



WP3-A8. External expert Report of WP3 results.



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Transilvania
University
of Brasov





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1. INTRODUCTION

This document presents the outcomes of activity WP3-A8, titled “*External Expert Report on WP3 Results*”, which is part of *Work Package 3: “Learning Materials for Interdisciplinary Blockchain-Based Waste Management in the Ornamental Stone Sector.”*

UNITBv enlisted the help of an expert from the RoGBC (Romanian Green Building Council) to evaluate the contents of WP3.

The report summarized the independent pedagogical and technical review conducted by this external expert appointed through UNITBv. The assessment focused on the quality, internal consistency, and European relevance of the WP3 outputs, as well as their practical usability for adult learners, particularly professionals aged 45 and over, and training providers within the ornamental stone value chain.

As part of the review, the external expert examined all WP3 deliverables (WP3-A1 to WP3-A7), including the comparative studies, training materials, and the e-Handbook, along with all available language versions.

Feedback was collected using a structured questionnaire designed to validate the robustness of the work completed, highlight any gaps or inconsistencies, and propose practical, actionable improvements for the upcoming implementation and pilot phases.

2. EVALUATION QUESTIONNAIRE

The questionnaire used for the external review of WP3 was the following:

RockChain. Evaluation of WP3: Learning materials for interdisciplinary Blockchain-Rock Ornamental Waste Management

TRANSVERSAL TECHNOLOGICAL SKILLS FOR THE ORNAMENTAL ROCK INDUSTRY
FOCUSING ON THE
APPLICABILITY OF BLOCKCHAIN IN A CIRCULAR ECONOMY
REFERENCE: 2023-1-DE02-KA220-ADU-000166863

mcarlitos.146@gmail.com [Cambiar de cuenta](#)



 No compartido

* Indica que la pregunta es obligatoria



ROCKCHAIN



Organisation: *

- Deutscher Naturwerkstein-Verband e.V. (DNV)
- Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM)
- Universitatea Transilvania din Brasov (UNITbv)
- Klesarska skola (KSK)

1. Overall, how satisfied were you with the management and development of the WP3 (Work Package 3): Learning materials for interdisciplinary Blockchain-Rock Ornamental Waste Management?

	1	2	3	4	5	
Not satisfied at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very satisfied

2. Comparative study of Rock Ornamental Waste management regulations in each country. Please rate the following aspects.

	Fully disagree	Rather disagree	Neither agree nor disagree	Rather agree	Fully agree
The comparative study on Rock Ornamental Waste Management regulations in the participating countries was comprehensive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Differences in Rock Ornamental Waste management regulations between the participating countries were clearly identified.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The study provided a clear picture of how Rock Ornamental Waste management is regulated in different national contexts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The results of the study were useful for adapting the project strategies at the European level.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Comparative study of information technologies applied to waste management at international level in stone sector. Please rate the following aspects.

	Fully disagree	Rather disagree	Neither agree nor disagree	Rather agree	Fully agree
The comparative study was comprehensive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Differences between countries were clearly identified.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The results of the study were useful for adapting the project strategies at the European level.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Develop of training Material for e-Handbook based on the curricula. Please rate the following aspects.

	Fully disagree	Rather disagree	Neither agree nor disagree	Rather agree	Fully agree
The production of the e-Handbook was effectively completed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The contents of the training material were clear and aligned with the educational objectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The training material was useful and adequate for teaching the concepts defined in the curriculum.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. eHandbook of Circular Economy strategies applied to Rock Ornamental Waste Management using Blockchain technologies. Please rate the following aspects.

	Fully disagree	Rather disagree	Neither agree nor disagree	Rather agree	Fully agree
The production of the e-Handbook was effectively completed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The e-Handbook covered all relevant aspects defined in the project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The structure and design of the e-Handbook facilitated the understanding of the topics covered.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The e-Handbook was a useful tool for disseminating the knowledge acquired.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Translations of the e-Handbook in all partners' languages. Please rate the following aspects.

	Fully disagree	Rather disagree	Neither agree nor disagree	Rather agree	Fully agree
The quality of the translations facilitated the understanding of the results in all participating countries.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All translations were done in a timely manner and within the established deadlines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The translation of the results contributed to better communication between the project partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Participation in a congress to disseminate the results of WP3. Please rate the following aspects.

	Fully disagree	Rather disagree	Neither agree nor disagree	Rather agree	Fully agree
The participation in the congress was well prepared.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The project results of WP3 were clearly presented.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The dissemination activities carried out at the congress were effective.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The participation increased the visibility of the project at the European level.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Second International Seminar in Brasov (Romania). Please rate the following aspects.

	Fully disagree	Rather disagree	Neither agree nor disagree	Rather agree	Fully agree
The Second international seminar in Brasov was organised effectively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The topics addressed at the seminar were relevant and aligned with the project objectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organisation and logistics of the seminar were adequate to encourage participation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. External expert report of WP3 Results. Please rate the following aspects.

	Fully disagree	Rather disagree	Neither agree nor disagree	Rather agree	Fully agree
The external expert's report on the results of WP3 provided an objective and detailed assessment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The recommendations of the external expert were clear and applicable for the improvement of the project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The report highlighted strengths and areas for improvement in the results obtained in WP3.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The external evaluation was useful to validate the quality and effectiveness of the WP3 results.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



10. Remarks. Please add any comments you consider appropriate about the tasks developed in this WP3.

Tu respuesta

11. Please, tell us what kind of improvement you can suggest for the WP3:

Tu respuesta



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Enviar

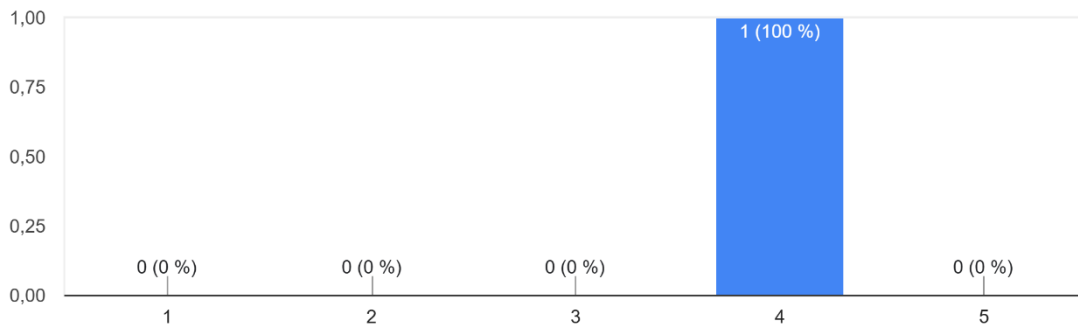
Borrar formulario

3. RESPONSE

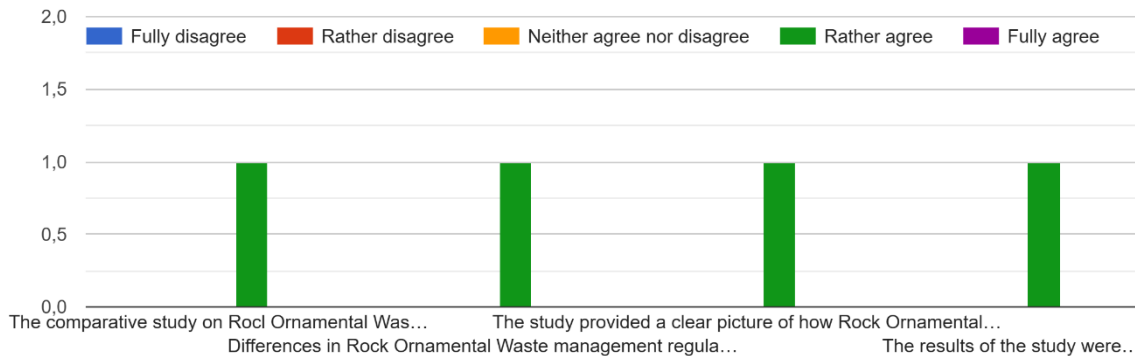
The responses of the survey for WP2 are presented below (print screens of the written replies and graphical representation of the ratings):

1. Overall, how satisfied were you with the management and development of the WP3 (Work Package 3): Learning materials for interdisciplinary Blockchain-Rock Ornamental Waste Management?

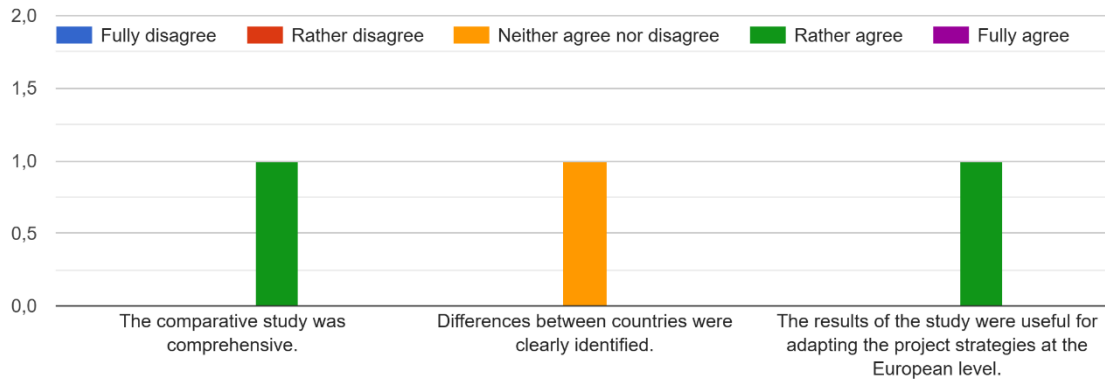
1 respuesta



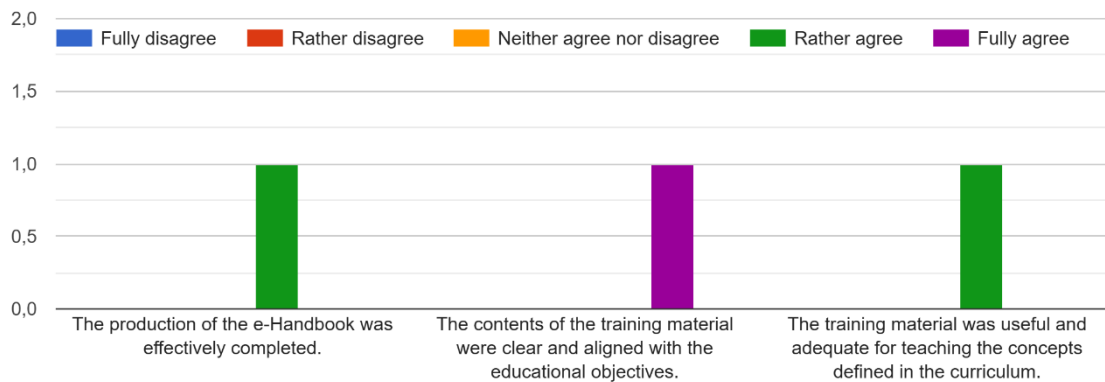
2. Comparative study of Rock Ornamental Waste management regulations in each country. Please rate the following aspects.



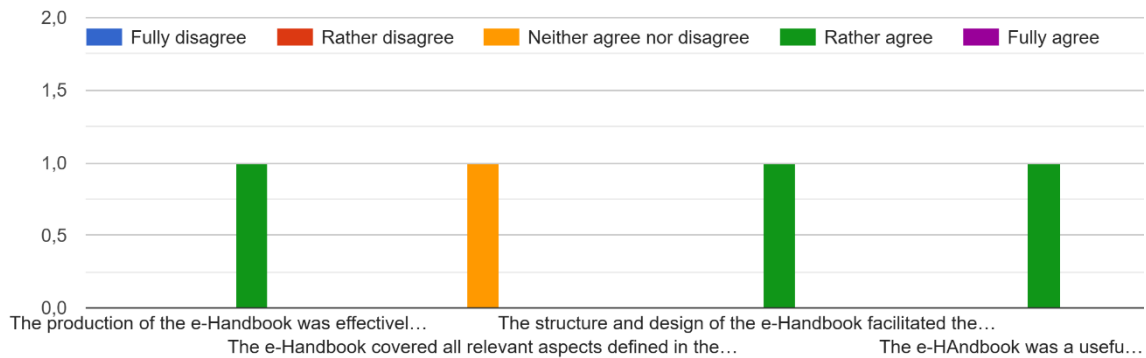
3. Comparative study of information technologies applied to waste management at international level in stone sector. Please rate the following aspects.



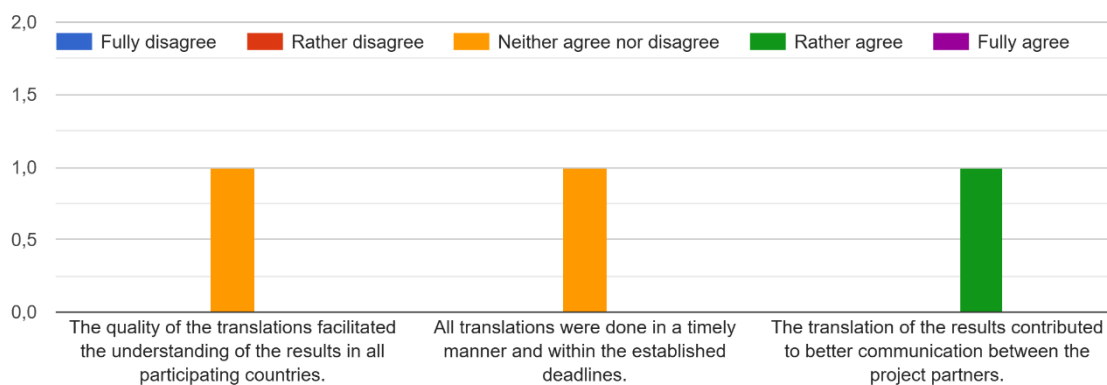
4. Develop of training Material for e-Handbook based on the curricula. Please rate the following aspects.



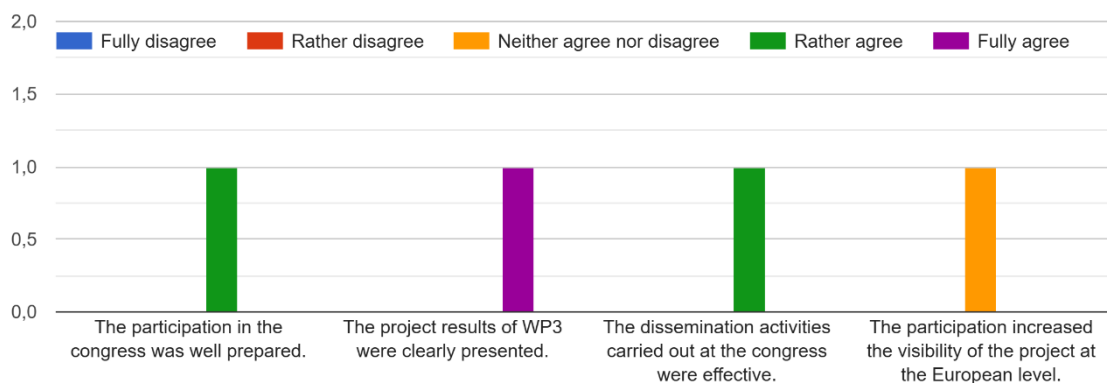
5. eHandbook of Circular Economy strategies applied to Rock Ornamental Waste Management using Blockchain technologies. Please rate the following aspects.



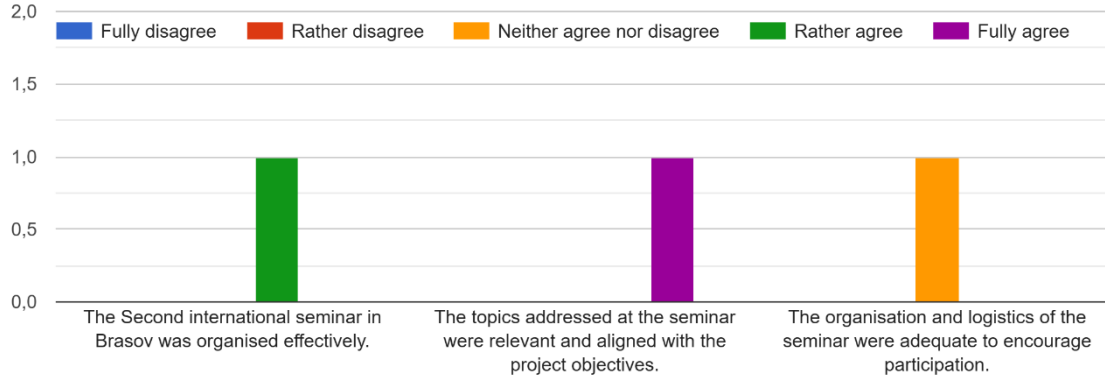
6. Translations of the e-Handbook in all partners' languages. Please rate the following aspects.



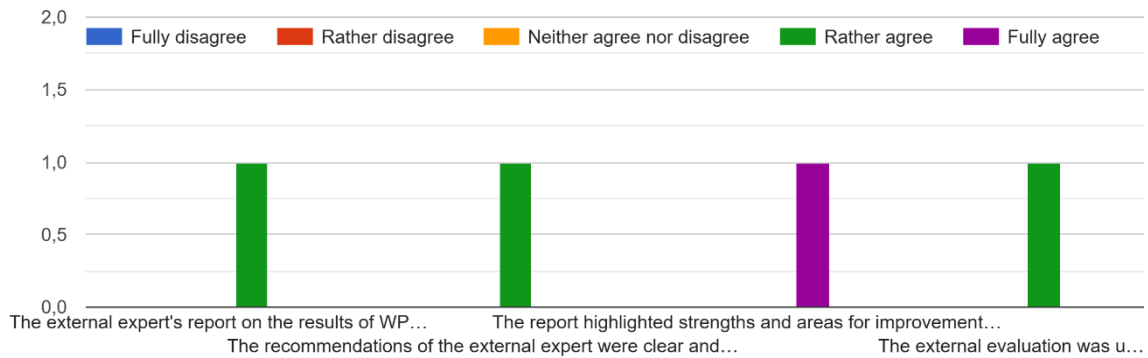
7. Participation in a congress to disseminate the results of WP3. Please rate the following aspects.



8. Second International Seminar in Brasov (Romania). Please rate the following aspects.



9. External expert report of WP3 Results. Please rate the following aspects.



10. Remarks. Please add any comments you consider appropriate about the tasks developed in this WP3.

1 respuesta

WP3 provides a strong backbone for the overall project, effectively linking three key dimensions:

1. the current regulatory landscape,
2. digital solutions for traceability, and
3. a structured training package suitable for adult education contexts.

The comparative approach is appropriate, and the dissemination efforts—including conference presentations and the seminar—contribute positively to the project’s credibility and future uptake.

That said, several elements still reflect a “prototype-stage” status from an implementation point of view. While the regulatory and IT studies are solid in terms of desk research, their impact would be significantly enhanced by translating them into practical, real-world scenarios specific to the ornamental stone value chain. This could include step-by-step waste classification guides, clear end-of-waste process pathways, and traceability workflows that are easy to understand for adult learners with no prior exposure to these topics.

Dissemination and translation activities would also benefit from stronger measurability and consistency—for example, by adding indicators related to reach, stakeholder profiles, and adoption intent. A clear editorial pass across outputs (to harmonize terminology, dates, and formatting) would further improve the professional quality and usability of the materials.

In summary, WP3 is fit for purpose, but its classroom readiness and broader stakeholder transferability will depend on the integration of more concrete micro-cases, visual process maps, and stronger evidence of actual or anticipated impact.

11. Please, tell us what kind of improvement you can suggest for the WP3:

1 respuesta

Add 3–5 micro-cases (one from each partner country) that walk through practical examples: starting from the waste type, then code/classification, treatment route, required documentation, and finally the traceability steps. This would ground the content in real contexts and make it easier to apply.

Include a glossary covering both technical terminology and blockchain fundamentals, and ensure consistent use of key terms across all language versions to support clarity and alignment.

Strengthen the connection between the desk research and training materials by adding “What this means for trainers/learners” boxes and practical checklists that translate findings into actionable classroom guidance.

Introduce dissemination KPIs, such as audience size, participant profiles, qualitative feedback, and follow-up actions. Also, maintain an audit-ready record of outputs, with clear documentation of dates, deliverables, and version history.

Enhance accessibility by providing simplified language options, increasing the use of visuals and process diagrams, and including specific trainer guidance for managing groups with mixed levels of digital or technical ability.

4. CONCLUSIONS

The external evaluation assigned an overall satisfaction score of 4 out of 5, indicating that WP3 delivers a coherent and largely mature set of learning resources that effectively support the *RockChain* European training pathway.

The external expert considers WP3 a strong backbone for RockChain, because it successfully connects three essential dimensions:

- (1) the regulatory landscape;
- (2) digital traceability solutions, and;
- (3) a structured training package suitable for adult education.

The expert also confirmed that the comparative approach is appropriate and that dissemination actions (conference presentations and the international seminar) strengthen credibility and support future uptake.

Key strengths identified across WP3 deliverables included:

- The relevance of the selected topics, such as waste regulations, circular economy strategies, and digital traceability, in the context of the ornamental stone value chain.
- The clarity and alignment of the learning pathway with the WP2 RockChain Curriculum, enabling integrated use across adult VET and higher education settings.
- The practical orientation of the e-Handbook and learning units, which support both facilitated sessions and independent study.
- The added value of dissemination activities, including conference contributions and the seminar held in Braşov, which helped increase visibility and stakeholder engagement.

Despite the overall maturity of WP3, the review points to several enhancements needed

Priority recommendations of WP3:

- The expert recommended adding 3–5 micro-cases (ideally one per partner country) that walked learners through a full practical route.
- The expert recommended including a glossary covering both technical terminology and blockchain fundamentals, ensuring consistent use of key terms across all language versions.



- The expert recommended strengthening the connection between desk research and training materials.
- The expert recommended introducing dissemination KPIs (audience size, participant profiles, qualitative feedback, follow-up actions) and maintaining an audit-ready record of outputs with clear documentation of dates, deliverables and version history.
- The expert recommended enhancing accessibility by providing simplified language options, increasing the use of visuals and process diagrams, and adding specific trainer guidance for groups with mixed digital or technical ability.

Implementation of recommendations in WP3:

The proposed improvements were focused and do not require major redesigns. Instead, they are intended to enhance clarity, inclusivity, and practical uptake across diverse European training environments.

- 3–5 practical micro-cases (grounding the desk research): WP3 outputs were strengthened with real-world examples and case-study material that walked learners through realistic applications of digital waste management and traceability. This was reflected in the IT comparative study (WP3-A2), which incorporated explicit case-study references (e.g., large-scale smart waste deployments and sector-relevant digitalisation examples) and scenario-driven discussion of applicability to waste streams and traceability. The same “case-based” approach was then carried into the training materials (Units, especially Unit 4) and the integrative practical exercise, where learners were guided through applied workflows rather than abstract descriptions. Videos and supplementary material were also included in each teaching unit in the online course on the OER platform, as support for students and to provide more practical cases.
- Glossary / terminology consistency across languages: While WP3 did not rely on purely theoretical definitions, it standardised core terminology through embedded definition sections and repeated use of key concepts (e.g., definitions of blockchain, smart contracts and traceability primitives in Unit 2, and consistent “traceability” language across the WP3 materials). This terminology backbone supported the translations and multilingual reuse foreseen in WP3 (WP3-A5), reducing ambiguity for adult learners and trainers. Supplementary material was also included in each teaching unit in the online course on the OER platform to help students better understand the concepts and terms and to provide them with more learning tools.
- “What this means in practice” for trainers and learners: WP3-A1 and WP3-A2 were not left as stand-alone desk research. Their findings were operationalised into training-oriented content through structured learning units and activities: (i) the regulations study (WP3-A1) made the regulatory logic actionable by clarifying waste classification and end-of-waste pathways, and (ii) the training units



converted these insights into stepwise learning sequences and applied tasks (notably in Unit 4, which explicitly focused on how traceability steps and documentation logic worked in practice).

- Dissemination KPIs, measurability and audit-ready records: WP3 dissemination was documented in a more “audit-ready” format through WP3-A6, which recorded concrete dissemination outputs (titles, type, dates, status and channel) and provided references/links where relevant. This directly addressed the recommendation to improve consistency, traceability of outputs and evidence of reach/uptake.
- Accessibility and stronger use of visuals/process diagrams: WP3 learning materials were delivered in formats that supported adult learners with mixed digital confidence, including structured units with clear sections and extensive visual support (figures/diagrams) and complementary slide decks (Units PPTX). This increased readability and supported trainer delivery in mixed-ability groups.