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INTEGRATING ESG PRINCIPLES INTO ENVIRONMENTAL EDUCATION: OPPORTUNITIES AND CHALLENGES IN THE MENA REGION

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ABSTRACT

The Middle East and North Africa (MENA) region grapples with pressing environmental challenges such as water scarcity, desertification, and climate change. However, within these challenges lies the potential for sustainable development. A paradigm shift in environmental education for sustainable development is imperative to address these issues effectively. Environmental education plays a crucial role in instilling resilience in the face of climate change and natural disasters that increasingly impact the region.

Redefining EE through Environmental, Social, and Governance (ESG) can act as a catalyst for positive change. Integrating ESG principles into education empowers citizens not only to understand environmental issues but also to lead sustainable lives and contribute to the sustainable development goals (SDGs). Accessibility to environmental education should be universal, transcending gender, socioeconomic status, and geographical location. Leveraging technology and digital platforms can significantly enhance the reach and impact of environmental education.

Methodologically, this article employs a conventional literature review approach, conducting a desktop research to comprehensively examine the existing body of publications related to environmental education for sustainable development in the MENA region. The review explores current environmental educational approaches applied to achieve sustainable development in the MENA region. Subsequently, it introduces alternative approaches that leverage ESG principles consistent with the Sustainable Development Goals, aiming to redefine the current status quo.

The article concludes by emphasizing the need for a paradigm shift in environmental education in the MENA region through the integration of ESG

principles into the curriculum, promotion of collaborative governance and inclusivity, the region can nurture a new path of environmentally conscious citizens poised to contribute to sustainable development.

Keywords: Education, Curriculum, Environment, Transformation, MENA, Sustainability, ESG.

1. INTRODUCTION

“Despite decades of reforms, all MENA countries, irrespective of their geography, demography, or economy, harbor untapped education potential.... This transformation entails addressing deeply entrenched social norms, implementing reforms that extend beyond the education system, and fostering alignment of interests among all stakeholders.” (Safaa El Tayeb El-Kogali, World Bank MENA Education Practice Manager, 2018).

The above resonant call extends beyond traditional educational reforms, pointing toward a comprehensive reimagining of education. The Middle East and North Africa (MENA) region stands at a crossroads. Its arid landscapes, rich cultural heritage, and burgeoning populations face a multitude of environmental challenges, from water scarcity and desertification to pollution and biodiversity loss¹. These issues threaten not only the region's natural resources but also its long-term economic stability and social well-being². In this context, environmental education (EE) emerges as a critical tool for shaping a sustainable future for the MENA region. MENA's environmental vulnerability is stark as the region boasts the highest water stress in the world, with over 60% of its population living in water-scarce countries³. Rapid urbanization and unsustainable agricultural practices exacerbate water

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¹ Olawuyi DS (ed), *Climate Change Law and Policy in the Middle East and North Africa Region* (Routledge 2021).

² Giovanis, E., Ozdamar, O., 'The Impact of Climate Change on Budget Balances and Debt in the Middle East and North Africa (MENA) Region' (2022) 172 *Climatic Chang*

³ Lange, M. A., 'Extreme Climate Changes in the MENA Region: Their Impacts and Effective Adaptation Strategies', presented at EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-4991 <https://doi.org/10.5194/egusphere-egu23-4991> (2023)

scarcity, jeopardizing food security and economic growth⁴. Additionally, desertification consumes fertile land at an alarming rate, displacing communities and disrupting ecosystems⁵. As the region grapples with these issues, the need for effective environmental education for sustainable development becomes increasingly urgent.

The challenges facing the region are not merely environmental; they are deeply entwined with social, economic and governance issues. Resource depletion threatens livelihoods, fuels tensions, and disrupts regional stability⁶. As UNEP aptly asserts, "Environmental degradation and resource scarcity in the Arab region are major security concerns"⁷. In this context, equipping citizens with the knowledge, skills, and values to navigate these complex challenges becomes fundamental. Environmental education, as a catalyst for positive change, holds the potential to empower individuals and communities to address these challenges and contribute to the broader global goals of sustainable development⁸. This intrinsic link between EE and sustainable development, the pursuit of progress that meets the needs of the present without compromising the ability of future generations to meet their own⁹, is particularly crucial for MENA.

The region's unique environmental challenges demand transformative solutions, and EE lays the groundwork for this innovation. In recent years, the MENA region has witnessed various environmental education initiatives aimed at fostering a deeper understanding of ecological issues and promoting

⁴ Hejazi M and others, 'Impacts of water scarcity on agricultural production and electricity generation in the Middle East and North Africa' (2023) 11 *Frontiers in Environmental Science*

⁵ Lange (n 3)

⁶ Ahmad, A. and Ranade, M., *Climate Responsive Economic Recovery: Post-Pandemic Opportunities in Mashreq* (2021) <https://doi.org/10.1596/36268>.

⁷ *Climate Change, Environmental Degradation, Conflict, and Displacement in the Arab States Region* (UNDP, 2023) https://www.undp.org/sites/g/files/zskgke326/files/2023-06/climate_environmental_security_rbas_policy_brief_may_2023.pdf

⁸ Owojori OM, Mulaudzi R, Edokpayi JN, 'Student's Knowledge, Attitude, and Perception (KAP) to Solid Waste Management: A Survey Towards a More Circular Economy from a Rural-based Tertiary Institution in South Africa' (2022) *Sustainability* 14(3) 1310.

⁹ World Commission on Environment and Development, *Our Common Future* (1987) 17(1) 1-91.

⁹ World Commission on Environment and Development, *Our Common Future* (1987) 17(1) 1-91.

sustainable practices. However, the effectiveness of these initiatives remains a subject of scrutiny, with persistent challenges hindering their impact. These challenges include a lack of integration of environmental principles into mainstream education, insufficient engagement with diverse communities, and inadequate alignment with social sustainability frameworks¹⁰. There is a pressing need to reassess and redefine environmental education approaches in the MENA region to address these challenges effectively. By doing so, we can harness the potential of education to instil values, knowledge, and skills that empower individuals to become stewards of the environment and active contributors to sustainable development. By fostering a sense of environmental stewardship, EE can bridge societal divides, promote social justice, and contribute to regional stability¹¹. In a region where resource scarcity often fuels conflict, EE can equip communities with the tools to collaborate and build a more equitable future. A global perspective fostered by EE, empowers communities to address regional challenges and contribute to the broader goals of sustainable development, as outlined in the UN's Sustainable Development Goals (SDGs)¹². Additionally, EE must be tailored to the specific needs and contexts of different regions and cultures. Recognizing the intricate relationship between environmental education and sustainable development, this research seeks to critically examine existing approaches and propose transformative pathways to redefine environmental education in the MENA region. This calls for a holistic approach that integrates environmental, social, and governance (ESG) considerations. EE, with its focus on fostering environmental literacy, critical thinking, and responsible action, aligns seamlessly with this vision. By equipping individuals with the knowledge and skills to understand complex environmental challenges and develop sustainable solutions¹³.

There is a growing recognition of the interconnectedness between environmental sustainability, social responsibility, and corporate governance, as well as the imperative to address pressing global challenges such as climate

¹⁰ El-Kogali, Safaa El Tayeb, and Caroline Krafft (eds), *Expectations and Aspirations: A New Framework for Education in the Middle East and North Africa* (World Bank Publications, 2019).

¹¹ Amin R, Nath H, 'Environmental Justice and Education: Bridging the Gap between Ecology, Equity, and Access' (2023) *Journal of Advanced Zoology* 44.

¹² United Nations, Sustainable Development Goals <https://sdgs.un.org/goals> (accessed 10th January 2024).

¹³ Esquer, J., Munguia, N., Velazquez, L., 'Increasing Young People's Environmental Awareness' in *The Palgrave Encyclopedia of Urban and Regional Futures* (Springer International Publishing, 2023) 904-913.

change, social inequality, and ethical business practices¹⁴. Regulatory bodies and policymakers around the world are also taking steps to promote ESG considerations. For instance, this trend can be observed in the increasing integration of ESG metrics into investment decisions which underscores the growing recognition among investors of the importance of incorporating ESG factors into their decision-making processes¹⁵. In recent years, the MENA region has witnessed a significant rise in ESG concerns driven by the global shift towards the recognition of the long-term benefits associated with ESG integration.

Developments are indicating the significance of ESG considerations in fostering sustainable development, for example, nearly three-quarters of MENA banks have developed ESG strategies, emphasizing the significance of ESG factors in the banking sector¹⁶. Additionally, institutions like the Islamic Development Bank are incorporating environmental and social considerations to promote ethical investments while adhering to the Shariah guidelines¹⁷, signalling a growing awareness of the importance of ESG considerations in the region's financial sector. Likewise, a report by Azeus Convene on "The State of ESG Reporting in the Middle East" examines the evolving landscape of ESG reporting in the MENA region, highlighting the shift from limited awareness to a growing emphasis on transparency and accountability.¹⁸

These principles extend beyond the corporate sector; they hold equal significance in education. Embedding ESG concepts into classroom instruction entails integrating subjects concerning environmental sustainability, social justice, and ethical governance into the curriculum. Consequently, studies conducted by local research organizations like the

¹⁴ Eccles, R.G., Kastrapeli, M.D., Potter, S.J., 'How to integrate ESG into investment decision-making: Results of a global survey of institutional investors' (2017) 29(4) *Journal of Applied Corporate Finance* 125

¹⁵ Ibid

¹⁶ EY, 'Nearly three-quarters of top MENA banks have introduced ESG strategies', https://www.ey.com/en_lb/news/2023/11/nearly-three-quarters-of-top-mena-banks-have-introduced-esg-strategies, accessed 15 March 2024

¹⁷ Boudawara, Y., Toumi, K., Wannes, A., and Hussainey, K., 'Shari'ah governance quality and environmental, social and governance performance in Islamic banks. A cross-country evidence' (2023) 24(5) *Journal of Applied Accounting Research* 1004

¹⁸ Azeus Convene, 'The State of ESG Reporting in the Middle East', Azeus Convene, <https://www.azeusconvene.com/esg/articles/esg-reporting-in-the-middle-east>, accessed 18 March 2024

Emirates Environmental Group (EEG) underscore the significance of infusing environmental education and awareness into the educational frameworks of the region to foster a sustainable mindset from an early stage¹⁹.

Thus, despite the rising importance of ESG principles on the global stage, the MENA region faces significant challenges in fully embracing these considerations, particularly within the realm of environmental education. While environmental education practices in the region traditionally focus on raising awareness about environmental issues and promoting conservation efforts, they often overlook the broader socio-economic and governance dimensions inherent in sustainability.

This article argues that the limited integration of ESG principles into environmental education practices in the MENA region hinders the abilities of regulators and stakeholders to effectively address environmental challenges. By failing to provide a comprehensive understanding of sustainability issues, traditional environmental education practices limit the capacity of decision-makers to formulate and implement policies that adequately address the complex environmental issues facing the region. Furthermore, the disconnect between ESG principles and environmental education exacerbates existing regulatory barriers and impedes sustainable development efforts in the MENA region. Without a holistic understanding of ESG considerations, regulators and stakeholders may overlook critical factors such as social equity, economic viability, and transparent governance, leading to ineffective environmental policies and unsustainable practices.

Therefore, the central argument of this paper revolves around the imperative need to integrate ESG principles and environmental education in the MENA region. This entails not only raising awareness about environmental issues but also fostering a deeper understanding of the interconnectedness between environmental sustainability, social equity, and transparent governance. By integrating ESG considerations into environmental education practices, stakeholders in the MENA region can enhance their capacity to address pressing environmental challenges and promote sustainable development

Critically reflecting on this issue, it becomes evident that the integration of ESG principles into environmental education practices is essential to bridge the gap between awareness and action in the MENA region. As ESG

¹⁹ Emirates Environmental Group (EEG), <https://www.eeg-uae.org/>, accessed 21 March 2024

approaches gain prominence globally, there is an urgent need for education to evolve and ESG-integrated environmental education can play a pivotal role in advancing sustainable development and resilience in the MENA region. In light of these considerations, this research aims to delve into the current state of environmental education in the MENA region and propose transformative pathways that align with the SDGs. The ultimate goal is to contribute to the development of a more robust and effective pathway for environmental education, capable of fostering a culture of sustainability and resilience in the MENA region. The primary question guiding the study is: What are the gaps in terms of the existing environmental education system in the region? What are the various pathways for integrating Environmental, Social, and Governance factors into Environmental Education?

The structure of this paper unfolds as follows: Section 2 provides a comprehensive review of global Environmental Education in the literature, establishing the motivation for our study. Moving on to Section 3, an examination of current environmental issues, associated Sustainable Development Goals (SDGs), and Environmental Education (EE) approaches within the MENA Region is presented. In Section 4, an exploration of existing programs and initiatives in the MENA region is discussed. Subsection 4.1 highlights the imperative to integrate Environmental, Social, and Governance (ESG) factors into Environmental Education for Sustainable Development. Section 5 delves into various pathways for integrating ESG into EE. Lastly, Section 6 encapsulates the primary conclusions drawn from the findings of this study.

2. ESG AND ENVIRONMENTAL EDUCATION: A GLOBAL PERSPECTIVE

Education, recognized as an inherent right according to Articles 26/1 and 2 of the Universal Declaration of Human Rights, serves as a catalyst for the development of critical, ethical, and creative thinking in evaluating environmental situations²⁰. Moreover, it fosters the capacity and commitment to take both individual and collective actions that support and enrich the

²⁰ Stanfield J, 'Parental Choice and the Right to Education: Revisiting Article 26 of the Universal Declaration of Human Rights' (2021) UNESCO Global Education Monitoring Report.

environment, as highlighted by Chtatou (2023)²¹. Environmental education (EE) has gained increasing recognition globally as societies become more aware of environmental challenges and the need for sustainable practices. The burgeoning interest in EE is reflected in numerous reviews of its field. EE's significance spans across all educational levels, playing a pivotal role in addressing the intricacies of environmental realities and issues²². Furthermore, it contributes substantially to the cultivation of essential competencies, including autonomy, personal initiative, and the ability to learn, as emphasized by Owojori et al.²³

Environmental education serves as a foundational element within sustainable education, standing at the forefront of innovation. It imparts individuals with the requisite knowledge, skills, and values to comprehend and tackle environmental challenges. The discipline nurtures critical thinking, problem-solving, and decision-making abilities, empowering individuals to assume the role of responsible stewards of the planet. This holds particular significance within the framework of the UN Sustainable Development Goals (SDGs), which advocate for immediate action on climate change, environmental preservation, and sustainable development – domains where environmental education plays an indispensable role. Therefore, environmental education is a fundamental prerequisite for achieving sustainable development. The United Nations' Decade of Education for Sustainable Development (UNDESD 2005–2014) exemplified an endeavor to mobilize and integrate sustainability into national educational strategies and across all levels of governance.

Global environmental education strives to equip individuals with the knowledge, skills, and values necessary to address the complex environmental issues we face. Its reach extends beyond traditional classrooms, encompassing formal and informal learning in diverse settings across the globe. Environmental education has evolved over the past few decades and has

²¹ Chtatou M, 'Understanding and Maximizing Diversity Education in the MENA Region' in *Diversity Education in the MENA Region: Bridging the Gaps in Language Learning* (Springer Nature Switzerland, 2023) 313-362.

²² Van Poeck K, Lysgaard JA, Reid A (eds), *Environmental and Sustainability Education Policy: International Trends, Priorities and Challenges* (Routledge, 2018).

²³ Owojori OM, Mulaudzi R, Edokpayi JN, 'Student's Knowledge, Attitude, and Perception (KAP) to Solid Waste Management: A Survey Towards a More Circular Economy from a Rural-based Tertiary Institution in South Africa' (2022) *Sustainability* 14(3) 1310.

become an emerging area of knowledge²⁴. There has been an accelerated increase in the production of knowledge in this field, with multiple pedagogical, curricular, and transdisciplinary approaches being reported in the literature.²⁵

Numerous findings have shed light on the profound impacts of environmental education. Several studies indicate that environmental education plays a pivotal role in elevating ecological awareness levels, fostering positive environmental attitudes, and enhancing environmental knowledge and skills²⁶. Extensive research has delved into how environmental education stimulates the development of environmental ethics and literacy, encourages environmentally friendly behavior within communities, and contributes to the maintenance of environmental quality.²⁷ These studies collectively underscore the diverse and positive outcomes associated with environmental education, ranging from the establishment of environmental experiences and values to the realization of environmental protection and the promotion of sustainable development in the natural environment. The cumulative evidence highlights the significant role of environmental education in positively influencing knowledge, attitudes, and behaviors, thereby contributing to the overall environmental excellence and preservation outcomes.²⁸

Moving beyond theoretical understanding, environmental education is embracing experiential learning²⁹. Initiatives like citizen science projects, community gardens, and environmental field trips allow individuals to engage directly with the environment and understand its interconnectedness. Digital tools and platforms are revolutionizing

²⁴ Lopera-Perez M and others, 'Bibliometric Analysis of the International Scientific Production on Environmental Education' (2021) 20(3) *Journal of Baltic Science Education* 428..

²⁵ Owojori, Mulaudzi, and Edokpayi (n 8)

²⁶ Ibid

²⁷ Begum, A., Liu, J., Qayum, H., Mamdoh, A. R., 'Environmental and Moral Education for Effective Environmentalism: An Ideological and Philosophical Approach' (2022) *International Journal of Environmental Research and Public Health*.

²⁸ Owojori and others (n 8).

²⁹ Beckwith BR, Halber T and Turner NJ, "'You have to do it": Creating Agency for Environmental Sustainability through Experiential Education, Transformative Learning, and Kincentricity' in Kopnina H and Shoreman-Ouimet E (eds), *Routledge Handbook of Environmental Anthropology* (Routledge 2016) 412.

environmental education and online learning modules, interactive simulations, and virtual reality experiences are making complex concepts accessible and engaging for learners of all ages and backgrounds.³⁰

Numerous organizations and initiatives are actively promoting the advancement of environmental education on a global scale. UNESCO, for instance, has played a pivotal role by launching the Decade of Education for Sustainable Development (2005-2014) and introducing the Education for Sustainable Development Goals framework.³¹ Entities like the Global Environmental Education Partnership (GEEP) contribute significantly by offering resources, training, and support for educators and communities. These initiatives aim to embed sustainability principles into education systems worldwide fostering collaboration and the exchange of best practices. The Earth Partnership for Schools (EPS) program creates partnerships with teachers, schools, and environmental organizations to restore the natural ecology of school grounds and nearby areas, fostering respectful relationships with the land³². The Global Learning and Observations to Benefit the Environment (GLOBE) Program involves students in environmental measurements and data collection, providing valuable information for research into the Earth's environment³³. Higher Education Institutions also play a role in promoting Education for Sustainable Development through programs like the Global Universities Partnership on Environmental Sustainability (GUPES)³⁴. Simultaneously, the goals of the UN Decade of Education for Sustainable Development (UNDESD) from 2005 to 2014 were developed in conjunction with other international initiatives, including the

³⁰ Byrd, J.L., Gallagher, M.A., Habib, E., 'Assessments of Students' Gains in Conceptual Understanding and Technical Skills After Using Authentic, Online Learning Modules on Hydrology and Water Resources' (2022) *Frontiers in Education*.

³¹ Faustino, A., Kaur, I., 'Education and Sustainable Development' (2023) *Asian Journal of Advanced Research and Reports*.

³² Edokpolor, J.E. and Otache, I., 'Global Partnership in Technical and Vocational Education and Training: A Pathway to Sustainable Development', in *Handbook of Research on Connecting Philosophy, Media, and Development in Developing Countries* (IGI Global, 2022) 251-266.

³³ Sukma E, Ramadhan S and Indriyani V, 'Integration of Environmental Education in Elementary Schools' (2020) 1481(1) *Journal of Physics: Conference Series* 012136.

³⁴ Finarelli MG, 'GLOBE: A Worldwide Environmental Science and Education Partnership' (1998) *Journal of Science Education and Technology*.

Millennium Development Goals (MDGs) established in 2000 and the Johannesburg World Summit on Sustainable Development in 2002³⁵.

The primary objective of this strategy is to equip individuals with the knowledge, competencies, and tools necessary for addressing sustainable development effectively. These collective efforts underscore the global commitment to integrating environmental education into various frameworks and strategies, reflecting a shared dedication to fostering a sustainably developed future³⁶. Sustainability, as defined by World Commission on Environment and Development, encompasses the enduring prosperity of the global system across economic, social, and environmental dimensions. The fundamental objective is to facilitate a high quality of life for present generations without compromising the well-being of future ones³⁷. Since the United Nations Conferences on Environment and Development (UNCED) in Rio de Janeiro in 1992 and Johannesburg in 2002, there has been a concerted effort across all sectors of human development to position sustainability as a central theme in the developmental process³⁸. The global discourse on sustainable development, both in terms of overarching objectives and practical pathways, has been extensively explored in academic and non-academic spheres. Various perspectives and, at times, conflicting interpretations have emerged in the discourse surrounding sustainable development. Foundational works by Brundtland, Khalid et al. (1987) and Elkington (1997) have provided important insights into the concept. Constitutional frameworks and theories have also been discussed by authors such as Boyar and Laberge, highlighting the transformative effect of sustainable development on relationships between individuals, society, and the state³⁹. Additionally, scholars like Zahedi and Bermejo have refined conceptualizations of sustainable development, emphasizing the need for an integrated and harmonious approach that considers multiple pillars, including political, economic, social, cultural, technological, ecological, and spiritual

³⁵ Leal Filho W, Manolas E and Pace P, 'The Future We Want: Key Issues on Sustainable Development in Higher Education After Rio and the UN Decade of Education for Sustainable Development' (2015) 16(1) *International Journal of Sustainability in Higher Education* 112.

³⁶ Ana Faustino (n 24)

³⁷ Jacques, P. (2020) *Sustainability: The Basics* (Routledge).

³⁸ Leal Filho, Manolas, and Pace (see note 28).

³⁹ Boyar O, 'Constitution and Sustainable Development' (2020) *Istanbul Law Review* 78(4), 1921

development⁴⁰. This extensive body of work reflects the depth and complexity of the discourse surrounding sustainable development, both at a theoretical and practical level.

A growing emphasis is placed on integrating environmental justice into education, aiming to ensure equitable access to environmental education and the associated benefits of a healthy environment across all communities, irrespective of socio-economic factors. Frameworks such as the Environmental Justice Framework have gained significant traction, serving as powerful tools for guiding the integration of environmental justice principles into education⁴¹. These frameworks contribute to the formulation and implementation of sustainable development solutions. The progress in sustainability science has in turn established comprehensive frameworks that consider the roles of social, ecological, economic, and technological agents within systems and their various levels of organization.⁴²

While extensive research has identified numerous benefits of environmental education (EE), including insights from studies like ⁴³reviews of EE research suggest a notable gap in understanding. Specifically, the majority of policy research articles predominantly focus on teaching and learning directives. There is a marked scarcity of exploration into the intricate aspects of governance, policy development, enactment, and the nuanced considerations for social equity and justice within the realm of ESG⁴⁴.

The scope of ESG education spans a broad spectrum of principles aimed at fostering sustainable development, responsible citizenship, and ethical leadership. This educational framework extends beyond traditional environmental education to incorporate social equity, economic viability, and transparent governance practice. The World Education Foundation emphasizes the importance of integrating ESG concepts into pedagogy

⁴⁰ Zahedi S, 'Sustainable Development Theory: A Critical Perspective and an Integrative Model' (2019) *Journal of Economics and Sustainable Development*.

⁴¹ Sandra Ogechi Ajaps, 'Deconstructing the Constraints of Justice-Based Environmental Sustainability in Higher Education' (2023) *Teaching in Higher Education*.

⁴² Heslop H, 'Inclusion, Equity, Diversity, and Social Justice in Education in the Twenty-First Century' (2023) *Sustainable Development Goals Series*, 1-10.⁴³ Owojori et al (see note 8).

⁴³ Owojori et al (see note 8).

⁴⁴ Gomes L.F, Pereira, H.R., Gomes, A.C.A.M., 'Trends in Scientific Research on Environmental Education: A Scientometric Review'.

effectively by providing educators with the necessary resources, and support to incorporate sustainability principles across various subjects and grade levels⁴⁵. H. Bell's work also highlights the need for disruptive legal education to address the legally disruptive problem of climate change effectively⁴⁶. By reimagining education to encompass interdisciplinary perspectives and evidence-based approaches, citizens can be equipped with the skills and knowledge needed to navigate complex environmental challenges and advocate for transformative policy reform.

Key elements of ESG education are included below and further detailed in section 4.1:

1. **Environmental Dimension:** This focuses on providing knowledge, and environmental literacy in skills related to environmental conservation. Key elements include raising awareness about environmental issues, promoting conservation efforts, and fostering a sense of environmental stewardship among individuals and communities.
2. **Social Dimension:** The social dimension of ESG education emphasizes social justice, equity, and human rights, recognizing the interconnectedness between environmental sustainability and social well-being to foster responsible citizenship and social cohesion. Key elements include promoting diversity, equity, and inclusion, addressing socio-economic disparities, and advocating for marginalized communities' rights.
3. **Governance Dimension:** The governance dimension focuses on instilling principles of transparency, accountability, ethics, and participatory decision-making in governance processes at institutional, corporate, and societal levels. Key elements include promoting transparency integrity, and accountability in public and private institutions, and fostering a culture of ethical conduct and responsible business practices.

In the MENA region, where environmental degradation, social inequality, and governance deficits pose significant challenges, ESG education offers a

⁴⁵ World Education Foundation, 'Empowering Teachers: Integrating ESG Concepts into Classroom Pedagogy', <https://www.worldedfoundation.org/post/empowering-teachers-integrating-esg-concepts-into-classroom-pedagogy>, accessed 21 March 2024

⁴⁶ Bell HC, 'Tackling the Legally Disruptive Problem of Climate Change with Disruptive Legal Education' in Olawuyi DS (ed), *Climate Change Law and Policy in the Middle East and North Africa Region* (Routledge 2021) 251.

comprehensive framework for addressing complex issues and driving positive change.

Addressing these gaps calls for studies that delve into the complexities of governance and policy development and also on the social equity and governance dimensions inherent in environmental education. This will contribute to a more holistic understanding of the multifaceted nature of environmental education, fostering inclusive and equitable approaches to sustainable development.

3. CURRENT ENVIRONMENTAL PROBLEMS AND ASSOCIATED SDGs IN THE MENA REGION

This section delves into the connection between EE and sustainable development in the MENA region, analyzing specific Sustainable Development Goals (SDGs). The UN's SDGs provide a comprehensive blueprint for achieving a sustainable future, encompassing environmental, social, and economic dimensions. EE plays a multifaceted role in advancing these goals, weaving its threads into the fabric of each SDG in the following environmental issues in the MENA. The MENA region encounters various challenges in realizing the SDGs. The pivotal environmental issues facing the MENA and its associated SDGs for reshaping Environmental Education are delineated below and depicted in Figure 1.

- **Lack of clean water and Sanitation (SDG 6):** Water scarcity is a defining challenge in MENA. The region is particularly vulnerable to water scarcity due to factors such as population growth, urbanization, climate change, and pollution⁴⁷. EE is necessary to equip communities with the knowledge and skills to manage water resources efficiently, promoting sustainable practices. This aligns with SDG 6.4, aiming to "significantly reduce" the proportion of people who lack access to safe drinking water and sanitation by 2030.
- **Inequality (SDG 10):** These challenges are exacerbated by the ongoing conflicts, environmental degradation, and displacement in the region, which have led to a significant increase in social exclusion⁴⁸. Reducing

⁴⁷ Lange (see note 3).

⁴⁸ ERF, 'Sustainable Development Goals: Framework for Policy in the MENA Region' (25 February 2020) <https://theforum.erf.org.eg/2020/02/25/sustainable-development-goals-framework-policy-mena/>

inequality in the MENA region is critical for achieving sustainable development and inclusive growth. Investing in EE is critical, especially for women and youth.

- **Inequitable education (SDG4):** The region is facing challenges related to education, in terms of access, quality, relevance, and equity. The critical need for SDG 4 in the MENA region is to ensure that everyone has access to quality education and lifelong learning opportunities for sustainable development. This requires investing in education infrastructure and improving the quality of education by enhancing learning practices, curriculum development, and promoting innovation and creativity in education
- **Climate change issues (SDG 13):** Rising temperatures and extreme weather events pose significant threats to MENA. Insufficient development of risk assessment and mitigation policies lead to extensive social and economic repercussions, carrying lasting consequences⁴⁹. EE fosters climate literacy, raise awareness about climate change mitigation and adaptation strategies, and empower individuals to adopt sustainable lifestyles. This contributes to SDG 13.3, calling for "urgent action to combat climate change and its impacts."
- **Desertification (SDG 15):** Desertification and land degradation are pervasive concerns in MENA. Governance mismanagement exacerbates the existing challenges. To realize the objectives of the 2030 Agenda, it is imperative to persist in the development and enhancement of existing governance and institutional frameworks⁵⁰. EE equips communities with the tools to conserve biodiversity, promote sustainable land management practices, and prevent soil erosion. This aligns with SDG 15.3, aiming to "combat desertification, land degradation, and drought, and strive to achieve a land-degradation-neutral system."
- **Ineffective Partnerships (SDG17):** Collaboration is crucial for achieving the SDGs. In MENA region, it is crucial to integrate the 2030 Agenda for Sustainable Development into development plans and policies within a strong institutional framework to effectively achieve the Sustainable

⁴⁹ Salimi, M., Al-Ghamdi, S.G., 'Climate Change Impacts on Critical Urban Infrastructure and Urban Resiliency Strategies for the Middle East' (2020) *Sustainable Cities and Society* 54, 101948.

⁵⁰ Ben Hassen T and El Bilali H, 'Sustainable Development Goals in the Middle East and North Africa (MENA) Region: Policy and Governance' in Adedoyin E (ed), *SDGs in Africa and the Middle East Region* (Springer International Publishing 2022) 1-16.

Development Goals (SDGs)⁵¹. EE fosters a sense of global citizenship and promotes collaborative action within and across communities. This strengthens partnerships for the SDGs, as envisioned in SDG 17.17, encouraging "enhanced multi-stakeholder partnerships" towards sustainable development.

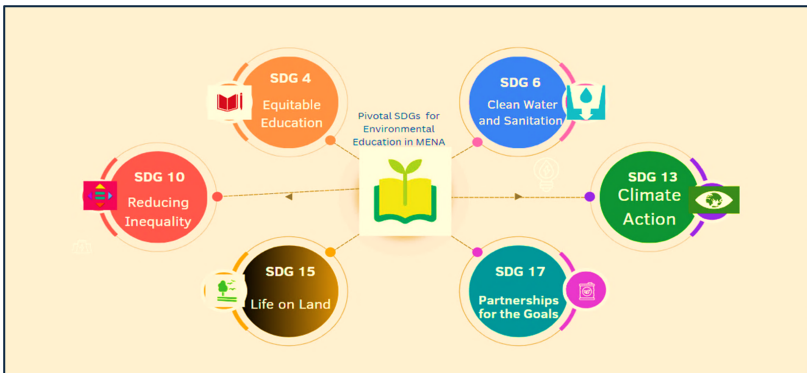


Figure 1: Pivotal environmental challenges and relevant SDGs requiring EE in the MENA (Source: Authors Research)

3.1 Challenges facing ESG-integrated Education in the MENA Region

Given the established imperative of integrating ESG principles to address the environmental problems in the preceding section, there are significant challenges that hinder the effective implementation of ESG-integrated education. This section highlights the current challenges facing ESG-integrated education in the MENA region and discusses their implications:

A. Limited Legal and Institutional Support

MENA countries lack clear legal mandates or regulatory frameworks that explicitly prioritize ESG integration into educational curricula⁵². Without enforceable policies mandating the inclusion of ESG principles, institutions may lack the guidance and incentives needed to prioritize ESG education. Inadequate institutional coordination and collaboration further hinder the integration of ESG principles into environmental education in MENA as educators may face barriers in implementing innovative ESG education

⁵¹ Ibid

⁵² Azoury N, Yahouchi, G. (eds), *Governance in Higher Education: Global Reform and Trends in the MENA Region* (Springer Nature, 2023).

initiatives and accessing resources. Fragmentation and siloed approaches within educational institutions, government agencies, and non-governmental organizations (NGOs) result in disjointed efforts and missed opportunities for synergistic collaboration.

B. Political Instability and Regulatory Challenges

These challenges stem from complex political dynamics, centralized governance structures, and the prioritization of short-term interests over long-term sustainability goals. Centralized governance structures prevalent in many MENA countries⁵³ often result in inefficiencies that hinder the implementation of ESG-integrated education initiatives. Decision-making processes may be slow, and susceptible to political interference, making it challenging to enact comprehensive policies and reforms to prioritize sustainability education. Political instability and regulatory challenges in some MENA countries⁵⁴ also disrupt educational systems and divert attention away from long-term sustainability goals, leading to inconsistencies and gaps in ESG-integrated education initiatives.

C. Data and Research Gaps

Despite growing interest in sustainability education, there is a paucity of empirical studies tailored to MENA's socio-cultural context, hindering efforts to measure the impact of ESG initiatives systematically⁵⁵. Limited empirical studies and evaluation frameworks hinder evidence-based decision-making and policy development for EE. Limited research hampers efforts to assess the effectiveness of existing programs, identify best practices, and inform evidence-based policy decisions. Furthermore, there is a scarcity of comparative research assessing the variability and transferability of ESG education models within the region⁵⁶. Inadequate documentation and analysis of policy impacts, hinder efforts to identify policy gaps, barriers, and opportunities for advancing ESG education agendas. Understanding public perceptions, attitudes, and behaviours related to sustainability education is

⁵³ Shalaby M, Weiss C, Lust E, Kao K, Vollmann E, Bergh S, Karmel E J, Bohn M, Kherigi I, and Kadirbeyoglu Z, 'The Dynamics of Decentralization in the MENA: Processes, Outcomes, and Obstacles' (2020) Program on Governance and Local Development Working Paper (31).

⁵⁴ Fraihat I, Yaseen T, 'Evolving trends in the post-Arab spring era: Implications for peace and stability in the MENA region' (2020) 15(3) *Journal of Peacebuilding & Development* 331-347.

⁵⁵ Buallay, A.M., 'Sustainability reporting in different regions' (2022) in *International Perspectives on Sustainability Reporting*, Emerald Publishing Limited 167.

⁵⁶ Ibid

essential for designing effective strategies and mobilizing support for ESG integration efforts.

D. Lack of Resource and Capacity Constraints

In many MENA countries, educational institutions grapple with limited funding and inadequate infrastructure, which pose significant barriers to ESG integration. Resource constraints, including limited and inadequate investment in education infrastructure which may hamper efforts to deliver quality ESG education initiatives. Furthermore, disparities in resource allocation exacerbate inequalities in access to quality education, particularly in marginalized communities. This perpetuates socio-economic disparities and undermines efforts to promote inclusive and equitable education. Insufficient resources and capacity constraints can also stifle innovation limiting opportunities for experiential learning.

E. Technological Gap and Digital Divide

While technology has the potential to enhance learning experiences and facilitate access to educational resources, disparities in access to technology and digital infrastructure exacerbate inequalities. Access to technology and information is crucial for delivering modern, interactive ESG education. However, disparities in technology access and internet connectivity persist across the MENA region, particularly in rural and marginalized communities⁵⁷. Unequal access to technology across the region can hinder online learning opportunities or the use of digital tools for teaching ESG concepts. Addressing technology gaps and the digital divide is essential for ensuring equitable access to ESG-integrated environmental education in the region.

4. OVERVIEW OF EXISTING PROGRAMS AND INITIATIVES IN THE MENA

Environmental initiatives in the Middle East and North Africa (MENA) region are gaining traction as the region faces the brunt of climate change. The region is already the most water-scarce in the world, and the increasing temperatures are predicted to lead to more persistent and acute drought. Some notable climate action projects from the MENA region are making a

⁵⁷ LechmanE., 'Digital Gaps and Economic Inequalities in MENA Countries: An Empirical Investigation' (2022) in *Key Challenges and Policy Reforms in the MENA Region: An Economic Perspective* (Springer International Publishing) 23-44.

real difference. For example, the RISE2030 is a community-led initiative based in Beirut that focuses on empowering women and youth, with the aim of improving living conditions in Lebanon's most deprived areas through education, employment, and empowerment⁵⁸. Another is the Fog Harvesting is an innovative solution to persistent water stress where fog is abundant. Dar Si Hmad, a women-led NGO in Morocco, designed and installed the world's largest operational fog water harvesting system. It provides accessible potable water to more than 400 people in five villages⁵⁹. Yalla Let's Bike is another powerful initiative, founded by Sarah Zein in 2013, which challenges gender norms, addresses traffic congestion, and promotes cycling as an eco-friendly transportation solution in Syria. The initiative, rooted in environmental education, emphasizes the broader impact of reducing reliance on conventional transportation. With over 4,000 women and girls participating in cycling events, Yalla Let's Bike has successfully shifted perceptions, resulting in women accounting for over 40% of recent bike sales. This exemplifies the initiative's role in not only transforming transportation habits but also fostering a sustainable and eco-conscious society⁶⁰.

The MENA region has also seen a surge in environmental education initiatives in response to the growing recognition of the intertwined challenges of environmental degradation and sustainable development. One notable initiative is the Arab Forum for Environment and Development (AFED) a non-governmental organization dedicated to addressing environmental and sustainable development challenges in Arab countries. It has been at the forefront of promoting environmental education and sustainable practices across the Arab world⁶¹. The efforts include curriculum development, teacher training, and community engagement to instill environmental awareness. Additionally, various national governments in the MENA region have implemented environmental education programs within their education systems. The United Arab Emirates' (UAE) "Green Economy for Sustainable Development" initiative is a notable example of

⁵⁸ RISE 2030: Women Results (UN Women) <https://wrd.unwomen.org/explore/insights/rise-2030-women-results> (accessed 20th January, 2023).

⁵⁹ Morocco Fog Harvesting Project (UNFCCC) <https://unfccc.int/mfc2016/project.html?p=morocco-fog-harvesting>

⁶⁰ Yalla Let's Bike (UNFCCC, [insert year if available]) <https://unfccc.int/climate-action/momentum-for-change/women-for-results/yalla-lets-bike> (accessed 20th January, 2023).

⁶¹ Arab Forum for Environment and Development (AFED), 'AFED Annual Report 2017' (2017) http://www.afedonline.org/uploads/afed_reports/AFED-REPORT-2017-FINAL.pdf

integrating environmental education into school curricula to cultivate a generation with a heightened ecological conscience⁶²

In alignment with this, UNESCO's Arab Network for Environment and Development (ANPED) actively promotes environmental education in the Arab region. This network emphasizes capacity building for educators, curriculum development, and knowledge sharing to enhance the impact of environmental education initiatives⁶³. Moreover, the Emirates Green Schools Initiative, launched in the UAE, serves as a localized effort to nurture environmental awareness and action among students. This initiative achieves its goals through school-based activities and projects designed to instill a sense of responsibility towards the environment⁶⁴. In Morocco, the Sahara Conservation Fund's Environmental Education Program takes a community-focused approach by working with nomadic communities. The program integrates traditional knowledge with environmental education to foster sustainable resource management practices⁶⁵.

Similarly, the Green Caravan Project in Jordan operates as a mobile environmental education unit, traveling to schools and villages. This initiative plays a crucial role in raising awareness about environmental issues and providing practical solutions at the grassroots level⁶⁶.

Furthermore, technology-based initiatives are emerging across the MENA region, contributing to the gamification of environmental education. Online platforms and mobile apps offer diverse learning resources, making environmental education more engaging and accessible for a wider audience⁶⁷.

⁶² Krzymowski, A., 'Sustainable Development Goals in Arab Region – United Arab Emirates' Case Study' (2020) *Problemy Ekorozwoju* 15(1).

⁶³ Arab Network for Environment and Development (RAED) (Arab.org) <https://arab.org/directory/arab-network-for-environment-and-development-raed/> accessed

⁶⁴ Hays JM, Pereseina V, Alshuaibi ASI and Saha J, 'Lessons in Sustainable Process Paradigm: A Case Study from Dubai' (2020) 18(1) *The International Journal of Management Education* 100366.

⁶⁵ IUCN Members - Sahara Conservation Fund (International Union for Conservation of Nature) <https://www.iucn.org/our-union/members/iucn-members/sahara-conservation-fund>

⁶⁶ The Green Caravan Initiative (ITG Solutions) <https://www.itgsolutions.com/the-green-caravan-initiative/>

⁶⁷ Chinnasamy G, Madbouly A and Reyad S, 'Fintech: A Pathway for MENA Region' in *The Fourth Industrial Revolution: Implementation of Artificial Intelligence for Growing Business Success* (Springer 2021) 135.

While ongoing education reforms in the MENA region have achieved positive milestones over the past 15 years, such as improving access to formal basic education and narrowing the gender gap, they have not comprehensively addressed the broader challenges. Many existing programs face issues of fragmented implementation, varying quality, and limited reach⁶⁸. There is a widespread acknowledgment that education systems in the Middle East and North Africa (MENA) region are generally falling short in delivering the necessary outcomes for individual and societal advancement⁶⁹. Despite the expansion of education opportunities, this growth has not translated into significant development⁷⁰. Additionally, the existing skills deficit persists and has yet to be systematically and qualitatively addressed. This indicates the need for more concerted efforts to bring about qualitative improvements in the education system to better align with the demands of economic and social development in the MENA region.⁷¹

Despite all these efforts, it must be acknowledged that the results obtained in light of the proposed objectives are still relatively small. Furthermore, when considering the initiatives developed at the School and Academy levels, the disenchantment is even heightened. The Arab Forum for Environment and Development (AFED) conducted a comprehensive survey of environmental content in school and university curricula across Arab countries. The survey revealed that the most prevalent environmental topics in Arab schools include ecosystems, natural resources, pollution, and sustainable development. This information underscores the importance of addressing these key environmental themes in educational curricula to foster a greater

⁶⁸ Farhat, J., Mansur, N., 'Inclusion and Equity: Mapping the Legislative Landscape of Non-State Education in the MENA Region' (2023).

⁶⁹ Ibid

⁷⁰ Ibrahim AI, Sulaiman NI and Ben Ali I, 'Simultaneous Multidimensional Impacts of Active Learning Revealed in a First Implementation in the MENA Region' (2022) Proceedings of the National Academy of Sciences of the United States of America.⁷¹ Boudihaj A, Sahli M, 'Education in the Mena Region' (2022) in World Education Patterns in the Global South: The Ebb of Global Forces and the Flow of Contextual Imperatives (Emerald Publishing Limited), 19.

⁷¹ Boudihaj A, Sahli M, 'Education in the Mena Region' (2022) in World Education Patterns in the Global South: The Ebb of Global Forces and the Flow of Contextual Imperatives (Emerald Publishing Limited), 19.

understanding and commitment to sustainability among students in the Arab region⁷².

The integration of environmental education (EE) into national curricula across MENA countries varies significantly. While some nations like the United Arab Emirates (UAE) and Jordan have made commendable strides, countries with moderate integration include Lebanon, Egypt, Oman, Algeria, others, like Yemen and Libya, still lag behind with EE often absent or relegated to extracurricular activities⁷³. As a result, the impact of these programs on fostering sustainable behaviors and instigating positive environmental change remains open for debate. The literature highlights the need for a comprehensive evaluation of the current landscape to identify areas of improvement and inform the redefinition of environmental education approaches in the MENA region.

Table 1: Instances of environment-related education within the environmental themes

Theme	Theme Description		Relation to SDG	Instances in MENA Curriculum/EE	Key Nations Implementing Initiatives
Climate Change	Raising awareness about the impact of human activities on global climate, mitigation, and adaptation strategies	climate change education ambition by the MENA region is poor—far less than global climate change	SDG 13: Climate Action	- Climate change adaptation strategies in geography and environmental studies - Environmental projects and awareness campaigns addressing climate change	Jordan, Mauritania, Tunisia, and Qatar. UAE, Jordan, Saudi Arabia

⁷² Islamic Development Bank, 'Environmental Education in Arab Countries' (2019) [https://www.isdb.org/sites/default/files/media/documents/2021-03/Evvironmental %20Education%20in%20Arab%20Countries.pdf](https://www.isdb.org/sites/default/files/media/documents/2021-03/Evvironmental%20Education%20in%20Arab%20Countries.pdf)

⁷³ Saab N, Badran A and Sadik AK, 'Environmental Education for Sustainable Development in Arab Countries' in Annual Report of Arab Forum for Environment and Development, Beirut, Lebanon (2019).

	education ambition			
Water Conservation Education	Understanding the importance of water conservation, techniques for responsible water use	SDG 6: Clean Water and Sanitation	- Inclusion of water conservation techniques in geography courses - Water-saving initiatives integrated into school and community programs	Morocco Lebanon, Egypt, Tunisia
Biodiversity Conservation Education	Studying and preserving the variety of life on Earth, understanding ecosystems	SDG 15: Life on Land	- In-depth study of local flora and fauna in biology and ecology courses - Initiatives promoting biodiversity awareness in school gardens and projects	Morocco, Algeria, Jordan
Environmental Citizenship Education	Fostering civic responsibility, ethical environmental practices, and community engagement	SDG 4: Quality Education	- Incorporation of civic responsibility and environmental ethics in social studies - Projects fostering community engagement in environmental conservation	Kuwait, Qatar, Bahrain, Saudi Arabia Jordan's and Qatar's

4.1 Environmental Education for Sustainable Development: Why Integrate ESG?

Environmental Education (EE) has traditionally centered on ecological aspects, emphasizing the importance of ecological systems and conservation. However, in recent years, there has been a notable shift towards recognizing the need to integrate Environmental, Social, and Governance (ESG)

principles into EE⁷⁴. This transformative approach reflects an evolving understanding of sustainability that goes beyond ecological considerations alone. This shift is crucial in acknowledging that environmental challenges are intricately connected to social and governance dimensions. The interconnectedness of these three pillars—Environmental, Social, and Governance—has gained prominence in global discussions on sustainable development⁷⁵. The integration of ESG principles into EE represents an effort to provide a more holistic and comprehensive understanding of sustainability.

The Environmental aspect continues to address ecological concerns, such as biodiversity conservation, climate change mitigation, and natural resource management⁷⁶. Simultaneously, the Social dimension brings attention to the human aspect, considering the impact of environmental issues on communities, social equity, and quality of life⁷⁷. Lastly, the Governance component underscores the importance of effective policies, regulations, and decision-making processes in achieving sustainable outcomes⁷⁸. This transformative approach aligns with the broader global agenda, including the United Nations Sustainable Development Goals (SDGs). The SDGs recognize the interdependence of environmental, social, and governance factors in achieving a sustainable and inclusive future for all. As noted by scholars and organizations, this integration of ESG principles into EE offers a more nuanced and relevant educational framework. It equips individuals with the knowledge and skills needed to address complex environmental challenges while considering the broader societal and governance contexts. These components are discussed in the subsequent section

4.1.1 Environmental component

There can be no sustainable development without environmental protection, especially given the extent of damage already done to the ecosystem. The "E" in Environmental, Social, and Governance (ESG) principles is pivotal in shaping responsible and sustainable practices. Focused on the environmental

⁷⁴ Ardoin NM, Bowers AW, Gaillard E, (2020). Environmental education outcomes for conservation: A systematic review. *Biological Conservation*, 241, 108224.

⁷⁵ Ibid

⁷⁶ Senadheera SS, Gregory R, Rinklebe J, Farrukh M, Rhee JH., Ok, YS., 'The development of research on environmental, social, and governance (ESG): A bibliometric analysis' (2022) *Sustainable Environment* 8(1), 2125869.

⁷⁷ Amaral MR, Willerdin IVA, Lapolli ÉM, 'ESG and sustainability: the impact of the pillar social: ESG e sustentabilidade: o impacto do pilar social' (2023) *Concilium* 23(13), 186-199.

⁷⁸ Senadheera and others (n 75)

dimension, it underscores the significance of understanding and mitigating the impact of human activities on the natural world. The environmental aspect of ESG extends beyond mere acknowledgment of ecological systems; it delves into the imperative of fostering a harmonious relationship between human societies and the environment⁷⁹. It emphasizes the integration of environmentally responsible practices into business operations, recognizing that sustainable and ethical environmental practices are essential for long-term business success⁸⁰ and Integrating ESG principles into education involves imparting knowledge about climate change, biodiversity conservation, and sustainable resource management, fostering a broader sense of responsibility towards the environment global well-being. Through ESG-integrated education, individuals gain a holistic understanding of the delicate balance between human activities and the natural world. This comprehensive perspective inspires the adoption of sustainable practices and the incorporation of eco-friendly technologies into various aspects of life.

4.1.2 Social component

In the confine of Environmental, Social, and Governance (ESG) principles, the "social" dimension delves into the human and societal facets of sustainability⁸¹. Its scope encompasses a broad spectrum of issues related to people, communities, and overall societal well-being and its hallmark is how social impact expectations have extended outside the walls of learning.

Within the social aspect of ESG, a multifaceted exploration of human and societal facets unfolds, addressing a spectrum of issues related to people, communities, and overall societal well-being. Central to the social dimension is the pursuit of social equity and justice⁸². In the context of EE, this entails a deep dive into how environmental challenges disproportionately affect various social groups. Educators play a pivotal role in fostering an understanding of environmental justice, prompting citizens to scrutinize the fair distribution of environmental benefits and burdens across communities

⁷⁹ Amaral et al (see note 76)

⁸⁰ Teixeira Dias, F., de Aguiar Dutra, A.R., Vieira Cubas, A.L., Ferreira Henckmaier, M.F., Courval, M., de Andrade Guerra, J.B.S.O., (2023). Sustainable development with environmental, social and governance: Strategies for urban sustainability. *Sustainable Development*, 31(1), 528-539.

⁸¹ Amaral and Others (note 76)

⁸² Becchetti L, Bobbio E, Prizia F, Semplici L, 'Going deeper into the S of ESG: a relational approach to the definition of social responsibility' (2022) *Sustainability* 14(15), 9668.

and consider the heightened vulnerability of specific populations to environmental impacts.

Community engagement and participation also emerge as crucial elements of social responsibility. EE programs, by encouraging students to actively collaborate with local communities on projects, not only address environmental concerns but also honor diverse perspectives and needs within different social groups. Human health and well-being stand as integral components within the social dimension of ESG. EE discussions may include the effects of pollution on public health, the importance of access to clean water and air, and the role of green spaces in enhancing mental health⁸³. The imperative of diversity and inclusion is woven into the social dimension. ESG takes strides towards inclusivity by fostering discussions about environmental issues that embrace diverse cultural perspectives. This approach ensures that a multitude of voices is represented in discussions and decision-making processes related to environmental challenges⁸⁴. In the context of EE, exploration delves into the environmental impact of various industries on workers, advocacy for fair labor practices, and consideration of the social implications embedded in resource extraction or production processes. Education for Sustainable Development (ESD) aligns seamlessly with the social aspect of ESG, emphasizing the cultivation of knowledge, skills, values, and attitudes essential for crafting a more sustainable and just society⁸⁵. Integration of ESD principles into EE becomes a conduit to comprehensively address the social aspects of sustainability. Social entrepreneurship emerges as a dynamic concept within EE and ESG. This approach encourages students to develop innovative solutions to environmental challenges while concurrently addressing social issues. The interconnectedness of environmental and social sustainability is underscored through this entrepreneurial lens. Lastly, within the context, the "social" aspect extends to corporate social responsibility (CSR) as ESG becomes a platform for exploring how businesses and organizations can positively

⁸³ Mensah, J, 'Social sustainability: A dwarf among giants in the sustainable development pillars?' (2021) *Asian Journal of Management* 12(2), 127.

⁸⁴ H. Kopnina, S.R. Zhang, S. Anthony, A. Hassan, W. Maroun, 'The Inclusion of Biodiversity into Environmental, Social, and Governance (ESG) Framework: A Strategic Integration of Ecocentric Extinction Accounting' (2024) *Journal of Environmental Management* 351, 119808.

⁸⁵ Heslop et al (n 41)

contribute to society by adopting sustainable and socially responsible practice⁸⁶

4.1.3. Governance component

Governance within the framework of Environmental, Social, and Governance (ESG) principles plays a pivotal role in shaping the landscape of environmental education (EE). It acts as the guiding force behind decision-making processes, influencing the formulation and implementation of policies geared towards addressing environmental concerns⁸⁷. In EE, a deep exploration into the influence of governance structures on policy creation and guidelines becomes essential for understanding how organizations navigate the complexities of sustainability.

A significant facet of governance in the ESG context is its role in fostering corporate environmental responsibility. Within EE, this dimension unfolds as students delve into the ways corporate governance structures impact a company's commitment to environmentally responsible practices⁸⁸. Governance's influence extends into ensuring legal compliance and managing risks associated with environmental challenges. Individuals can scrutinize how governance frameworks aid organizations in navigating environmental regulations, mitigating risks, and championing sustainable practices. This involves a comprehensive examination of governance's role in addressing environmental challenges and potential liabilities.

Effective governance in the ESG framework is closely tied to stakeholder engagement, encompassing interactions with communities and environmental advocates⁸⁹. In EE, students can embark on an exploration of how governance structures facilitate communication and collaboration with stakeholders to address pressing environmental concerns. Understanding the instrumental role of governance in fostering positive relationships with stakeholders becomes imperative for the advancement of sustainable

⁸⁶ Dathe T, Dathe R, Dathe I, Helmold M, (2022). Corporate Social Responsibility (CSR), Sustainability and Environmental Social Governance (ESG): Approaches to Ethical Management. Springer Nature.

⁸⁷ Senadheera and Others (n 75)

⁸⁷ Senadheera and Others (n 75)

⁸⁸ Chopra SS, Senadheera SS, Dissanayake PD., Withana, PA., Chib R., Rhee, JH., Ok YS, 'Navigating the Challenges of Environmental, Social, and Governance (ESG) Reporting: The Path to Broader Sustainable Development' (2024) Sustainability 16(2) 606.

⁸⁹ Ibid

practices. Transparency and accountability are hallmarks of governance within ESG, and in the context of EE, this translates into understanding how governance frameworks influence the transparency of organizations in reporting their environmental impact⁹⁰ citizens gain insights into the role of governance in ensuring accurate and comprehensive disclosure of environmental data, thereby fostering a culture of openness.

Ethical considerations constitute an integral part of governance in ESG decision-making processes. Within EE, students can navigate through the ethical dimensions of governance decisions and their impact on sustainable practices. Understanding how governance structures facilitate ethical behavior in addressing environmental issues contributes to a more nuanced perspective on the intersection of ethics and sustainability⁹¹. Governance, as a provider of institutional frameworks and regulations, plays a crucial role in shaping policies related to environmental issues. Recognizing the interplay between governance and regulation is essential for comprehending the broader societal efforts in addressing environmental challenges.

5. TRANSFORMATIVE PATH TO ENHANCE EE THROUGH THE INTEGRATION OF ESG PRINCIPLES

5.1 Environmental

The enhancement of the environmental aspect of EE through the integration of ESG principles in the MENA region involves practical applications focused on aligning context with specific challenges and incorporating indigenous knowledge and cultural perspectives. Within the environmental context, the integration of ESG into EE can be transformed as follows:

5.1.1 Engagement with Indigenous Communities

In the context of ESG-oriented EE, there is need to actively engage indigenous communities in the development and execution of environmental education programs. There is a growing acknowledgment of the effectiveness

⁹⁰ Wong CW, Wong C, Boon-Itt, S, Tang, AK, 'Strategies for Building Environmental Transparency and Accountability' (2021) Sustainability 13(16) 9116.

⁹¹ Ibid

of Indigenous-led approaches to environmental stewardship⁹². Collaborative models that respect and integrate Indigenous knowledge and cultural perspectives can be incorporated in ecological and environmental education by recognizing and valuing the traditional knowledge systems and practices of indigenous communities in MENA. Collaborating with local indigenous communities to co-design and co-deliver educational programs that integrate their knowledge and perspectives and incorporating indigenous stories, legends, and oral traditions that highlight the interconnectedness between the people and the environment. This ensures their participation and ownership in initiatives, fostering a collaborative and inclusive approach.

5.1.2 Integration of Traditional Ecological Knowledge into curriculum

Local knowledge provides context-specific solutions to environmental issues and it is argued that involving indigenous peoples and local communities is essential for the development and implementation of more effective environmental governance systems for ecosystems and biodiversity⁹³. It is imperative to incorporate traditional ecological knowledge into e.g land and water resource management practices, aligning with sustainable and cultural approaches into the region's curriculum. This integration enriches the environmental curriculum contributing to a holistic understanding of ecosystems. The curriculum should be designed in consultation with local communities, incorporating their perspectives, priorities, and knowledge systems unique to the region. This collaborative effort ensures that EE imparts valuable skills and knowledge but also respects and celebrates the rich cultural and environmental heritage of the MENA region.

5.1.3 Contextualize learning with real-world scenarios

Environmental Education (EE) must adapt to the advancements in immersive learning technology. This stands in contrast to traditional oral-based education, which predominantly emphasizes abstract learning over practical skills⁹⁴. This adaptation is crucial for fostering a stronger and more robust understanding of environmental topics among learners. This strategy

⁹² Reed, G, Brunet, N.D., Longboat, S, Natcher DC., 'Indigenous Guardians as an Emerging Approach to Indigenous Environmental Governance' (2021) *Conservation Biology* 35(1) 179

⁹³ Lam, DP, Hinz E, Lang D, Tengö M, Wehrden H, Martín-López B, 'Indigenous and Local Knowledge in Sustainability Transformations Research: A Literature Review' (2020) *Ecology and Society* 25(1).

⁹⁴ Checa, D., Bustillo, A., 'A Review of Immersive Virtual Reality Serious Games to Enhance Learning and Training' (2020) *Multimedia Tools and Applications* 79, 5501-5527

emphasizes aligning EE content with the specific challenges faced by different MENA regions, such as water scarcity and desertification. The goal is to make learning more relevant and impactful by addressing issues directly affecting local environments. The EE approach can leverage technology for immersive learning. This can involve utilizing digital tools like geospatial data, simulations, and virtual reality that enhances the educational experience by immersing learners in real-world environmental scenarios. This provides a dynamic and engaging way to showcase the consequences of human actions on their environment.

5.2 Social

The enhancement of the social aspect of ESG principles into EE the MENA can be improved as follows:

5.2.1 Cultural Inclusivity and Gender Dynamics

Gender equality necessitates the elimination of gender stereotypes and the establishment of institutions and environments that empower individuals of all genders to exercise agency, cope with challenges, instigate change, and adapt. This commitment is explicitly articulated in the preamble of the United Nations Framework Convention on Climate Change. Furthermore, various funding bodies mandate its considerations across all facets of program delivery⁹⁵. This is integral to social considerations in the MENA region. Research in the Arab Gulf States reveals that the impact of female members on activities related to EE differs among the countries included in the study. Furthermore, researchers attribute this variation to social and cultural barriers prevalent in these states⁹⁶. EE should highlight the importance of social inclusion and gender equality in the context of environmental initiatives. It is imperative to address gender and women's empowerment systematically. This involves fostering the active participation and leadership of women in policymaking across all levels in the MENA, from local to global. Additionally, establishing mechanisms that encourage finance and investment in environmental initiatives with a focus on gender and social inclusion is crucial to this integration.

⁹⁵ Lau JD, Kleiber D, Lawless S, Cohen PJ, 'Gender Equality in Climate Policy and Practice Hindered by Assumptions' (2021) *Nature Climate Change* 11(3) 186-192.

⁹⁶ Issa A, Zaid MA, 'Boardroom Gender Diversity and Corporate Environmental Performance: A Multi-Theoretical Perspective in the MENA Region' (2021) *International Journal of Accounting & Information Management* 29(4) 603-630.

5.2.2 Equitable Access to Education

Access to Education stands as a fundamental pillar within the United Nations 2030 Agenda for Sustainable Development. The current education system inadvertently perpetuates cultural and social disparities, particularly affecting disadvantaged individuals. Analysis of the educational landscape in the MENA region highlights ongoing issues which reveals that students in the MENA region still face significant dropout rates from school⁹⁷. Achieving equitable access to education becomes paramount in driving this transformative agenda forward and thus, promoting equitable access to education is pivotal for enhancing EE in the MENA region. This strategy should focus on making EE programs accessible to all, regardless of gender, socioeconomic background, or geographic location. Addressing social disparities in access to education within the ESG framework ensures that EE programs are designed to be accessible to all, promoting inclusivity and equal opportunities for learning.

5.2.3 Empower youth in environmental activism

Active engagement of young individuals in environmental activism necessitates a sense of empowerment, where they perceive themselves as possessing the rights, responsibilities, and competencies to actively participate in intricate thinking, decision-making, and problem-solving processes. These vital competencies and proclivities towards environmental activism do not solely arise from specific contributions within curricular units or classroom activities. Instead, they are cultivated over time through repeated and diverse active learning experiences in both formal and informal contexts⁹⁸. The MENA region needs to actively engage the young people in EE initiatives by supporting youth-led environmental movements, providing leadership training, and offering platforms for their voices to be heard. This strategy recognizes the unique perspectives and energy that youth bring to environmental issues and provide platforms for their active participation, leadership development, and contribution to social and environmental initiatives.

5.2.4 Socially Inclusive Programs for social responsibility

⁹⁷ Khalil, A. I., Yasmeeen, N., 'Does assistive technology help children having disabilities in Middle East and North Africa (MENA) region: a literature review' (2020) 10(3) *International Journal of Mechanical and Production Engineering Research and Development (IJMPERD)* 3209-3224.

⁹⁸ Ibid

Corporate Social Responsibility (CSR) is a concept widely recognized and understood, but in the MENA region, it is often depicted as predominantly philanthropic and lacking structure in its implementation⁹⁹. It is imperative to develop socially inclusive EE programs through capacity-building initiatives within the ESG focus on developing social skills, fostering collaboration, and promoting social responsibility to address environmental challenges collectively. This also requires implementing community-based projects that address social aspects and challenges faced by different communities within the MENA region.

5.3 Governance

Effective governance is critical for addressing environmental issues in the MENA region. The enhancement of the governance aspect of EE through the integration ESG principles in the MENA region involves practical applications as follows:

5.3.1 Collaborative Governance Structures

Governance is conceptualized as a framework comprising values, policies, and institutions through which a society navigates its economic, political, and social matters¹⁰⁰. Governance mechanisms can enhance the effectiveness of environmental education and it plays a crucial role in change and reform. It is argued that countries can effectively address environmental issues by improving their standards in environmental governance¹⁰¹. Sound governance mechanisms entail responsibility and due regard to satisfy and meet the desires of different groups of stakeholders. We contend that a country's level of democracy corresponds positively with increased government sector engagement in advancing social and environmental sustainability, as well as in shaping the governance landscape, including corporate governance. There is the need for a more collaborative governance structures within the ESG-oriented EE framework in the region. It is critical to emphasize the importance of partnerships and coordination among governments, non-

⁹⁹ Al-Marri, M., Pinnington, A. H., 'Managing Sustainability Projects for Social Impact from a Corporate Social Responsibility Perspective' (2022) 14 Sustainability 6418.

¹⁰⁰ UNDP and EU, Governance Indicators: A User Guide (Washington, DC: United Nations, 2004)
https://www.un.org/ruleoflaw/files/Governance%20Indicators_A%20Users%20Guide.pdf accessed 21 March 2024.

¹⁰¹ Asongu, S. A., Odhiambo, N. M., 'Enhancing governance for environmental sustainability in sub-Saharan Africa' (2021) 39(1) Energy Exploration & Exploitation 444-463.

governmental organizations, educational institutions, and local communities to enhance the effectiveness of environmental education programs in MENA.

5.3.2 Policy Integration

This involves aligning ESG principles with policy objectives and actions to achieve sustainable outcomes. In essence, it emphasizes the integration of ESG criteria into policy formulation, implementation, and evaluation to promote a holistic and responsible approach to addressing various challenges and fostering sustainable development. Policymakers in the region are encountering growing challenges in striking a balance between the pursuit of sustainable economic growth and the preservation of natural ecosystems¹⁰². In the MENA, there is need to integrate environmental education policies into broader governance frameworks ensuring that EE policies are aligned with national and regional environmental goals, fostering coherence and synergies in governance approaches. Governments need to play a strategic role in supporting EE initiatives and aligning them with ESG principles. Regulators and policymakers should implement policies and regulations that promote ESG. One key objective for policymakers is to change citizens perceptions of ESG as mere philanthropism in the MENA by effectively conveying its benefits to both them and society through environmental education.

5.3.3 Stakeholder Engagement and Partnerships

Partnerships represent innovative governance models capable of synergizing diverse expertise and resources across civil society, government, financial institutions, donors, and academia and business sectors. The promotion of multi-stakeholder partnerships involving governments is increasingly recognized as pivotal for achieving the SDGs¹⁰³. The United Nations Agenda 2030 underscores the significance through "Goal 17 – Global Partnership for Development," aiming to foster successful SDG implementation and revitalize the global partnership for sustainable development. Therefore, partnerships are crucial in scaling up EE efforts in the MENA region by facilitating active engagement of diverse stakeholders within the governance structure of EE. This can delve into the intricacies of environmental

¹⁰² Omojolaibi, JA, Nathaniel SP, 'Assessing the Potency of Environmental Regulation in Maintaining Environmental Sustainability in MENA Countries: An Advanced Panel Data Estimation' (2022) 22(3) *Journal of Public Affairs* e2526.

¹⁰³ Eweje G, Sajjad A, Nath SD, Kobayashi K. 'Multi-stakeholder partnerships: A catalyst to achieve sustainable development goals' (2021) 39 *Marketing Intelligence & Planning* 186.

governance structures, examining how policies are formulated and implemented as collaborative partnerships with local environmental organizations, NGOs, and governmental bodies allow citizens to actively engage in addressing environmental challenges. This strategy aims to develop and implement effective EE programs through transparent collaboration and resource allocation, leveraging the expertise of various stakeholders.

6. ADDRESSING THE CHALLENGES TO INTEGRATING ESG INTO ENVIRONMENTAL EDUCATION: RECOMMENDATIONS

Addressing the challenges to integrating ESG highlighted in section 3.1 requires concerted efforts from policymakers, educators, civil society organizations, and international partners to prioritize ESG principles in educational policies, allocate sufficient resources, and build capacity among stakeholders. Targeted interventions are further recommended below:

A. Inform Adaptive Policy Responses to Political Dynamics

Addressing political instability and regulatory challenges requires adaptive policy responses that prioritize long-term sustainability objectives and account for dynamic political dynamics in the MENA region. Policy coherence, stakeholder engagement, and institutional capacity-building are essential for fostering an enabling environment for ESG integration in environmental education. This calls for stakeholder collaboration and capacity-building initiatives to navigate political complexities effectively.

B. Develop robust research to inform ESG-EE interventions

There is a need for more research to identify policy gaps, barriers, and opportunities for advancing ESG education agendas in the region. Sharing research findings widely will increase visibility, promote knowledge, and inform evidence-based decision-making in ESG-EE interventions. Further, research that fosters collaboration between stakeholders, and incorporates local knowledge and expertise to ensure relevance to regional context is highly beneficial.

C. Harness technology for ESG education

Addressing technology gaps and the digital divide is essential for ensuring equitable access to ESG-integrated environmental education in the region. Policymakers, educators, and stakeholders must prioritize investments in technology infrastructure, digital literacy programs, and localized educational content to bridge the digital divide.

D. Ensure inclusive participation to address equity concerns

By leveraging opportunities for youth empowerment, community partnerships, and inclusive strategies, stakeholders can enhance public awareness and engagement, driving meaningful progress towards sustainability goals in the region. Inclusive partnerships that prioritize diversity, equity, and representation of marginalized groups, while ensuring that ESG-EE interventions address targeted local needs is crucial.

E. Develop broader awareness-raising efforts to promote ESG education

It is expedient to launch public awareness campaigns and community engagement initiatives to raise awareness about the importance of ESG education and mobilize public support for ESG initiatives. This can be facilitated via media, social platforms, and community outreach events to disseminate information, foster dialogue, and inspire action towards sustainable development.

F. International Partnerships

Engaging with international organizations, such as UNESCO, UNICEF, and the World Bank, provides access to global expertise, funding opportunities, and best practices in ESG-EE. International partnerships will facilitate knowledge exchange, capacity-building, and learning across countries and region.

G. Regional Collaboration

Strengthening collaboration among MENA countries will foster regional cooperation, knowledge sharing, and joint initiatives on sustainability education. Regional partnerships will enable the countries to leverage shared experiences, address common challenges, and harmonize ESG-EE policies and practices within the MENA context.

7. CONCLUSIONS

Environmental Education stands as a pivotal element within the broader framework of ESG principles. It plays a crucial role in fostering understanding of individual impacts on the environment and promoting sustainable practices. However, upon examining the state of research in EE within the MENA region and its alignment with ESG principles, notable observations have surfaced. The current discourse reveals a deficiency in addressing a crucial factor within the social and governance dimensions. This analysis highlights a limited emphasis on social equity and governance within the existing body of MENA-focused EE and

ESG literature. Recent articles touch upon various aspects of sustainability, but there is a discernible gap in addressing the social implications and governance considerations necessary for a comprehensive environmental education reform. The discourse tends to fall short in recognizing and responding to the environmental social and governance aspects exacerbated by environmental issues, faced by different communities within the region. As social and governance aspects gain prominence in global sustainability discussions, it becomes imperative for MENA-focused EE research to evolve in these areas. Future endeavours should extend beyond prevalent narratives of environmental problem-solving, delving into intricate intersections of social justice, equitable governance, and environmental sustainability. This review emphasizes the need for increased empirical engagement with policy origins and enactment, specifically directing attention toward the integration of social considerations and equitable governance practices within the MENA region's EE discourse.

By adopting a more holistic approach to environmental education research, addressing interconnected challenges becomes possible. Tailoring programs for specific audiences, collaborating with local communities, incorporating ESG into the curriculum, partnering with NGOs, and utilizing technology emerge as practical strategies to integrate ESG into EE and promote sustainable practices in the MENA region.