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ERASMUS+ Workshop: Higher Education and Greening in Algeria and Lebanon 20-21 November 2024

Strategic Directions and Actionable Recommendations

Introduction

This document provides an overview of the "Higher Education and Greening in Algeria and Lebanon" workshop held on November 20–21, 2024, and consolidates its strategic directions and actionable recommendations. The workshop highlighted the transformative role of Higher Education Institutions (HEIs) in driving sustainability through greening initiatives, bringing together expert presentations, interactive discussions, and collaborative reflections.

Rooted in expert presentations, interactive discussions, and collaborative reflections, the strategic directions focus on key themes vital for embedding sustainability into higher education. These include Higher Education for Greening: A Systemic and Shared Responsibility, emphasizing the interconnected roles of institutions in driving transformative change; Transformative Curriculum Design for Greening, advocating for embedding sustainability into teaching and learning; Transformative Research for Greening, highlighting interdisciplinary and action-oriented approaches; Greening as a Social Justice Imperative, addressing equity and inclusivity in sustainability efforts; and Institutional Policies for Greening, offering a framework for policy reform and alignment with global sustainability goals.

The actionable recommendations, derived from the strategic directions, focus on six key areas to guide HEIs, policymakers, and stakeholders. These include Policy Alignment and Institutional Reform to ensure alignment with sustainability goals; Capacity Building and Engagement to empower faculty, students, and communities; Curricular Integration to embed holistic and experiential learning practices; Collaborative Networks to foster partnerships across sectors and regions; Resource Optimization and Financial Support to sustain greening initiatives; and Innovative Research for Greening to drive impactful research.

Together, the directions and recommendations are meant to form a comprehensive and flexible roadmap for leading equitable, scalable, and impactful greening efforts within and beyond higher education systems.

Overview of the Workshop's Context and Rationale

The workshop recognized the pivotal role of Higher Education Institutions (HEIs) in advancing sustainable development through greening initiatives. Organized under the framework of the Erasmus+ National Higher Education Reform Experts (HERE) teams in Algeria and Lebanon, the event aimed to support HE reform initiatives in these countries by institutionalizing sustainability-driven greening practices.

As a crucial pathway to sustainability, greening addresses environmental, social, and economic challenges by promoting responsible practices such as energy efficiency, resource conservation, and waste reduction. In higher education, greening integrates sustainability principles across campus operations, curricula, research, and community engagement. These efforts align with global frameworks like the UN Sustainable Development Goals (SDGs) and the European Green Deal (EGD), equipping students with the knowledge and skills to contribute to green innovation and sustainability in their personal and professional spheres.

The workshop convened international experts as well as HE stakeholders and policymakers from Algeria, Lebanon, Tunisia, and Jordan to share insights on greening opportunities and challenges, explore synergies between local and European strategies, and develop actionable solutions. Its hybrid format ensured inclusivity and broad engagement, fostering collaboration at national, regional, and international levels. Through diverse activities—keynote addresses, panel discussions, and interactive sessions—the webinar sought to: (a) Identify gaps in environmental policies within HEIs to support greening efforts; (b) Define HEIs' roles in addressing greening challenges; (c) Enhance collaboration to share best practices; (d) Innovate curricula and research to promote sustainability leadership among students; and (e) Strengthen partnerships among HEIs, governments, industries, and communities.

Strategic Directions for Greening in Higher Education

Higher Education for Greening: A Systemic and Shared Responsibility

- **Recognizing the Limitations of Education as a Sole Solution.** While education plays a critical role in raising awareness, fostering skills, and shaping attitudes, it cannot single-handedly address the systemic issues underlying environmental and sustainability challenges. Placing the burden of accountability solely on the educational sector diverts attention from the broader societal and structural reforms that are essential. A systemic and holistic approach is required—one that emphasizes the interconnectedness of political, economic, and cultural dimensions. The Sustainable Development Goals (SDGs) provide a valuable framework for this approach by highlighting the integration of multiple dimensions of sustainability.
- **Reframing the Role of Higher Education Institutions (HEIs).** HEIs must transition from conservation actors to change agents by fostering transformative education and research that address greening challenges. Aligning institutional missions with

sustainability goals ensures that universities actively contribute to systemic change. HEIs should integrate greening into their mission and vision, reflected in comprehensive plans that include greening infrastructure, such as solar panels and wastewater management, alongside awareness campaigns on water, waste, and energy conservation.

- **The Third Mission of Universities and Shared Accountability.** The Third Mission of universities—engaging with society to foster social, economic, and environmental progress—offers a natural framework for advancing greening initiatives in higher education. By collaborating with communities, industries, and governments, universities can co-create solutions to sustainability challenges, bridging academic expertise with practical implementation. This mission aligns with the goals of greening, as it drives innovation, equity, and systemic change through partnerships and knowledge exchange. Moreover, greening amplifies the Third Mission's impact by addressing cross-cutting priorities outlined in the SDGs. While SDG 4 (Quality Education) remains central to universities' roles, greening initiatives enable broader contributions, including promoting sustainable urban development (SDG 11), combating climate change (SDG 13), and reducing inequalities (SDG 10). This synergy underscores universities' unique capacity to lead transformative efforts toward sustainability at local and global levels.
- **Fostering Synergies Across Universities.** Universities should enhance collaboration with other HEIs. Such partnerships ensure holistic approaches to greening, addressing complex issues like the failures of "Green Capitalism", which often prioritizes profit over genuine sustainability. By fostering global dialogue, these partnerships can drive transformative initiatives that balance economic growth with environmental and social equity. Examples include the European University Alliance for Sustainability, which creates platforms for dialogue and establishes education hubs that integrate research, innovation, and shared resources to address global greening challenges.

Transformative Curriculum Design for Greening

- **Embedding Greening into Curricula.** Universities should incorporate greening across disciplines, align courses with the SDGs, and offer competency-based programs, internships, and entrepreneurship opportunities focused on greening. Curricula should include real-world applications, such as green mobility initiatives and student-led projects to build environmental stewardship.
- **Transformative Learning and Epistemology Interplay.** Greening in higher education aligns closely with transformative learning, which encourages learners to critically reflect on their assumptions, challenge dominant paradigms, and reimagine their roles in promoting sustainable development. Transformative learning fosters profound shifts in perspective, enabling individuals to creatively and equitably address complex global challenges. Central to this approach is the role of epistemology—the study of knowledge—since foundational beliefs about knowledge

shape how education systems define and evaluate "quality" in the realms of sustainability. By advancing epistemic justice, transformative education values marginalized knowledge systems and integrates diverse perspectives into greening discourse. This holistic approach influences policies and governance structures at the macro level while shaping teaching practices and learning experiences at the micro level.

- **Interdisciplinary Curriculum Design.** To foster greening in higher education, curricula should emphasize interdisciplinarity by integrating knowledge and approaches from diverse fields into teaching, learning, and assessment practices. Courses should address complex environmental challenges by combining perspectives from science, technology, social sciences, humanities, and the arts, promoting systems thinking and holistic problem-solving. Assessment strategies should focus on real-world applications, such as project-based learning and collaborative assignments that tackle sustainability issues. Additionally, competency-based assessments should evaluate students' ability to synthesize knowledge across disciplines and apply it to greening initiatives, fostering an appreciation for the interconnectedness of environmental, social, and economic systems.
- **Experiential Learning and Reflection.** The experiential learning cycles offer powerful frameworks for integrating greening into education by connecting theory to practice. Engaging students in hands-on, real-world sustainability projects—such as campus greening initiatives or community-based environmental programs—can foster active participation and skill development. Reflection, a cornerstone of experiential learning, should be prioritized to help students critically analyze their experiences, identify lessons learned, and deepen their commitment to sustainable greening practices. Through this iterative process of experience, reflection, and application, students are empowered to internalize greening principles and apply them meaningfully in their personal and professional lives.
- **Promoting Cognitive, Affective, and Behavioral Change.** Fostering attitudinal change at the cognitive, affective, and behavioral levels is essential for embedding greening in higher education. Curriculum design should integrate learning outcomes that encourage students to develop a deep understanding of sustainability concepts (cognitive), cultivate pro-environmental values and empathy toward ecological challenges (affective), and engage in actionable, sustainable practices (behavioral). Assessment strategies should align with these domains, measuring not only knowledge but also the capacity for emotional connection and the ability to implement sustainable solutions. By addressing attitudes holistically, higher education institutions can cultivate graduates who are prepared to lead and advocate for environmental stewardship within their communities.

Transformative Research for Greening

- **Promoting Interdisciplinary Research.** Higher education institutions should promote interdisciplinary research to advance greening efforts. Collaborative research initiatives that bring together expertise from fields such as environmental

science, engineering, economics, sociology, and policy studies are essential for addressing the multifaceted nature of sustainability challenges. HEIs should establish dedicated research centers and networks, develop funding opportunities, and align their research priorities with global sustainability goals, ensuring actionable outcomes like sustainable urban designs and innovative greening technologies.

- **Action Research for Localized and Scalable Initiatives.** Action research, with its collaborative, participatory, and iterative nature, is particularly well-suited for addressing multifaceted challenges like greening. By involving diverse stakeholders and emphasizing practical, context-specific solutions, it has the potential to create meaningful and localized change. To overcome its potential limitation in scalability, action research can adopt strategies that bridge local relevance and broader impact. Frameworks for sharing insights and best practices across contexts, such as open-access platforms and collaborative networks, can enable other communities to adapt successful interventions. Additionally, meta-analyses of multiple localized studies can identify transferable patterns and principles. Integrating action research with methodologies like systems thinking or quantitative research can provide macro-level insights and validate localized findings, contributing to global greening efforts while maintaining a grassroots focus.

Greening as a Social Justice Imperative

- **Critically Examining Greening Frameworks.** Universities play a vital role in dissecting and challenging the foundations of global greening policies, which are often shaped by industrialized nations and may marginalize or disadvantage the Global South. These frameworks can perpetuate inequities by prioritizing profit-driven agendas or technological solutions that overlook local contexts and resources. By embedding critical analysis into curricula and research, universities can expose hidden power dynamics and encourage the development of context-sensitive, equitable approaches to sustainability. This might include exploring how policies like carbon trading or international environmental agreements disproportionately benefit wealthier nations while placing undue burdens on less developed regions.
- **Addressing Inequities in Greening Practices.** Global greening efforts, while well-intentioned, can unintentionally reinforce inequalities by privileging wealthier nations and corporations in their implementation. For instance, renewable energy projects may lead to land dispossession or resource exploitation in marginalized communities, such as lithium mining in the Global South for electric vehicle batteries. Universities should equip students and researchers with the tools to analyze these dynamics critically, advocating for fairer and more inclusive environmental policies. Case studies on renewable energy, sustainable agriculture, and other initiatives can provide concrete examples of how greening practices impact different populations, helping students and scholars identify and promote solutions that prioritize equity.
- **Positioning Marginalized Perspectives.** Incorporating traditional ecological knowledge (TEK) and amplifying the voices of underrepresented communities enables universities to foster epistemic justice—valuing diverse knowledge systems

and perspectives. TEK, rooted in indigenous and local traditions, offers sustainable practices that have been developed through generations of lived experience. For example, rotational farming methods or water management systems used by indigenous groups often provide environmentally friendly solutions overlooked by mainstream practices. Participatory research and inclusive curricula allow HEIs to integrate these perspectives into their teaching and research, ensuring that greening efforts reflect the values, knowledge, and needs of diverse communities. This approach not only enriches sustainability efforts but also addresses historical imbalances in whose knowledge is deemed valid or valuable.

Institutional Policies for Greening

- **Developing Comprehensive Greening Policies.** HEIs should align their greening plans with local needs while addressing global goals. Policies must address structural barriers, such as resource shortages and governance challenges, by adopting green deal roadmaps that prioritize local priorities over donor-driven agendas. Evidence-based, context-specific strategies aligned with global frameworks like the SDGs can ensure long-term effectiveness. Integrating local priorities and fostering coordination between governments and institutions, combined with regular evaluation and stakeholder engagement, promotes adaptability, equity, and accountability.
- **Funding and Resources for Greening Projects in Higher Education.** Effective policies must be supported by sustainable funding and resource management strategies. Sustainable greening projects in higher education require diverse funding, efficient resource allocation, and robust accountability. Universities can leverage grants, partnerships, and innovative mechanisms while integrating greening into institutional budgets to prioritize sustainability cost-effectively. Transparent reporting, stakeholder engagement, and measurable impact evaluations build trust, attract investment, and ensure long-term success.

Actionable Recommendations for Practical Implementation

Policy Alignment and Institutional Reform

- **Develop Comprehensive Greening Policies.** Establish institutional greening frameworks aligned with local needs and global sustainability frameworks, such as the SDGs, to guide HEIs in implementing sustainability initiatives.
- **Integrate Greening into University Missions and Visions.** Ensure institutional policies explicitly prioritize sustainability, including infrastructure changes like renewable energy adoption and waste reduction programs.
- **Strengthen Regulatory Frameworks.** Advocate for stricter environmental regulations to ensure accountability for sustainability practices across HEIs.

Capacity Building and Engagement

- **Train Faculty and Staff on Sustainability.** Organize workshops and training programs to enable faculty and staff to incorporate sustainability into teaching, research, and campus operations.
- **Engage Students in Green Leadership.** Implement extracurricular activities and student-led projects that promote sustainability, such as energy audits, green campus design, and waste management.
- **Enhance Community Partnerships.** Foster community engagement by creating partnerships with local organizations to co-design and implement sustainability initiatives.

Curricular Integration

- **Embed Holistic Learning Outcomes.** Develop curricular outcomes that integrate **cognitive** (critical and systems thinking), **affective** (values and ethical responsibility), and **behavioral** (practical implementation) domains to drive greening-focused education aligned with sustainability objectives.
- **Implement Competency-Based Greening Programs:** Create programs ensuring graduates possess measurable competencies in applying greening knowledge, solving practical environmental challenges, and demonstrating values consistent with global greening goals.
- **Design Disciplinary and Interdisciplinary Experiential Learning:** Develop hands-on greening learning experiences within and across disciplines, guided by the experiential learning cycle—concrete experience, reflective observation, abstract conceptualization, and active experimentation—to foster a practical and systemic understanding of greening principles.
- **Promote Transformative Learning Through Critical Reflection:** Facilitate immersive experiences, such as engaging with Indigenous communities or leading climate adaptation efforts, to inspire critical reflection on greening paradigms and cultivate long-term commitment to environmental stewardship.

Collaborative Networks

- **Enhance Knowledge Exchange.** Build equitable partnerships with universities and local communities to share knowledge, tools, and resources. Prioritize inclusive approaches that respect underrepresented perspectives and promote context-sensitive sustainability solutions.
- **Establish Local, Regional, and Global Alliances.** Create structured platforms for HEIs to collaborate on large-scale greening initiatives. Facilitate the sharing of best practices, foster interdisciplinary research, and co-develop sustainability frameworks to address regional and global challenges.
- **Engage Industry and Government Stakeholders.** Promote cross-sector partnerships to bridge resource gaps, drive innovation, and implement practical

solutions. Focus on integrating HEI expertise with industry capabilities and government support to achieve scalable and impactful sustainability outcomes.

Resource Optimization and Financial Support

- **Secure Diverse Funding Sources:** Explore grants, public-private partnerships, and institutional budgets to ensure financial sustainability for greening projects.
- **Implement Transparent Reporting Systems:** Develop accountability measures for resource allocation and the environmental impact of HEI greening initiatives.
- **Promote Green Technology Innovation:** Invest in research and development of low-impact technologies that reduce HEIs' ecological footprints.

Innovative Research for Greening

- **Establish Interdisciplinary Research Centers:** Create HEI research centers integrating expertise from multiple disciplines to tackle challenges like climate adaptation, renewable energy, and sustainable urban design.
- **Align Research with Sustainability Goals:** Develop research agendas supporting the SDGs and local needs, prioritizing scalable solutions and ensuring projects contribute directly to actionable sustainability objectives
- **Promote Collaborative Action Research:** Engage faculty, students, and stakeholders in participatory action research to co-develop context-specific, scalable greening solutions.
- **Build Knowledge Networks and Open-Access Platforms:** Foster local, regional, and international research collaboration and create platforms to share findings, enabling adaptation and replication of successful greening interventions.
- **Integrate Various Research Approaches.** Combine participatory research with systems thinking and meta-analyses to generate macro-level insights and scalable principles while maintaining local relevance.

Conclusion

The recommendations outlined in this document present a cohesive yet flexible framework for embedding greening into higher education systems. They signify a structured set of goals and strategies that can be adapted to institution-specific contexts or translated into detailed operational mechanisms. By aligning institutional policies, fostering interdisciplinary collaboration, and integrating sustainability into teaching, research, and community engagement, HEIs can become catalysts for transformative change.

This adaptability ensures the actionable steps empower stakeholders to address local and global sustainability challenges effectively while accommodating unique institutional needs. The recommendations emphasize long-term impact through innovation, inclusivity, and accountability, providing a pathway for HEIs to lead meaningful change. This collective effort will position HEIs in Algeria, Lebanon, and beyond as vital agents of sustainable development and environmental stewardship.