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EUROPEAN UNIVERSITY

Collaborative Efforts for Responsible Consumption and Production in the EU:

European University EURECA-PRO joins forces with UNIDO, JRC, DG GROW and DG EAC

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Executive Summary

On 12 June 2024, EURECA-PRO, the European University on Responsible Consumption and Production, brought together, in Brussels, representatives from the UNIDO, the JRC, the European Commission (DG GROW and DG EAC) and other associated partners. The main objective of this meeting was to share views, initiatives and insights on Sustainable Development Goal 12 (SDG 12), to find joint objectives for future collaboration and to elaborate a set of recommendations. The discussions highlighted significant potential to leverage each other's strengths as well as a shared commitment to addressing the complex and multifaceted sustainability challenges associated with societal transitions in Responsible Consumption and Production.

EURECA-PRO, a key player for the SDG 12.

The EURECA-PRO alliance is a key contributor to SDG12 on the European and global level. It addresses the industrial transition and the whole value chain. EURECA-PRO recognises the absolute necessity of addressing the broader societal implications of technological advancements.

The EURECA-PRO strategy is based on 5 challenges that serve to advance education, as a primary goal of the European Universities, but also research, innovation and citizen science:

1. Circular economy and natural resources management for sustainable materials
2. Just societal, multiscale transition towards sustainability and responsibility
3. Energy transition and sustainable energy management
4. Industry 4.0, including technology, organization and human perspectives towards responsible industry
5. Impacts of transitions on global health

The partners of the European university EURECA-PRO, together with socioeconomic stakeholders, contribute to cultivating value chains for EU industrial ecosystems to diminish dependency by relocating extraction and processing of resources, and increasing recycling and wastes reduction within the EU and developing the required competences: EURECA-PRO has developed a comprehensive set of 10 recommendations.

Recommendations.

1. Develop a Common Culture of Ecosystems: EURECA-PRO proposes to develop a common culture of stakeholders' ecosystems, ensuring that all stakeholders are equipped with the concepts and tools to facilitate learning within a transparent, well-defined, and sufficiently long-lasting strategic framework.

2. European degree: EURECA-PRO advocates for accelerating the convergence process toward a European degree to facilitate the development of innovative joint programs, culminating in a unique degree accredited at the European level and awarded by European University alliances.

3. Skill Transition: EURECA-PRO recommends strengthening the European strategic vision for skill transition, which is crucial for enabling consistent multilevel action at the European scale and beyond, by connecting to the international level. This involves providing all stakeholders with interdisciplinary knowledge, and conceptual and operational resources for a just and multi-level transition.

4. New academies: EURECA-PRO welcomes the implementation of raw materials and net-zero industry academies. EURECA-PRO proposes the establishment of a robust funding mechanism for skills academies. EURECA-PRO asks as well for more integrated interactions of these initiatives within the framework of European industrial policies, and in line of the actions developed by DG EAC within the framework of the European Initiatives.

5. Integration of SSH by design: EURECA-PRO advocates for the integration of Social Sciences and Humanities (SSH) into technology-oriented project and vice-versa projects within the framework of future Pillar 2 of the future FP10, in order to support the industrial policies.

6. Political alignment for R&I and Education development: EURECA-PRO recommends to aligning policies to foster the co-development of R&I and education in European universities to support major transitions and strategic autonomy.

7. Life cycle analysis: Implementing Life Cycle Analysis (LCA) and the principles of a circular economy is particularly crucial to meet the demand for critical and strategic raw materials, and to design complex, innovative products and processes. Thus, EURECA-PRO recommends developing research projects on the LCA methodology, including real-time LCA, as well as extensive training programs.

8. Circular Economy Framework: These recommendations require a holistic European approach. This includes political leadership and a strengthened co-decision capacity between the Commission's Directorates General to implement research and innovation (DG RTDR&I) and the skills required within European policies (DG EAC).

9. Support for new partnerships: EURECA-PRO welcomes the implementation of raw material and advanced material partnerships as a first step towards greater strategic autonomy for the EU and wishes to contribute to joint R&D and education.

10. Sustainable extraction of resources: EURECA-PRO welcomes the EU's initiatives to increase security of supply with mineral and energy raw materials. Therefore, another important approach is to enable fair competition through supply chain responsibility. EURECA-PRO recommends improving the conditions in the EU for investments in raw material projects, in particular through appropriate prioritization as part of public precaution in approval procedures, which should also be carried out unbureaucratically and quickly.

Detailed position paper

On 12 June 2024, EURECA-PRO, the European University on Responsible Consumption and Production, brought together, in Brussels, representatives from the UNIDO, the JRC, the European Commission (DG GROW and DG EAC) and other associated partners. The main objective of this meeting was to share views, initiatives and insights on Sustainable Development Goal 12 (SDG 12), to find joint objectives for future collaboration and to elaborate a set of recommendations. The discussions highlighted significant potential to leverage each other's strengths as well as a shared commitment to addressing the complex and multifaceted sustainability challenges associated with societal transitions in Responsible Consumption and Production.

EURECA-PRO, a key player for the SDG 12

The EURECA-PRO alliance is a key contributor to SDG12 at the European and global level. It addresses the industrial transition and the whole value chain of raw materials (sustainable extraction, processes, circularity) from a holistic and social perspective, bringing together not only the expertise needed to address the technological challenges for the sustainable transition of the production life cycle, but also the deep necessary deep knowledge of how the consumption dimension interacts with and influences this cycle. EURECA-PRO recognises the absolute necessity to address the broader societal implications of technological progress beyond mere innovation, and thus to develop multidisciplinary and interdisciplinary approaches. As such, EURECA-PRO is building its strategy to support populations through transitions and industrial transformation that require social transformation within existing European frameworks (e.g. Green Deal, Net-Zero Industry Act, Pact for Skills), thus contributing to the strategic autonomy of the EU. This seminar also opened up perspectives for developing an international strategy in conjunction with UNIDO.

The EURECA-PRO strategy is based on 5 strategic challenges that serve to advance education, as a primary goal of the European Universities, but also research, innovation and citizen science:

1. Circular economy and natural resources management for sustainable materials
2. Just societal, multiscale transition towards sustainability and responsibility
3. Energy transition and sustainable energy management
4. Industry 4.0, including technology, organization and human perspectives towards responsible industry
5. Impacts of transitions on global health

The present contribution and the subsequent set of recommendations is made in a context of enhancing strategic autonomy, particularly regarding supply chain and raw material dependencies (enacted in the Critical Raw Materials Act - 2023). The partners of the European university EURECA-PRO, together with socioeconomic stakeholders, contribute to cultivating value chains for EU industrial ecosystems to diminish dependency by relocating extraction and processing of resources, and increasing recycling and wastes reduction within the EU and developing the required competences.

[1]UNIDO: United Nations Development Organization
[2]JRC : Joint Research Centre of the European Commission
[3]DG GROW: Internal Market, Industry, Entrepreneurship and SMEs
[4]DG EAC : Education, Youth, Sport and Culture

Insights on SDG12 from major international and European stakeholders

UNIDO's Representative to the EU emphasised UNIDO's role in promoting the green transition, by integrating energy policy with overall industrial policy. The objectives identified as priorities include securing the supply of raw materials, promoting a circular economy, achieving deep industrial decarbonization, and implementing hydrogen technology. Sustainable consumption and production are the main drivers behind finding solutions and promoting the building of resilient and sustainable supply chains to meet resource needs.

The JRC, in particular its unit for Sustainable Resources and Supply Chain Management, provides evidence-based support to EU policies to positively impact society as regards sustainable resource use. Its strength is to consider the economics, environmental, and social footprints from a systemic perspective. A key focus is on enhancing resource efficiency and promoting a circular economy by optimizing resource use, reducing waste, and encouraging recycling. Consequently, raw material issues are addressed alongside soil health and ecosystem services, with life cycle assessment helping to identify trade-offs. The unit prioritizes business models for the circular economy, establishing a universal understanding of a sustainable lifestyle, and developing a raw material information system that considers natural capital and consumption footprint evaluations. By fostering innovation and growth across various sectors, and through supporting research and technological development, the unit aims to create sustainable industrial processes that are decoupled from environmental impact. Additionally, the JRC collaborates with international partners to address common challenges in sustainable resource management and supply chains.

DG GROW's unit on Energy Intensive Industries and Raw Materials focuses on ensuring secure and sustainable supply chains for the EU's green and digital technologies. This is exemplified by the recent Critical Raw Materials Act, which outlines objectives to diversify supply chains, enhance resilience, mitigate risks of disruption, and improve the circularity and sustainability of critical raw materials while safeguarding the environment. Achieving these objectives requires investment in research, innovation, and skills development to strengthen EU's sovereignty over the raw material supply chain and facilitate the production of advanced materials essential for the twin transition.

DG EAC's unit on Higher Education emphasized its commitment to developing new Joint European Degrees. The most important factor is not only the excellence of the programs, but also to ensure that they are delivered based on quality assurance criteria and are jointly designed. Additionally, these programs must support the further implementation of the Bologna Process, promote mutual recognition, and convey European values such as democracy,

multilingualism, and sustainability. From a student's perspective, it is crucial that these programs clearly reflect the relevance of the learning experience. The joint programs, co-designed and co-operated, must be student-centred, address the needs of the labour market, and incorporate interdisciplinary and mobility components. This approach ensures that students are well-prepared to face the societal challenges posed by the transition to sustainability.

Recommendations

1. Develop a Common Culture of Ecosystems: EURECA-PRO proposes to develop a common culture of stakeholders' ecosystems, ensuring that all stakeholders are equipped with the concepts and tools to facilitate learning within a transparent, well-defined, and sufficiently long-lasting strategic framework. This approach encompasses collaboration, emergence, agility, and multi-level action, structured across regional, interregional, national, and European levels, to align with and reinforce strategic priorities, ensuring the strategic sovereignty of Europe's industrial sector. Achieving this demands European partnerships that unite industry and academia while leveraging existing territorial, national, and European ecosystems. Regional ecosystems, where universities play a key role in strategic areas, must be integrated into a broader European framework to strengthen interconnections between these ecosystems. This will enable a coherent response to the challenges facing Europe's strategic and industrial sectors, promoting innovation and developing expertise in transitioning to sustainable technologies and approaches as key drivers of competitiveness.

2. European degree: EURECA-PRO advocates for accelerating the convergence process toward a European degree to facilitate the development of innovative joint programs, culminating in a unique degree accredited at the European level and awarded by European University alliances. This would involve adopting a common European degree with a unified legal framework across all countries, eliminating national legal barriers. These programs should emphasize interdisciplinarity, student mobility, and the exchange of best practices in pedagogical tools and quality assurance.

EURECA-PRO recommends designing pan-European educational programs that award a European degree with approaches to train graduates who will not only be highly skilled in their specific fields of expertise but will also possess a broad and systemic competence portfolio. These programs should include digital era skills, the ability to address sustainability challenges systemically, and the expertise to collaborate across European, linguistic, cultural, and disciplinary boundaries to facilitate the green transition successfully.

3. Skill Transition: EURECA-PRO recommends strengthening the European strategic vision for skill transition, which is crucial for enabling consistent multilevel action at the European scale and beyond, by connecting to the international level. This involves providing all stakeholders with interdisciplinary knowledge, and conceptual and operational resources for a just and

multi-level transition. This means helping companies build effective business models for transition and adopt skills management geared toward SDG 12 and models of learning organizations capable of anticipating and managing future skill needs. It also means helping individuals, students, and employees develop key skills for the transition and maintain their employability: learning to learn, solving problems, teamwork, and negotiation skills.

EURECA-PRO recommends that future graduates from joint programs developed by European University alliances possess a systemic perspective, the ability to envision and to drive transformation. With the right mindset and skill set, graduates will be better equipped to secure jobs and careers that align with their aspirations and the evolving needs of the labour market, thereby contributing to a just transition. In this regard, EURECA-PRO welcomes the vision presented in Draghi's report (September 2024), which advocates for "a common certification system at the EU level... so that the skills acquired through training programs are easily understandable by potential employers across the EU."

4. New academies EURECA-PRO welcomes the implementation of raw materials and net-zero industry academies. In the context of the upcoming Union of Skills, which aims to contribute to the development of strategic priorities, including industrial sectors, EURECA-PRO proposes the establishment of a robust funding mechanism for skills academies. These academies would support skill development at various levels—workers, employees, engineers, and PhD students—in the previously mentioned fields, addressing both upskilling and reskilling needs. These academies should be driven by the demands and proposals for skills emerging from European partnerships that bring together industry and academia, including European Universities in the field of industrial transition (e.g., raw materials, advanced materials, decarbonization, digitalization, Industry 4.0, sustainable development, corporate social responsibility).EURECA-PRO asks as well for more integrated interactions of these initiatives within the framework of European industrial policies, and in line of the actions developed by DG EAC within the framework of the European Initiatives.

5. Integration of SSH by design: EURECA-PRO advocates for the integration of Social Sciences and Humanities (SSH) into technology-oriented project and vice-versa projects within the framework of future Pillar 2 of the future FP10, in order to support the industrial policies. This mechanism anticipates the societal transformations accompanying the current major transitions. The aim is to have a dedicated window, transversal to all Horizon Europe clusters, offering open calls for projects to address major issues related to current transitions (energy, raw material, circular economy, impact of the transitions on global health). Projects led primarily by SSH actors and co-led by SSH and Science, technology, engineering, and mathematics (STEM) actors could lead to societally implementable transdisciplinary and interdisciplinary solutions. The preliminary establishment of a Coordination and Support Action (CSA) to identify transdisciplinary challenges and research directions, in the fields of the major transitions (energy, industrial, ecological, societal, European) could be a great added value.

6. Political alignment for R&I and Education development: EURECA-PRO recommends aligning policies to foster the co-development of R&I and education in European universities, which would be a first step towards strengthening the integrated European Higher Education system, to support major transitions, strategic autonomy, industrial policies and more globally as the key to reaching competent and conscientious European citizens.

7. Life cycle analysis: It is becoming essential to assess the environmental impact of technological products and processes using Life Cycle Analysis (LCA). Implementing recycling and the principle of a circular economy is particularly crucial to meet the demand for critical and strategic raw materials, and to design complex, innovative products and processes. This approach aims to balance functionality and circularity while ensuring carbon neutrality. Thus, EURECA-PRO recommends developing research projects on the LCA methodology, including real-time LCA, as well as extensive training programs.

8. Circular Economy Framework: this approach only makes sense if it is done within the framework of a holistic European approach. This includes political leadership and a strengthened co-decision capacity between the Commission's Directorates General to implement research and innovation (DG RTDR&I) and the skills required within European policies (DG EAC), particularly for raw materials and the circular economy, which are the basis of industrial sectors.

9. Support for new partnerships: EURECA-PRO welcomes the implementation of raw material and advanced material partnerships as a first step towards greater strategic autonomy for the EU and wishes to contribute to their implementation at the alliance level and to deliver in terms of joint R&D and education.

10. Sustainable extraction of resources: EURECA-PRO welcomes the EU's initiatives to increase security of supply with mineral and energy raw materials. Without raw materials, megatrends such as the Green Deal, the transformation of the energy sector or digitalization are not possible. A central element is more raw material extraction, preparation, processing and recycling in Europe.

Europe still has a high raw material potential as well as competence and technology for the highest global safety and environmental standards. However, the latter makes production more expensive and is a cause of import dependency. Therefore, another important approach is to enable fair competition through supply chain responsibility.

EURECA-PRO recommends improving the conditions in the EU for investments in raw material projects, in particular through appropriate prioritization as part of public precaution in approval procedures, which should also be carried out

unbureaucratically and quickly. Suitable financing models must be supported for high-risk deposit exploration. Investments in training, research programs and innovations in the raw materials sector must be promoted. Minimum standards must be defined and monitored for supply chains of imported raw materials, particularly for safety, health, occupational safety and environmental protection. Labelling products whose raw materials come from the EU can increase consumers' sensitivity to clean, safe and local production. In general, raw material awareness should be increased as part of social communication and school education.

EURECA-PRO partner universities:

Montanuniversität Leoben (Austria)
Universidad de León (Spain)
TU Bergakademie Freiberg (Germany)
Polytechneio Kritis (Greece)
Universitatea din Petroşani (Romania)
Hochschule Mittweida (Germany)
Politechnika Śląska (Poland)
Universiteit Hasselt (Belgium)
Université de Lorraine (France)

European University on Responsible Consumption and Production

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