mastery

D2.1 Research Plan

WP2 Green Skills and knowledge needs in Industry and policy context for responding to them.

construction

wood-furniture

agriculture

manufacturing

Co-funded by the European Union

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Document Summary

The Research Plan (D2.1) serves as a blueprint and prioritises the topics of relevance concerning the MASTERY objectives and the results to be reached, as well the approach and methodologies definition. The Research Plan is intended to explore the potential implications of research results on micro-credentials for green skills implementation – i.e., improving the knowledge of micro-credentials best practices, informing policy and decision makers, strengthening quality in the VET system and the labour market skill match, creating a basis for future development of the micro-credentials in VET systems supporting the green transition – with the final aims to (1) identify and understand the needs and the cross-cutting green skills in the selected sectors (i.e., agriculture, construction, wood and furniture, manufacturing, and sustainability management and transversal skills); (2) identify the priorities; and (3) develop an appropriate taxonomy related to them.

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Executive summary

The double transition paradigm (digitalization and ecological transition) combined with the European demographic trend, have imposed the necessity to reproject the Vocation and Education Training system (VET). According to this, it is fundamental to understand the evolution of the market trends and the linked skills need to align demand and offer rapidly. In this context micro credentials present numerous advantages linked to the possibility of formal and informal learning for students, as well as the digital format, the nature of short-term outcomes, and the modularity.

The Mastery Consortium for Work Package 2 aims at understanding the needs and the cross-cutting green skills in the selected sectors (Agriculture, Construction, Manufacturing, Wood and Furniture, and Sustainability Management and Transversal Skills), identifying the priorities and developing an appropriated taxonomy related to them. The methodology to achieve the objectives mentioned before will be based on desk research, direct interviews and online surveys.

Mapping and analysing the emerging green skills and micro-credential system will serve to define the current framework in which green micro-credentials are developed, knowledge about them, and education and training needs to be fulfilled. These activities will allow to develop a double helix of results, in terms of which green skills can act as levers of change both in the specific sectors (considering agriculture, construction, wood and furniture, and manufacturing) and in the transversal sectors (considering sustainability management and transversal skills), and which learning recognition and micro-credential processes and tools can be supported to accelerate and update the emerging green skills in the Labour Market systems.

Introduction and Aim of the Research

In the Research Plan, the Mastery Consortium will precisely describe the context of the research, the major goals, the methodology and the passages that are going to be follow relatively to the Work Package 2.

Green Skills e micro-credential

The double transition paradigm (digitalization and Industry 4.0 and ecological transition) combined with the European demographic trend, have imposed the necessity to reproject the Vocation and Education Training system (VET). According to this, it is fundamental to understand the evolution of the market trends and the linked skills need to align demand and offer rapidly. In this context the impact of the green transition on sectors varies according to numerous factors. For this reason, it is impossible to identify a common and univocal trend or a recurrent green job for each of them, but it is easier to introduce the concept of green occupation.

Actually, it would be easier and more efficient to understand what the current job are touched, directly and indirectly, by the green transition and how they can be adapted to the mechanisms mentioned before.

The phenomena that can happen in each sector range between job disruption, typical of obsolete industries like coal and mining, job substitution or readaptation, for industries that have experienced structural changes like the automotive one, or even job creation for sectors like waste recovery or the ones associated with the principles of circular economy that have a high job creation potential.

All these phenomena will lead, according to studies, to a neutral or general positive quantitative impact on the labour market and to a high sector mobility.

What stands out in this positive forecast is that, observing the labour market, there is a strong unalignment between green skills request from employers and availability, according to the last 5 years. Also, the majority of the green skills' request arises from non-traditional green jobs.

The problem has already been portraited by European institutions without leading to a definitive solution because of its complexity and multidimensionality. The process has started with the Business Europe recommendations of 2010 regarding green skills, moving through important milestones like the 17 SDGs of 2015 and the European Green Deal of 2019 till the Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond of 2021 and Council of European Union: Recommendation on a European approach to micro credential of 2022.

Also, sector specific actions, like the Construction Blueprint (building) project and the European Center for Development of Vocational Training (CEDEFOP)' Growing green report (agri-food) testify the efforts of policy makers in renewing the education system.

The differences in terms of employment trends between a sector to another have been clearly highlighted by the Onet Resource Center and translated in the phenomena of reskilling, for obsolete position, upskilling for sectors that do not go under substantial change, or even training for new jobs or new products. Generally, there are some common tendences arising that can be identified with the presence of multiskilled teams, hybrid profile, and distance from the traditional linear economy paradigm in favour of the circular one. CEDEFOP has defined some possible labour scenarios according to the accomplishment of European Green Deal's major goals of reaching climate neutrality by 2050, decoupling economic growth from natural resources exploitation, and not leaving anyone behind the transition.

According to them, there are some major interesting consideration that can be made.

The first is that the employment benefits are visible both for high skilled and lower labour profiles.

Second, the green skills' request drastically differs from a sector to another.

The importance of the contextual development of transversal green skills is instead underlined by documents like the European Commission's Green Comp and the Inner Development Goals' Framework.

In this evolving context, the role of micro-credentials stands out. Updating and adapting easily, micro-credentials present numerous advantages linked to the ability to satisfy the demand of the labour market, the impact on continuous learning, the possibility of formal and informal learning for students, as well as the digital format, the nature of short-term outcomes, and the modularity.

Despite this, there are also some problems related to the difficulty of recognition and achievement of results for disadvantaged students, the unregulated proliferation of certifications, the non-recognition of value, and the limited quality to reflect on. In general, the characteristics of the micro-credentials, if well adapted to different sectors and different VET systems, can be the most powerful instrument in the promotion of a green and just transition.

Aim of the research

The aim of the Mastery Consortium for the Work Package 2 can be summed up in three major objectives:

- Identify and understand the needs and the cross-cutting green skills in the selected sectors (Agriculture, Construction, Wood and Furniture, Sustainability Management in Manufacturing and Transversal Skills);
- Identify the priorities (i.e. strategic skills enabling the green transition, actors, fields, etc);
- develop an appropriate Taxonomy related to them (comparison for an integration proposal on ESCO framework).

The Mastery Consortium will analyse which labour market and professional qualification system’s rigidities and barriers hamper the positive green employment effects, being able to foster the knowledge on the economic and environmental policy instrument for structuring and managing the work transition to a green economy.

Finally, Mastery will define a shared benchmark for the green skills description and related micro-credentials, including different stakeholders' perspectives on the Training, Labour, Productive sectoral application of the micro-credential for the emerging green skills. All the project’s partners are actively involved in the data collection (interviewees’ identification, active participation to interviews and online survey) to achieve an efficient and holistic instrument that includes all the topics overmentioned and predefines the conditions for a becoming consensus in the final policy proposal that the project will elaborate.

The work plan organisation will allow to develop a double set of results, in terms of which green skills (selection of green skills) can act as levers of change in the specific sectors mentioned before and which learning recognition and micro credential process and tools can be supported to accelerate and updating of the emerging green skills in the Labour Market systems (micro-credits to strengthen the effectiveness of initial and continuous VET training for upskilling and reskilling, orientation, placement, etc.).

Methodology

The Mastery Consortium will achieve the overmentioned objectives with research carried out in two phases.

The research will start with desk research articulated in two distinct literature reviews. The first one will be based on the analysis of the concept of micro credential in the scientific literature, considering that there is not an official and univocal definition of this short-term learning certification. This analysis can be expanded to the grey literature if there are not enough sources available. The second one will be focused on the concept of green skills/green professions for the key industries (Agriculture, Construction, Wood and Furniture, Manufacturing, and Sustainability Management and Transversal Skills). This analysis can be expanded to the grey literature if there are not enough sources available. The aim of these literature reviews are the identification of the strengths and weaknesses of micro credentials; the identification of the major green skills emerging from literature; and the definition of the interview protocol for the second part of the research.

The second phase of the research is related to the direct investigation of key representants of each of the sectors mentioned before, coming from the networks of each partner, based on interviews and online surveys. Because of the strong admixture between public and private powers regarding job market and education system, the Consortium will interview representants, public and private, for each sector (i.e., firms consortiums, public sectorial observatories, workers associations, Ministry of labor commissions, representants of EU, etc.). Face-to-face interviews (at least 4 interviews per sector, 20 in total) will be carried out and an online survey (50 filled questionnaires for each sector, at least 250 total responses) will be launched. The major objectives of this second phase are: the identification of the effective needs of the job markets in terms of green skills; the comparison of the literature reviews results with the interviews results; and the definition of a taxonomy for the new identified green skills that can be integrated in the ESCO framework.

The WP2 will provide a final report that will identify the green skills that will be the base of the micro-credential process to update the VET system according to the needs imposed by the green and the digital transition, setting priorities for the training, and also expanding the literature on micro-credential, hence increasing their quality and their efficacy to make them a really powerful instrument integrated in the domestic education system.

Plan of activities

The activities over mentioned are resumed in Table 1.

Task	Task name	Action	Completion date
D1.1	Research Plan	Research Plan uploaded on the EU platform.	31 January 2024
2.1	Mapping of existing research and sectorial case studies on a EU/International level.	Desk research of the grey and scientific literature, targeting the micro- credentials and the knowledge needs in the selected sectors and on the existing policies.	29 February 2024
		First draft of the questionnaires (online and offline face-to face interviews and online survey) presented at the MASTERY Consortium.	15 February 2024
		Questionnaires approved by the Mastery Consortium.	08 March 2024
		Questionnaires translated in the proper language (Bulgarian, Finnish, French, Dutch, English, Italian, Spanish).	15 March 2024
		Questionnaires tested by each partner in each language version (Bulgarian, Finnish, French, Dutch, English Italian, Spanish).	25 March 2024
M6	MASTERY Research Plan	Research Plan approved by the MASTERY Consortium.	31 March 2024
2.1	Mapping of existing research and sectorial case studies on a EU/International level.	Online survey published on web platform.	04 April 2024

		Collection of online survey results (50 filled questionnaires for each sector, i.e. at least 250 responses).	31 May 2024
		Interviews of experts and representatives of the selected sectors (4 interviews per sector, i.e. at least 20 interviews).	30 June 2024
		Data analysis	31 July 2024
M7	Draft of the Research Report on the micro-credential solutions to boost the green skills match for industry	Analysis completed and draft of the Research Report.	31 August 2024
2.2	Development of the market set.	Benchmark analysis to create the micro-credential system for supporting the green skills (integrating the Taxonomy on green skills to find potential cross-cutting skills and competences that might be emerging as priorities).	31 October 2024
2.3	Selection of priorities to design the micro-credential system.	Selection of the priorities to design the MASTERY system of micro-credential for green skills.	31 October 2024
M8	Market set for micro-credential system supporting the green skills.	Report on Market set.	31 October 2024
D2.2	Research Report on the micro-credential solutions to boost the green skills match for industry	Research Report uploaded on the EU platform.	30 November 2024

Conclusions

Driving the dual transition paradigm, combined with demographic dynamics in Europe, urges a re-thinking of the VET system to adjust current job and skill profiles to new frameworks. Being short-term, small educational pieces, micro-credentials deliver targeted learning and flexibility while at the same time assessment of learning outcomes and certification of knowledge at the end of the process. However, there are still many open questions for their implementation in Europe, and the identification, development, testing and assessment of innovative policy approaches is needed for ensuring mutual application of micro-credential in all Europe. In addition, green skills needs are still not well defined, differing from sector to sector and requesting non-traditional green jobs. Tough the problem has already been portraited by European institutions, this did not lead to a definitive solution because of its complexity and multidimensionality. There is still a strong unalignment between the request of green skills and their availability on the labour market, and European studies highlighted the importance of a contextual development of transversal green skills, convenient for all the industrial sectors. Updating and adapting easily, micro-credentials present numerous advantages linked to the ability to satisfy the demand of the labour market, the impact on continuous learning, the possibility of formal and informal learning for students, as well as the digital format, the nature of short-term outcomes, and the modularity. Therefore, the MASTERY project aims to (1) boost the green job opportunities, through the recognition of micro-credentials enabling upskilling and reskilling pathways; (2) provide faster responses to the skills needs identified by employers; and (3) enhance the flexible qualification and retraining according to labour market needs. To achieve these goals, a first analysis of *green skills and knowledge needs in industry and policy context for responding to them* (WP2) is needed.

The Research Plan (D2.1) serves as a blueprint and prioritises the topics of relevance concerning the MASTERY objectives and the results to be reached, as well the approach and methodologies definition. The Research Plan is intended to explore the potential implications of research results on micro-credentials for green skills implementation – i.e., improving the knowledge of micro-credentials best practices, informing policy and decision makers, strengthening quality in the VET system and the labour market skill match, creating a basis for future development of the micro-credentials in VET systems supporting the green transition – with the final aims to (1) identify and understand the needs and the cross-cutting green skills in the selected sectors (i.e., agriculture, construction, wood and furniture, manufacturing, and sustainability management and transversal skills); (2) identify the priorities; and (3) develop an appropriate taxonomy related to them. Accordingly, the *Research Report on the micro-credential solutions to boost the green skills match for industry* (D1.2) will detail the key green skills for which applying a micro-credentials process will allow to address the current education and training needs caused by fast-changing knowledge-development and labour market demands for the green transition. The quality assurance mechanisms based on the EQAVET methodologies will be developed, setting the process of how existing courses can be enriched with transitional skills and competences in line with the vocational excellence principles. The Research Report will also give suggestions on how to tackle the increasing concerns about micro-credentials quality criteria, suggesting which criteria to apply facing the growing number of diverse alternative credentials, reinforcing a sharable understanding of what a micro-credential is.

In order to develop the Research Report, three main tasks will be performed to gather insights and understand the evolution of the market trends and the related skills need to align demand and offer rapidly: (2.1) mapping of existing research and sectorial case studies on a EU/International level; (2.2) developing the market set; and (2.3) selecting priorities to design the micro-credential system.

Mapping and analysing the emerging green skills and micro-credential system will serve to define the current framework in which green micro-credentials are developed, knowledge about them, and education and training needs to be fulfilled. During Task 2.1, the MASTERY Consortium will perform two-phase research. The first phase includes desk research on the grey and scientific literature, targeting the micro-credentials and the knowledge needs in the selected sectors and on the existing policies. This will include two literature reviews exploring, at one hand, the use of micro-credentials and, at the other hand, the need for green skills in the selected sectors. The second phase will validate the results of the first step and will serve to identify the system's rigidities and barriers, through interviewing experts and representatives of the selected sectors. At the end, at least 250 online survey responses (50 for each sector) and 20 face-to-face interviews (4 for each sector) are expected to be carried out. In order to create a benchmark for further development of micro-credential systems supporting the green skills, a market set will be developed through a benchmark analysis, and it will integrate the Taxonomy on green skills to find potential cross-cutting skills and competences that might be emerging as priorities. Finally, the selection of priorities to design the micro-credential system will provide a joint selection of priorities to design the MASTERY system of micro-credential for green skills. During Task 2.3, the MASTERY Consortium will rely on courses already available, such as Erasmus+ GREENER and Erasmus+ INSIGHT, as well as other relevant courses to provide the final output, i.e., a pool of finding and conclusions that will serve as a basis for the co-design of micro-credentials policy methodology.

Approved by the end of month 3 (March 2024), the MASTERY Research Plan (M6) will be used as the basis for the development of the draft of the Research Report on the micro-credential solutions to boost the green skills match for industry (M7), and its final version, as well as the Report on Market set for micro-credential system supporting the green skills (M8). At the end of month 11 (November 2024), these activities will allow to develop a double helix of results, in terms of which green skills can act as levers of change both in the specific sectors (considering agriculture, construction, wood and furniture, and manufacturing) and in the transversal sectors (considering sustainability management and transversal skills), and which learning recognition and micro-credential processes and tools can be supported to accelerate and update the emerging green skills in the Labour Market systems. In turn, this will allow to better develop the *co-creation of micro-credential policy methodology* (WP3) that will be used to *roll-out the policy recommendation* (WP5), i.e., the MASTERY joint recommendations (D5.3) and the Guidelines for future MASTERY application (D5.4).