. The joint owners shall agree on all protection measures and the division of related cost in advance.

2.6.4. Intellectual Property and Intellectual Property Rights

Intellectual property rights (IPR) refer to the legal privileges bestowed upon creators or owners of intangible intellectual assets, safeguarding them from unauthorized usage by others. This legal framework grants the right holders exclusive authority to exploit their intellectual property through utilization, licensing, or sale for a defined duration.

The following Table 2 summaries most common IPR with brief description of what is protected, type of protection and duration (WIPO, 2020)

Table 2 Common Intellectual Property Rights

IPR	What is protected	Type of protection and requirements	Duration
Patents	Inventions and technologies, such as processes, machines, products or improvements.	Provide exclusive rights to the inventor for a limited period of time. Main requirement: novelty, inventive step, industrial applicability	Normally up to 20 years from the date of filing the patent application
Trademark	Graphically representable means of identification (logos, symbols,	Provide exclusive rights to use the trademark and prevent others from using a similar mark that may create	Indefinite (if mark continues to be distinctive and renewed)

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	names, slogans, etc)	confusion. Main requirement: Distinguishable, non-descriptive	
Copyright	Literary and artistic works Computer programs	Provides exclusive rights to reproduce, distribute, display, perform, and modify their work. Main requirement: originality	Normally the creator's lifetime + 70 years
Design	Form/appearance of a product (shape, configuration, patterns, etc)	Provide protection to safeguard the aesthetic features of a product, making it visually appealing or distinctive. Main requirement: Novelty and individual character	Up to 25 years
Trade Secret	Unique processes, formulas, patterns, devices, etc. that provide a competitive advantage to a company	Provide protection for confidential information in a form of a protocol for maintaining secrecy	As long as the secret is kept from becoming common knowledge

2.6.5. Commercialisation of IP

In the context of IP, commercialization refers to the process of transforming ideas, innovations, and brand identities into commercially viable products or services with the ultimate goal of generating revenue and driving business growth. This process involves bringing IP to the market with the intention of creating a profit and expanding the business

The Figure 4 represents potential pathways for the commercial exploitation of IP

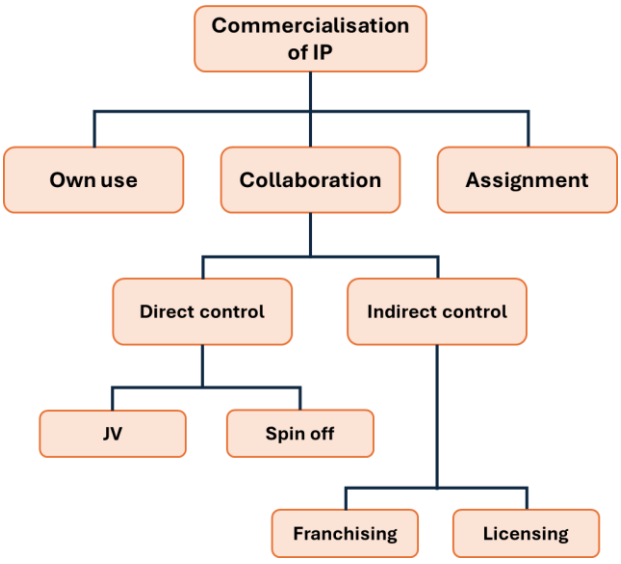

Figure 4 Commercialisation of IP

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The Figure 3 represents potential pathways for the commercial exploitation of IP and the following section provides the overview of potential pathways (European Innovation Council and SME Executive Agency, 2019)

Own use – The integration of intellectual property (IP) into an existing business helps to maintain its competitive edge and prevent competitors from undercutting prices or offering inferior alternatives in the market. The integration of IP into an existing business can also help protect against competitors, such as by preventing them from copying or infringing on the company's IP.

Collaboration - Collaborating to commercialize IP can help overcome resource constraints, leverage expertise, and reduce risks, making it an attractive option for many businesses.

i. Direct control – Direct control of IP, involves working directly with potential partners, licensees, or collaborators to develop, commercialize, or license IP
   - **Joint venture** - An Intellectual Property Joint Venture (IP JV) is a collaborative business arrangement between two or more independent organizations, known as venturers, who come together to achieve a specific goal or project by sharing risks and resources. The IP aspect of the JV is critical, as each venturer contributes their own intellectual property assets to the partnership. To ensure a successful collaboration, the venturers must agree on the initial contributions, responsibilities, and obligations within the alliance, as outlined in the Joint Venture Agreement
   - **Spinoff** - A spin-off (or spin-out) is a new, independent legal entity created by a parent organization (PO), typically a university, research institution, or corporation, to commercialize its intellectual property (IP) assets

ii. **Indirect control -** Indirect control of IP refers to working with intermediaries or third parties to facilitate IP collaboration
   - **Licensing -** An IPR license is a type of contract where the owner of an Intellectual Property Right (IPR) - known as the licensor - grants a specific party, the licensee, the permission to use their intellectual property, such as a patent, trademark, or copyright, within the bounds set forth in the license agreement. The license outlines the terms and conditions under which the licensed intellectual property can be used, including any limitations, restrictions, and obligations for both the licensor and licensee
   - **Franchising -** IP franchising is a unique form of licensing that enables a franchisor to replicate their business concept in multiple locations by partnering with a franchisee. The franchisor grants the franchisee the right to operate their business model, brand, and intellectual property, while providing continuous support and training to help establish and maintain the franchisee's business

Assignment - An IP assignment is a legal agreement where an owner of an Intellectual Property Right (IPR), such as a patent, trademark, or design, transfers the ownership of that IPR to another party. This can be done voluntarily, typically in exchange for consideration (e.g., money, other assets, or services). Consequently, the assignee becomes the new owner of the IPR.

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3. IMPLEMENTATION: PROCESS AND TOOLS

The following Figure 5 summarizes the Exploitation and Business innovation plan for the 3 reporting periods.

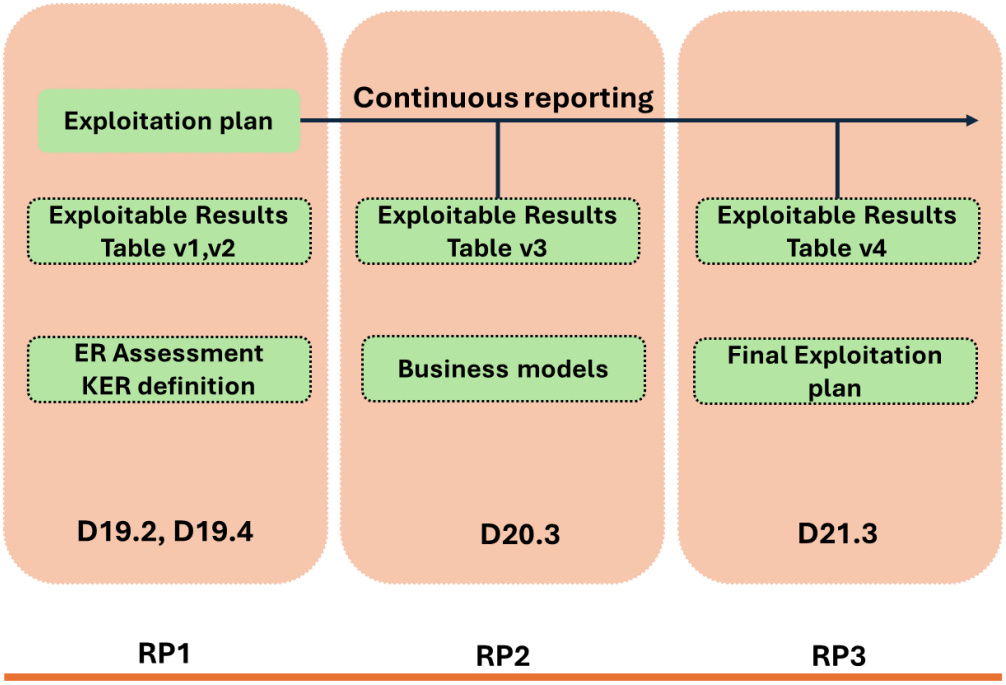

Figure 5 Exploitation and Business innovation plan

As shown in the diagram, exploitation is a continuous process, and an updated list of Exploitable Results (ERs) will be provided during each reporting period. Additionally, the exploitation plan and associated deliverables that outline the results are highlighted and set to remain active.

3.1.1. Process

The Exploitation Management Process extends throughout the entire project lifecycle and even beyond. To guarantee efficient and effective management of this ongoing process and to facilitate timely and interactive communication regarding Exploitable Results (ERs), three essential roles have been identified: the ER Manager, the ER Contributor, and the Innovation Support. These roles are responsible for monitoring and guiding the exploitation of ERs, contributing to their development, and providing expert advice and resources, respectively. Properly defining these roles and their responsibilities is crucial for ensuring a structured and successful exploitation management process. Figure 6 presents an overview of the interactions and interrelationships between the three primary roles - the ER Manager, the ER Contributor, and the Innovation Support - within the context of the W2W project.

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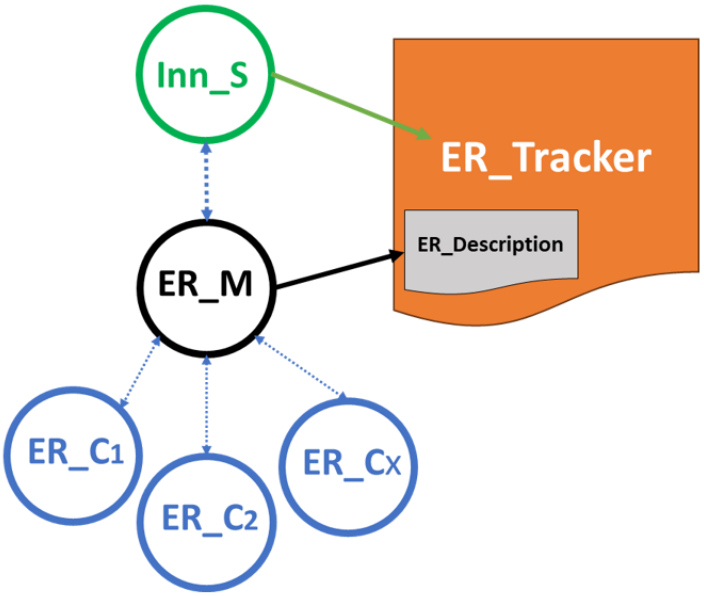

Figure 6. Schematic figure of the collaborative Innovation Management process proposed.

ER Manager: ER Manager is considered as the representative of the ER and lead contributor. ER Manager will be responsible for coordinating the progress of the ER with the other "ER contributors" during the entire project lifecycle. ER Manager will maintain a direct and periodic communication with the Exploitation (Innovation) Manager .

ER Contributors: The individuals and organizations of the consortium that are significant contributors to the core development of the ER, but also might act as early-adopters or be a channel towards final users/customers of the ER.

Innovation support: Innovation support is provided by R2M leads and monitors the Innovation management process in the project and offers the first layer of innovation support to ER Managers. This role is especially relevant for joint exploitation cases.

Others: Other organizations within the consortium will monitor the progress of ERs that are of interest to them. In alignment with the principles of Open Innovation, these organizations are encouraged to contribute their knowledge, contacts, opportunities, and expertise to support the development of the ER projects. Contributions may include:

- Identifying potential early adopters or end-users for the emerging technology, product, or service, providing valuable insights into customer needs and preferences.
- Assisting in customer acquisition by bringing their existing customer base, sales channels, or distribution networks to the consortium.
- Offering technical support, market research, and other expertise to help the ER teams navigate challenges and optimize their efforts.
- Providing access to proprietary technologies, resources, and intellectual property, potentially leading to collaborations and joint research initiatives.

3.1.2. Tracker

An "Exploitable Results Tracker" is employed to record and monitor the progress of exploitable results during a project. Within the scope of W2W project, spreadsheet have been created within

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"*W2W WP19 shared folder*" and includes detailed status information for each exploitable result of the project.

- Guidelines: Provides guidance for completing the tracker.
- ER overview: Shows all ER related information.
- ER assessment: Shows the results of the ER assessment.
- ER contacts: Shows all contact details of the ER managers.
- Statistics: Includes some high level graphs of distribution of ERs etc.

3.1.3. Template

The template serves as a tool to gather consistent information related to each exploitable outcome. As a result, the templates used to collect data on exploitable results may change or adapt during the course of the project

ER description template

For gathering a succinct yet comprehensive overview of the essential features and strategies related to an Exploitable Result (ER) is the use of an ER Description Template. This approach allows project teams to accurately document vital details. It is divided into three main areas,

- **ER Information (what)**: Basic information of the ER such as name, type, whether it's commercial or public, its category (depending on the family of ERs to which belongs) and a brief description are included.
- **Exploitation information (who, why, how)**: The ER manager leading its development, the TRL expected to achieve, the reasons behind considering it innovative/exploitable and an initial Exploitation vision with an action plan.

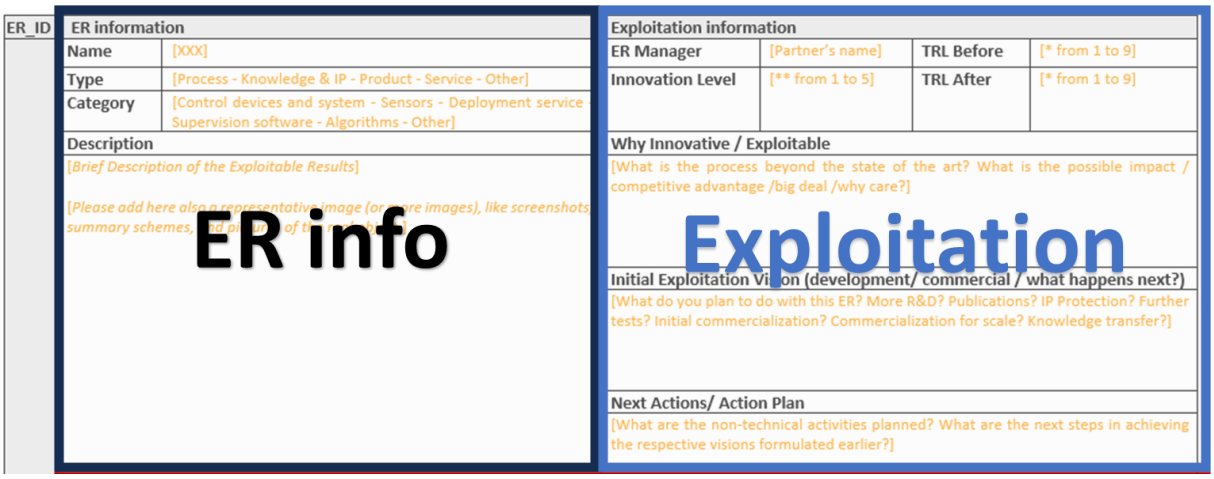

Figure 7 An example of ER description template

ER assessment template

ER assessment template will be defined to effectively evaluate ERs (refer section 2.3). The template essentially contains questionnaires with indicators aimed to assess the ERs expected impact and innovation risk.

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Expected impact of your ER

Indicator	Value	Evidence (strength) *Select 1 (poor) to 5 (strong)*
Economic impact		
Area of deployment (internal / external)	Within the organization - On the market	1 – 2 – 3 – 4 – 5
If external (market) deployment:		
Size of the untapped market	Small - Large	1 – 2 – 3 – 4 – 5
Type of addressable market	Existing - New	1 – 2 – 3 – 4 – 5
Market need	Not clear - Clear	1 – 2 – 3 – 4 – 5
Market grow	Low - High	1 – 2 – 3 – 4 – 5
Scalability of the business model	Poor - Very good	1 – 2 – 3 – 4 – 5
Environmental impact		
Carbon footprint reduction	Small - Large	1 – 2 – 3 – 4 – 5
Reduction of local pollution	Small - Large	1 – 2 – 3 – 4 – 5
Impact on circular economy	Low - High	1 – 2 – 3 – 4 – 5
Societal impact		
Social exclusion	None - Reduced	1 – 2 – 3 – 4 – 5
Energy poverty	None - Reduced	1 – 2 – 3 – 4 – 5
Stimulation of citizens' involvement in policy making	Low - High	1 – 2 – 3 – 4 – 5

Evidences & comments:

Figure 8 An example of ER assessment template

Exploitation plan template

To efficiently document the exploitation pathway for Key Exploitable Results (KERs), an "Exploitation Plan Template" will be defined. This template will outline the specific actions, resources, and timeline required to effectively capitalize on the opportunities presented by each KER. This can ensure that there is a clear understanding of the steps necessary to successfully exploit their KERs addressing intellectual property considerations and thus maximize the value derived from the project.

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4. PROJECT EXPLOITABLE RESULTS

4.1. LIST OF EXPLOITABLE RESULTS

Following **Σφάλμα! Το αρχείο προέλευσης της αναφοράς δεν βρέθηκε.** summarises the u pdated list of the project exploitable results as of M06 (writing of this deliverable).

Table 3 W2W Exploitable results

#	ER Name	ER Manager	ER Contributors	Type of result	Related WP
ER1	Optimal wood size particles for cascade valorization	ICCS	IRIS	Scientific or Technological R&D Result including ICT Hardware	WP5
ER2	Cascade valorization thresholds-led sorting system	ICCS	ICCS	Scientific or Technological R&D Result including ICT Hardware	WP5
ER3	Optimized separation enabled by Human-Robot Collaboration and MR technologies.	ICCS	ICCS	Scientific or Technological R&D Result including ICT Hardware	WP5
ER4	Wood Cascade to function	UHE	UHE	Scientific or Technological R&D Result including ICT Hardware	WP7
ER5	Wood composites for wallboards	NTUA	?[4]	Scientific or Technological R&D Result including ICT Hardware	WP7
ER6	Wood glue separation	LERMAB	Ecomaison & CF2P	Scientific or Technological R&D Result	WP9
ER7	Bioremediation wood treatment	LERMAB	Ecomaison & CF2P	Scientific or Technological R&D Result including ICT Hardware	WP9
ER8	Mixed wood liquefaction	UHE	UHE	Scientific or Technological R&D Result including ICT Hardware	WP9
ER9	Hydrothermal Carbonization	CIRCE	KIVERDI, P&G	Scientific or Technological R&D Result including ICT Hardware	WP11
ER10	Biotech-driven up-cycling of syngas into fatty acids	KIVERDI		Scientific or Technological R&D Result including ICT Hardware	WP11

[4] ~~Potential replacement of FOCCHI -TBD~~

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ER11	Ashes valorization	CIRCE		Scientific or Technological R&D Result including ICT Hardware	WP11
ER12	Life Cycle Sustainability Assessment Tool for Cascade Pathways	DRAXIS	ICCS, eBOS	ICT Software Digital solution	WP13
ER13	Material Volume Estimation	ICCS	eBOS	ICT Software Digital solution	WP13
ER14	Dynamic DPP	CERTH	CERTH	ICT Software Digital solution	WP13
ER15	Supply Chain management tool for the optimization of upcycling of secondary materials	UPV	CERTH, EBOS	ICT Software Digital solution	WP13
ER16	Integrated Circular Wood Upcycling Platform	eBOS	DRAXIS, UPV, ICCS, CERTH	ICT Software Digital solution	WP13
ER17	W2W Stakeholders Network	DRAXIS	All partners	Other	WP4
ER18	Classification Framework for recycled wood	ICCS	NTUA	Policy Related Result	WP4
ER19	Wood cascade data sharing model	TUB	DRAXIS, UPV, EBOS	Other Intangible Results	WP4
ER20	Training Programs for Upcycling, Replication, and Cooperation based on collaborative Design	POLIMI	VTT	Other	WP16
ER21	Synergies hub for circularity	UJOH	ICCS	Other	WP19
ER22	Circularity / Upcycling framework for cascade valorization	CEPS	VTT	Policy Related Result	WP16
ER23	Contribution to standardization and certification	UNE	All partners	Other	WP16
ER24	Business models	QPLAN	All partners	Other	WP19

ER1 Optimal wood size particles for cascade valorization

Wood and glass non-destructive real time techniques analysis and definition of optimal size will put in place the most adequate optical and spectroscopic characterisation techniques to determinate which is the most efficient particle size of wood and glass coming from CDW to further process these materials.

Category	1.Advanced Separation and Sorting Technologies		
ER Manager	ICCS	ER Contributors	IRIS
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP5		

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Related Pilot / Demonstration	ICCS premises		
Type of exploitation	Public		
TRL – Before	4	TRL -After	6
IP Background	Yes		

ER2 Cascade valorization thresholds-led sorting system

An automated, adaptable sorter capable of modifying their settings based on the valorisation needs taking into account the type and quantity of wood waste streams.

Category	1.Advanced Separation and Sorting Technologies		
ER Manager	ICCS	ER Contributors	
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP5		
Related Pilot / Demonstration	ICCS premises		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background	Yes		

ER3 Optimized separation enabled by Human-Robot Collaboration and MR technologies

Mixed Reality application for human-cobot collaboration: streaming data from the cobot to monitor its state and operating modes and provide guidance to the operator for any assigned tasks.

Category	1.Advanced Separation and Sorting Technologies		
ER Manager	ICCS	ER Contributors	
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP5		
Related Pilot / Demonstration	ICCS premises		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background	-		

ER4 Wood Cascade to function

Organosolv process will be optimized for the fractionation of wood waste. Chemical functionalization of lignin and cellulose nanofibers will be performed to enhance their compatibilities with the PLA.

Category	2.Upcycling Processes and Technologies		
ER Manager	UHE	ER Contributors	
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP7		
Related Pilot / Demonstration	Use Case #1		
Type of exploitation	Commercial		

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TRL – Before	4	TRL -After	6
IP Background	Yes		

ER5 Wood composites for wallboard

Incorporating the received lignocellulose materials that will act as fillers with stabilized PLA grades in order to produce novel long-term biobased composites. The newly developed wood-based compounds will be used in long-term building applications such as facades or wallboards.

Category	2.Upcycling Processes and Technologies		
ER Manager	NTUA	ER Contributors	(?)[5]
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP7		
Related Pilot / Demonstration	NTUA premises		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background			

ER6 Wood glue separation

High pressure hydrolytic process will be developed to remove urea-formaldehyde glue from furniture wood waste.

Category	2.Upcycling Processes and Technologies		
ER Manager	LERMAB	ER Contributors	Ecomaison & CF2P
Type of result	Scientific or Technological R&D Result		
Related WP	WP9		
Related Pilot / Demonstration	LERMAB/Use case#2		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background	Yes		

ER7 Bioremediation wood treatment

Utilization of microorganism in addition to physicochemical processes to remove substance of special concern from waste wood and from water effluents.

Category	2.Upcycling Processes and Technologies		
ER Manager	LERMAB	ER Contributors	Ecomaison & CF2P
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP9		
Related Pilot / Demonstration	LERMAB/Use case#2		
Type of exploitation	Commercial		

[5] ~~Potential replacement of FOCCHI- TBD~~

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TRL – Before	4	TRL -After	4
IP Background			

ER8 Mixed wood liquefaction

Production of polyols by liquefaction of mixed wood waste for the synthesis of green adhesives

Category	2.Upcycling Processes and Technologies		
ER Manager	UHE	ER Contributors	
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP9		
Related Pilot / Demonstration	Use Case #1 / Use Case #2		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background	Yes		

ER9 Hydrothermal Carbonization

Valorization of contaminated construction and demolition wood towards a hydrochar susceptible of being gasified to provide a gas stream rich in H2 and CO2. Demonstration of MW technologies and comparison to conventional heating techniques.

Category	2.Upcycling Processes and Technologies		
ER Manager	CIRCE	ER Contributors	KIVERDI, P&G
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP11		
Related Pilot / Demonstration	CIRCE		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background			

ER10 Biotech-driven up-cycling of syngas into fatty acids

Use exclusive CO2 to material fermentation platform to convert the syngas from wood waste into valuable feedstock for the detergent industry

Category	2.Upcycling Processes and Technologies		
ER Manager	KIVERDI	ER Contributors	
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP11		
Related Pilot / Demonstration	ER will be demonstrated at a demo-scale plant under Kiverdi's supervision		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background			

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ER11 Ashes valorization

A process able to eliminate contaminants contained in incinerated wood flying ashes via microwave technologies and create aluminosilicate structures.

Category	2.Upcycling Processes and Technologies		
ER Manager	CIRCE	ER Contributors	
Type of result	Scientific or Technological R&D Result including ICT Hardware		
Related WP	WP11		
Related Pilot / Demonstration	CIRCE		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background			

ER12 Life Cycle Sustainability Assessment Tool for Cascade Pathways

A tool to predict and assess the impact of different cascade paths or sequences for possible further uses of wood products and their materials.

Category	3.Digital Tools for Improving Circular Flows of Secondary Materials		
ER Manager	DRAXIS	ER Contributors	ICCS, eBOS
Type of result	ICT Software Digital solution		
Related WP	WP13		
Related Pilot / Demonstration	To be validated in the 3 proposed value chains		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background	-		

ER13 Material Volume Estimation

Material volume estimation will conduct the estimation of the materials 'volume. Multi-source data collection will also take place in this task. Images will be collected using both aerial and ground images. The collected material will be used for developing 3D models for volume estimation.

Category	3.Digital Tools for Improving Circular Flows of Secondary Materials		
ER Manager	ICCS	ER Contributors	eBOS
Type of result	ICT Software Digital solution		
Related WP	WP13		
Related Pilot / Demonstration	To be validated in the 3 proposed value chains		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background			

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ER14 Dynamic DPP

An end-to-end tracing module and W2W Digital Product Passport (DPP) to facilitate the storage and sharing of manufacturing data related to wood waste materials. The primary objective is to create interfaces, interface standards, and interface protocols that will allow for reliable and effective data exchange between various computer-aided manufacturing systems and stages. The collection, management, and sharing of multi-source, large-scale manufacturing data across various devices will be handled by a smart platform. The developed DPP will direct knowledge management and information flow for upcycling wood waste materials by utilising Explainable AI algorithms. To help with decision-making and direct the best configuration strategies for the recycling and reuse of wood waste materials, Machine Learning knowledge will be used to provide data that is interpretable, consistent, and compatible.

Category	3.Digital Tools for Improving Circular Flows of Secondary Materials		
ER Manager	CERTH	ER Contributors	
Type of result	ICT Software Digital solution		
Related WP	WP13		
Related Pilot / Demonstration	To be validated in the 3 proposed value chains		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background	Yes		

ER15 Supply Chain management tool for the optimization of upcycling of secondary materials

The "Supply Chain Optimiser for Secondary Materials" is an advanced digital tool designed to enhance the efficiency and cost-effectiveness of recycling wood along the supply chain. This tool enables companies to create detailed virtual representations of their supply chains, encompassing secondary materials providers, recyclers, transporters, formulators, and users. Leveraging sophisticated algorithms and data analytics, the tool simulates various scenarios to identify the optimal supply chain design and operation.

Category	3.Digital Tools for Improving Circular Flows of Secondary Materials		
ER Manager	UPV	ER Contributors	CERTH, eBOS
Type of result	ICT Software Digital solution		
Related WP	WP13		
Related Pilot / Demonstration	Use Case #1 / Use Case #2 / Use Case #3		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background	Yes		

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ER16 Integrated Circular Wood Upcycling Platform

The Integrated Circular Wood Upcycling Platform will be a centralized system that integrates different tools into a multifunctional platform. It will enable complete monitoring, tracking, and tracing of materials and products throughout the value chain. Key features include visualization, control capabilities, and AI-based optimization.

Category	3.Digital Tools for Improving Circular Flows of Secondary Materials		
ER Manager	eBOS	ER Contributors	DRAXIS, UPV, ICCS, CERTH
Type of result	ICT Software Digital solution		
Related WP	WP13		
Related Pilot / Demonstration	Pillar 3: Digital Tools for Improving Circular Flows of Secondary Materials		
Type of exploitation	Commercial		
TRL – Before	4	TRL -After	6
IP Background	Yes		

ER17 W2W Stakeholders Network

The exploitable result relates to the process of establishing the stakeholder network, along with the methods and tools that will be utilised to support it. This includes the systematic approach to network formation, the strategic frameworks applied, and the tools to facilitate and sustain stakeholder engagement.

Category	4.Supportive Framework in Policy, Market, and Skills		
ER Manager	DRAXIS	ER Contributors	All partners
Type of result	Other		
Related WP	WP4		
Related Pilot / Demonstration	Supportive framework		
Type of exploitation	Public		
TRL – Before	-	TRL -After	-
IP Background	-		

ER18 Classification Framework for recycled wood

A wood waste cascade classification & valorization framework will enable evaluation of potential classification and valorization pathways for wood waste present in CDW and furniture waste. The framework will enable selection of most appropriate classification and valorization routes based on number of criteria, such as the characteristics of available feedstock as well as, LCA calculation result, logistics optimization, and supply chain management.

Category	4.Supportive Framework in Policy, Market, and Skills		
ER Manager	ICCS	ER Contributors	NTUA
Type of result	Policy Related Result		
Related WP	WP4		

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Related Pilot / Demonstration	Supportive Framework		
Type of exploitation	Public		
TRL – Before	-	TRL -After	-
IP Background	-		

ER19 Wood cascade data sharing model

Concept for the W2W data sharing model based on FAIR principles; the model will support the development of the Digital Product Passport (DPP), including the DPP principles, as well as the definition of the digital data required to FAIR use of the DPP in the project context.

Category	4.Supportive Framework in Policy, Market, and Skills		
ER Manager	TUB	ER Contributors	DRAXIS, UPV, EBOS
Type of result	Other Intangible Results		
Related WP	WP4		
Related Pilot / Demonstration	Supportive framework to be used in T13-14.1		
Type of exploitation	Public		
TRL – Before	-	TRL -After	-
IP Background	-		

ER20 Training programs for Circular Economy and upcycling, built with collaborative Design together with the W2W processes partners, for potential replication

At proposal stage the ER was called “Training Programs for Upcycling, Replication, and Cooperation based on collaborative Design”, the ER owner POLIMI has suggested to rename the ER to “Training programs for Circular Economy and upcycling, built with collaborative Design together with the W2W processes partners, for potential replication”

Recommended list of training courses to improve company skills about circular economy (CE) and specifically upcycling, identified with a collaborative design approach with the partners involved in the W2W processes under experimentation. The ER20 is built on 'POLIMI's 'PEOPLE' methodology based on POLIMI's assessment methodologies to shape companies' Digital Transformation Road-maps.

Category	4.Supportive Framework in Policy, Market, and Skills		
ER Manager	POLIMI	ER Contributors	VTT
Type of result	Other		
Related WP	WP16		
Related Pilot / Demonstration	To be identified with and validated in the four W2W technological Circular Economy processes		
Type of exploitation	Public		
TRL – Before	-	TRL -After	-
IP Background	-		

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ER21 Synergies hub for circularity

Facilitate international collaborations to create synergies with related projects and exchange of best practices. In addition will liaise with decision makers at international level to develop practical recommendations to support policy initiatives.

Category	4.Supportive Framework in Policy, Market, and Skills		
ER Manager	UJOH	ER Contributors	ICCS
Type of result	Other		
Related WP	WP19		
Related Pilot / Demonstration	Supportive to T16-T18.4		
Type of exploitation	Public		
TRL – Before	-	TRL -After	-
IP Background	-		

ER22 Circularity / Upcycling framework for cascade valorization

A policy report summarizing the steps required for implementing the W2W cascade valorisation framework at the EU scale. The work will be maintained throughout the project to consolidate the regulatory, legislative, and certification impediments to the adoption of the proposed W2W cascade valorisation framework.

Category	4.Supportive Framework in Policy, Market, and Skills		
ER Manager	CEPS	ER Contributors	ICCS
Type of result	Policy Related Result		
Related WP	WP16		
Related Pilot / Demonstration	Pillar 4: Supportive Framework in Policy, Market, and Skills		
Type of exploitation	Public		
TRL – Before	-	TRL -After	-
IP Background	-		

ER23 Contribution to standardization and certification

The aim is to include other ER (or supporting outcomes) into new or revised standards that can potentiate their exploitation possibilities, transferring knowledge and adding impact

Category	4.Supportive Framework in Policy, Market, and Skills		
ER Manager	UNE	ER Contributors	All partners
Type of result	Other		
Related WP	WP16		
Related Pilot / Demonstration	Standardisation activities		
Type of exploitation	Public		
TRL – Before	-	TRL -After	-
IP Background	-		

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ER24 Business models

Co-designing sustainable business models with new revenue streams in collaboration with technology providers and industry partners adapted to each W2W Use Cases and final products

Category	4.Supportive Framework in Policy, Market, and Skills		
ER Manager	QPLAN	ER Contributors	All partners
Type of result	Other		
Related WP	WP19		
Related Pilot / Demonstration	Pillar 4: Supportive Framework in Policy, Market, and Skills		
Type of exploitation	Public		
TRL – Before	-	TRL -After	-
IP Background	-		

4.2. IP BACKGROUND

The Table 4 below provides a summary of the IP background reported by partners according to the Consortium Agreement (CA). As per the CA, a total of 10 partners are contributing their existing IP to the project.

Table 4 W2W Exploitable results - IP Background

#	Partner	IP Background
1	ICCS	Yes
2	LERMAB	Yes
3	CIRCE	Yes
4	NTUA	Yes
5	POLIMI	-
6	VTT	-
7	UPV	Yes
8	CERTH	Yes
9	UHE	Yes
10	TUB	-
11	UJOH	-
12	ELAK	-
13	KIVERDI	-
14	P&G	-

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15	FOCCHI	-
16	DRAXIS	Yes
17	eBOS	Yes
18	QPLAN	-
19	R2M	-
20	IRIS	Yes
21	CEPS	-
22	ISWA	-
23	RCM	-
24	UNE	

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5. CONCLUSION

The deliverable D19.2 presents a detailed exploitation management plan for the entire project duration of 4 years and beyond. This plan focuses on optimally utilizing the project's outcomes to contribute to the project's overall impact. The plan includes comprehensive strategies and the necessary actions for the adoption and commercialization of the project's generated outcomes.

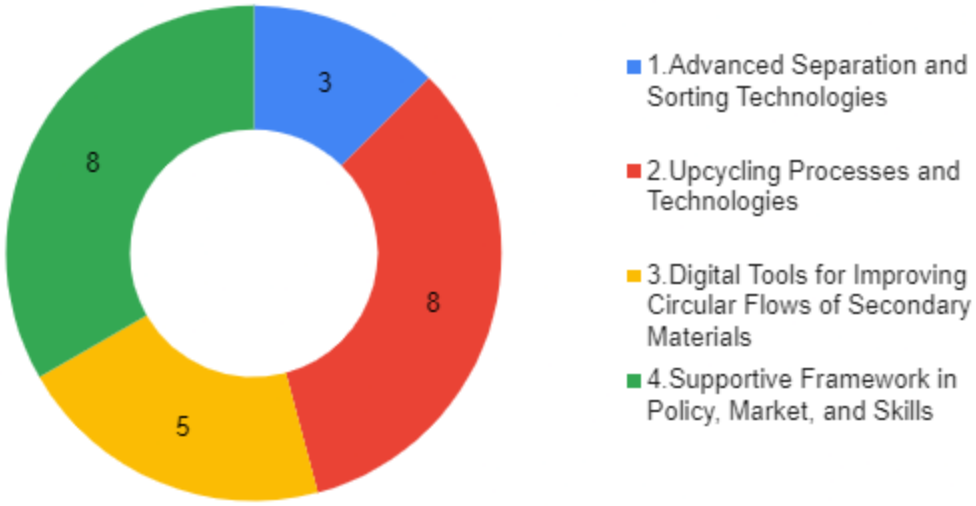

Figure 9 Exploitable results and categories

As next step, In D19.4 (Exploitation and Business Innovation Plan and activities, version 2), a thorough evaluation of each ER is to be performed, ultimately resulting in the identification of the project's Key Exploitable Results (KERs).

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