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THE ROLE OF THE TEXTILE INDUSTRY AND PERMITTING SYSTEMS IN ADVANCING THE ENVIRONMENTAL DIMENSIONS OF THE SDGs IN THE MENA REGION

Aphrodite Smagadi* & Andrea Curcio Lamas**

ABSTRACT

The textile industry plays a key role in driving development and human welfare, but it is also a sector struggling to address its contribution to the triple planetary crisis – climate change, biodiversity loss, and pollution. In the Middle East and North Africa (MENA) region, the environmental implications are compounded by the region's water scarcity, land degradation and energy dependence. This article emphasises the urgent need to transition towards a sustainable and circular textile value chain to accelerate the achievement of the United Nations Sustainable Development Goals (SDGs). In this respect, permitting processes play a key role. However, the role of permitting systems in driving us towards a sustainable economy for textiles has not been exhaustively explored, if at all. Drawing upon research conducted by the UNEP Law Division in collaboration with Queensland University of Technology, as well as a broader literature review, this article examines the role of the textile industry in the MENA region and the importance of developing, or strengthening existing, legislation relating to permitting procedures, with a specific focus on Morocco, Türkiye, Jordan, and Egypt. The article underscores the pivotal role of environmental permitting processes in addressing the environmental footprint of the textile sector, mainly related to the production phase of the industry. While many countries already have permit processes in place, there is a need for policymakers to review and strengthen these frameworks to ensure comprehensive integration and address existing gaps. By doing so, countries can more effectively regulate and minimise the environmental impact of textile activities, thereby advancing the environmental dimensions of the SDGs.

Keywords: textile industry, textile value chain, permitting systems, sustainable development goals.

1. INTRODUCTION

The textile industry plays a key role in driving development, trade, and human welfare. In the Middle East and North Africa (MENA) region it is an important source of revenue and employment. The region has long been renowned for its textile hubs, such as Morocco, Jordan, and Egypt. In Morocco, the sector accounted for approximately 15% of the industrial gross domestic product (GDP) and 11% of its exports in 2021.[1] Similarly, Egypt's textile sector holds a prominent position, especially distinguished for its long-staple cotton.[2] Meanwhile, Jordan has experienced substantial growth over the past decade in its textile industry, solidifying its position as one of the country's primary exports.[3]

However, alongside its economic benefits, the textile industry also grapples with its contribution to the triple planetary crisis – climate change, biodiversity loss, and pollution. The sector consumes 215 trillion litres of water per year and is responsible for 9% of annual microplastics losses to the oceans.[4] It is also responsible for 2-8% of the global greenhouse gas (GHG) emissions.[5] Its environmental impact has been exacerbated by increasing rates

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1 International Finance Corporation (IFC), *Thematic Review: Circularity and Morocco's Textile Industry* (IFC, 2023) 7.

2 Organisation for Economic Cooperation and Development (OECD) and others, *Production Transformation Policy Review of Egypt: Embracing Change, Achieving Prosperity* (OECD Publishing, Paris 2021).

3 International Labour Organization (ILO) and International Finance Corporation (IFC), 'National Economic Contribution of Jordan's Garment, Textile and Leather Industry' (2023) 2 <https://betterwork.org/wp-content/uploads/RESEARCH-BRIEF-Value-Added-English-1-1.pdf> accessed 14 December 2023.

4 United Nations Environment Programme (UNEP), *Sustainability and Circularity in the Textile Value Chain – A Global Roadmap* (Paris 2023) 6.

5 UNEP, 'Putting the Brakes on Fast Fashion' (12 November 2018) <https://www.unep.org/news-and-stories/story/putting-brakes-fast-fashion> accessed 4 November 2023.

of over-production and over-consumption.[6] The environmental footprint is further compounded in the region by land degradation, water scarcity and energy dependence.

Given the environmental implications of the industry, building a sustainable textile value chain is vital to accelerating the achievement of the United Nations Sustainable Development Goals (SDGs) in the MENA region, as well as across the globe. In this respect, national permitting systems play a key role. Effective and enforceable permitting frameworks that take due account of actual and potential environmental effects of the industry's activities in an integrated manner are essential to promote and support the transition towards a sustainable economy for textiles at the national, regional, and international level.

Despite the growth and important role of the textile industry in the region, their contributions to social, economic, and environmental development and the pivotal role of permitting procedures in this regard, have not been exhaustively analysed. This article is an initial step at filling this gap. This article examines the role of the textile industry in the region and the importance of developing, or strengthening existing, legislation relating to permitting procedures that protect the environment while supporting the industry. It draws upon research undertaken by the UNEP Law Division and Queensland University of Technology (QUT), who are collaborating to undertake research and prepare a report examining national legislation relevant to the textile industry and permitting procedures in ten countries across all geographic regions, including the MENA region. In addition, the article is based on a literature review of papers and reports addressing the role of the textile industry and environmental permitting regulatory frameworks in the region, with a specific focus on Morocco, Türkiye, Egypt, and Jordan.

The ultimate objective is to raise awareness of the role of the textile industry and permitting systems in contributing to a green and sustainable economy and the achievement of the SDGs. This article defines 'textiles' as all products containing knit or woven textile components, including apparel, footwear, home textiles, technical and medical textiles, etc.[7] The article examines the role of the textile value chain in its entirety (from fibre production to end-of-

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[6] UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 9.

[7] This is the same definition adopted by UNEP in its report Sustainability and Circularity in the Textile Value Chain (n 4).

life), but notes that permitting systems mainly target the manufacturing processes of the value chain.

This article is divided into five sections. Section One is the introduction to the study. Section Two focuses on the concept of sustainable development and the role of the textile industry in the MENA region, particularly focusing on the interface between the SDGs and the textile industry, including the industry's economic and environmental implications. This section also acknowledges the promising signs in the region towards sustainable fashion. Section Three explores the role of permitting systems in advancing the environmental dimensions of the 2030 Agenda with respect to the textile industry and with a particular focus on Morocco, Türkiye, Egypt, and Jordan. The article then presents, in Section Four, high-level recommendations for policymakers looking at strengthening permitting systems to support the transition towards a sustainable textile value chain. Finally, Section Five concludes the article with an overview of the key takeaways of the research presented and the authors' reflections on the way forward.

2. SUSTAINABLE DEVELOPMENT AND THE ROLE OF THE TEXTILE INDUSTRY IN THE MENA REGION

2.1 SDGs for Textiles

The concept of "sustainable development" was first articulated in the 1987 Brundtland Report, which defined it as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. [8] The concept "sustainability" was then established into environmental and development concerns with the Rio Conference in 1992.[9] Ten years later, during the 2002 World Summit on Sustainable Development in Johannesburg, the global community endorsed multilateralism to achieve

[8] Gro Harlem Brundtland, 'Our Common Future: Report of the World Commission on Environment and Development' (Geneva 1987).

[9] Aphrodite Smagadi, 'Analysis of the Objective of the Convention on Biological Diversity: Their Interrelation and Implementation Guidance for Access and Benefit Sharing' (2006) 31 COLUM. J. ENVTL. L. 243, 258.

sustainable development,[10] with the international community renewing its commitment to sustainable development at the 2012 United Nations Conference on Sustainable Development in Rio de Janeiro (Rio+20). A key outcome of Rio+20 was the agreement to develop the SDGs.

The 17 SDGs, and its related targets, adopted by the United Nations in 2015, [11] represent a universal call to action to 'end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity'.[12] The textile industry is 'at the heart of the SDGs'.[13] Sustainability in the industry is central to delivering many, if not all, of the SDGs. The concept of sustainable consumption and production[14] is specifically addressed in the 2030 Agenda for Sustainable Development through Goal 12 and has been later addressed in United Nations Environment Assembly resolutions 2/8, 4/1 and 5/11. Other relevant SDGs include Goal 5 (gender equality), Goal 6 (ensure availability and sustainable management of water and sanitation for all), Goal 8 (promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all), Goal 9 (industry, innovation, an infrastructure), Goal 13 (take urgent action to combat climate change and its impacts), Goal 14 (life below water), and Goal 17 (partnerships for the goals).

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10 Elizabeth Maruma Mrema and Aphrodite Smagadi, 'The United Nations Environment Programme – promoting climate law education in the Middle East and North Africa' in D. Olawuyi, *Climate Change Law and Policy in the Middle East and North Africa Region* (Routledge 2021) 21- 23.

11 UN General Assembly, 'Transforming our world: the 2030 Agenda for Sustainable Development', UN General Assembly Resolution 70/1, 21 October 2015, UN Doc. A/RES/70/1.

12 United Nations Development Programme, 'The SDGs in Action – What are the Sustainable Development Goals' <www.undp.org/sustainable-development-goals#:~:text=The%20SDGs%20are%20designed%20to,the%20SDGs%20in%20ever% 20context> accessed 10 November 2023.

13 Alka Madhukar Thakker and Danmei Sun, 'Sustainable Development Goals for Textiles and Fashion' (2023) 30 Environmental Science and Pollution Research 101989, 1.

14 See also Principle 8 of the Rio Declaration, which provides that '[t]o achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.'

Ultimately, sustainable development, and the SDGs, aim to achieve a balance between economic, social, and environmental concerns making these the three core pillars of sustainable development. The sections below explore the role of the textile industry in the region in addressing these pillars to better understand the importance of the industry and the need to strengthen regulatory frameworks to accelerate the achievement of the SDGs.

2.2 Economic and social implications

The textile industry plays an important role in driving development, trade, and human welfare.[15] For many countries it is highly significant in societal, economic, and industrial terms. While textile manufacturing is mainly dominated by Asian countries,[16] the industry also plays a significant role in the MENA region. The Middle East and Africa textile garment market is estimated to account for almost USD 31.7 billion by 2030.[17] The industry's contribution in the region includes manufacturing, distribution, and retail and key aspects of the industry's role include economic contribution, employment generation, export revenue, and foreign investment.

In Northern Africa, countries like Morocco and Egypt have long been renowned as textile hubs. In 2016-18, Morocco was Africa's largest apparel manufacturer by total manufacturing value added, followed by Egypt.[18] The industry is central to Morocco's economy, being one of the main sectors attracting foreign direct investment,[19] and accounting for 15% of industrial GDP and 11% of exports.[20] The textile sector represents 17.7% of the

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15 UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 12.

16 Shadia Moazzem and others, 'Environmental impact of apparel supply chain and textile products' (2022) 24 Environment, Development and Sustainability <https://doi.org/10.1007/s10668-021-01873-4> accessed 20 November 2023.

17 'Middle East and Africa Textile Garment Market – Industry Trends and Forecast to 2030' (Data Bridge Market Research, November 2022) <https://www.databridgemarketresearch.com/reports/middle-east-and-africa-textile-garment-market> accessed 18 November 2023. The countries covered in Data Bridge Market Research's calculation include 'Egypt, Saudi Arabia, United Arab Emirates, South Africa, Israel, and the Rest of the Middle East and Africa.'

18 OECD and others, Production Transformation Policy Review of Egypt (n 2) 41.

19 United Nations Economic Commission for Europe (UNECE), Environmental Performance Reviews: Morocco – Second Review (Geneva 2022) 5.

20 IFC (n 1) 7.

companies in the industrial sector, providing 97,265 jobs (21% of all jobs in industry).[21] Similarly, the textile sector is amongst the main sectors in Egypt.[22] It accounts for 20% of manufacturing employment, 3.6% of total manufacturing value added and 10% of total exports.[23] Egypt is particularly renowned for its long-staple cotton.[24] From the 1900s, cotton production became the main raw material used by Egyptian industries.[25] Nowadays, Egypt supplies about 17% of global long-staple cotton, while local consumption is about 18%.[26] Cotton is key to the textiles market, being the most widely used natural fibre in textiles.[27]

In the Middle East, a close look at key players, such as Jordan, Saudi Arabia, and the United Arab Emirates (UAE), reveal the significant economic and social impact of the textile industry in this region. Jordan's garment, textile, and leather industry is among the country's primary export sectors.[28] The industry's exports have more than doubled in the last decade, from USD 1.12 billion in 2012 to over USD 2.26 billion in 2022, currently accounting for 7.7% of the country's manufacturing GDP.[29] The contribution of the sector to Jordan's economy is such that it has been identified as a priority economic sector in the Government's Economic Modernization Vision.[30] The Vision anticipates that the garment, textile, and leather industry has the potential to increase its export by three to four times over the next ten years, creating over 100,000 new jobs.[31] Presently, it is estimated that the industry employs 89,900 workers, which represents about 39% of Jordan's manufacturing workforce.[32]

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21 UNECE (n 19) 336.
22 OECD and others, Production Transformation Policy Review of Egypt (n 2) 20.
23 Ibid 24.
24 Ibid 24.
25 Ibid 37.
26 Ibid 41.
27 Vivek Voora, Cristina Larrea, Steffany Bermudez, 'Global Market Report: Cotton' (2020) JSTOR <www.jstor.org/stable/resrep26555> accessed 14 December 2023.
28 ILO and IFC (n 3) 2.
29 Ibid 2.
30 Ibid 2.
31 Ibid 2.
32 Ibid 3.

Neighbouring Saudi Arabia is becoming 'an international hub for fashion'.[33] According to the Saudi Fashion Commission's report on 'The State of the Fashion in the Kingdom of Saudi Arabia 2023', the country's fashion industry employs about 230,000 people (1.8% of the domestic workforce), and contributed $12.5 billion (1.4%) of GDP in 2022.[34] It is a vibrant industry in Saudi, with fashion sales expected to increase by 48% from 2021 to 2025.[35] The report also acknowledges the Kingdom's strong dependence on imports, spending more than $7 billion on imported fashion goods in 2021.[36] This is seen as representing a key opportunity for the country to cultivate a sector encompassing all aspects of the value chain – from design and manufacturing to logistics and retail.[37] While the Saudi fashion industry has mainly been dominated by retailing activities, according to the 2023 report, 'the Saudi fashion value chain is expected to develop deep manufacturing and related services capabilities over the next decade'.[38]

Similarly, in the UAE, Dubai has been identified as the 'shopping capital' among the Gulf Cooperation Council (GCC)[39] member states.[40] The significant role of the industry in UAE is by no means new. In 2014, the UAE textile industry was identified as 'the country's largest trading sector after oil', [41] exporting textiles to more than 50 countries. Nowadays, the

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33 'Saudi Arabia's Fashion Industry: A Catalyst for Economic Growth' Outlook (Canada, 1 September 2023) <www.outlookindia.com/international/canada/saudi-arabia-s-fashion-industry-a-catalyst-for-economic-growth-news-314935> accessed 14 December 2023.

34 Fashion Commission, 'The State of Fashion in the Kingdom of Saudi Arabia 2023' (2023) 8 <https://fashion.moc.gov.sa/assets/2023_Saudi_State_of_Fashion_Report%20(E).pdf> accessed 14 December 2023.

35 Ibid 11.

36 Ibid 8.

37 Ibid 8.

38 Ibid 36.

39 The GCC is a regional, free-trade economic community between Saudi Arabia, Qatar, Oman, Kuwait, Bahrain, and the United Arab Emirates.

40 Fashion Commission (n 34) 19.

41 'UAE textile industry country's largest trading sector after oil' Gulfnews (Dubai, 13 August 2014) <https://gulfnews.com/business/uae-textile-industry-countrys-largest-trading-sector-after-oil-1.1371817> accessed 14 December 2023.

fashion industry continues to boom. According to the Majid Al Futtaim,[42] the fashion sector in UAE experienced a 53% rise in 2022 in tourist spending on fashion products compared to 2021.[43] The region has been described as 'a haven of growth' for fashion, most notably regarding luxury items.[44]

Despite the important economic and social implications of the industry, human rights abuses remain rife in the industry, with inequality, exploitation, underpayment, forced labour, gender-based violence and severe health risks amongst some of the key issues that must be addressed to ensure all workers have appropriate working conditions.[45] In this regard, Goal 5 is particularly relevant given that most workers in the global textile sector are women.[46] Women represent an average of 68% of the garment workforce, and 45% of the overall textile sector workforce.[47] While the sector has enabled the increased economic empowerment of women, significant deficiencies in decent work persist, such as underpayment, forced labour, health risks, discrimination, violence, and harassment.[48] As explained by the International Labour Organization, these precarious conditions are worsened by the dominant 'fast fashion'[49] business model.[50] Further, it is also well-known that the textile sector also employs underaged children at lower wages to lower the production costs.[51] In this regard, advancing SDG 5 is a priority for the

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42 Founded in 1995, Majid Al Futtaim is described as being 'the leading shopping mall, communities, retail and leisure pioneer across the Middle East, Africa and Asia'(see their website at https://www.majidalfuttaim.com/en/who-we-are/our-journey# 1995).

43 Majid Al Futtaim, 'State of UAE Retail Economy: A Perspective Based on Q4 2022 and Full-Year Market Data and Consumer Behaviour', 20 <www.majidalfuttaim.com/docs/default-source/reports/state-of-the-uae-retail-economy-q4-2022.pdf?s fvrsn=435904c_3> accessed 14 December 2023.

44 Ibid 20.

45 UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 12.

46 ILO, 'How to achieve gender equality in global garment supply chains' (March 2023)<www.ilo.org/infostories/en-GB/Stories/discrimination/garment-gender#introduction> accessed 15 December 2023.

47 UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 7.

48 ILO, 'How to achieve gender equality in global garment supply chains' (n 46).

49 "Fast fashion" can be described as business models where clothes are made at low prices, fast turnaround, and with multiple collections a year.

50 ILO, 'How to achieve gender equality in global garment supply chains' (n 46).

51 Thakker (n 13) 6.

textile industry. These concerns are of paramount significance, which also influence the course of a sustainable economy. Regrettably, these crucial matters are not examined in depth in this article, but the authors note their potential to shape the foundation of a sustainable economy.

2.3 Environmental implications

Despite the textile industry's important role to the global and national economies, the industry is also struggling to address its wide-reaching environmental impacts. Unsustainable patterns of production and consumption are exacerbating the triple planetary crisis - climate change, biodiversity loss, and pollution.[52] The global consumption of clothing is 400% more than the amount consumed two decades ago,[53] while the number of times that an item is used before it is discarded has declined approximately 36% in the last 15 years.[54] Rates of consumption dictate the amount of energy, and materials used, as well as the handling means of such materials – all of which have an impact on the environment.[55] The fashion industry has been identified as one of the most polluting industries in the world.[56] At the heart of the problem is the largely linear production model (take-make-use-dispose).[57]

The environmental impacts of the textile value chain are wide-ranging, including those associated with climate change, freshwater use, pollution (including chemical and plastic pollution), and biodiversity loss.[58] It is estimated that the textile value chain contributes between 2-8% of GHGs.[59] Even accounting for existing goals and work, the fashion industry is

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52 UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 12.

53 Xuandong Chen and others, 'Circular Economy and Sustainability of the Clothing and Textile Industry' (2021) Mater Circ Econ 3, 1 <https://doi.org/10.1007/s42824-021-00026-2> accessed 20 November 2023.

54 Ellen MacArthur Foundation (EMF), 'A New Textiles Economy: Redesigning Fashion's Future' (2017) 19.

55 Chen (n 53) 1.

56 Nilesh Bhandari and others, 'Sustainable Production and Consumption' (2022) 31 European Federation of Chemical Engineering 220, 222 <https://doi.org/10.1016/j.spc.2022.02.007> accessed 24 November 2023.

57 IFC (n 1) 1.

58 UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 22.

59 Ibid 7.

calculated to miss the 1.5°C pathway outlined in the Paris Agreement by 50%.[60] However, it is estimated that increasing the usage of a garment twofold has the potential to cut down GHGs by 44%.[61] In addition, the textile value chain is estimated to consume 215 trillion litres of water per year.[62] Cotton production, in particular, 'has a track record of water intensive-management practices'.[63] It is estimated that 2,700 litres of freshwater are required to produce one single cotton t-shirt; this amount of water is enough to fulfil one person's drinking needs for 2.5 years.[64] The production of cotton also requires pesticide use, leading to the release of chemicals into water sources.[65] In fact, it is estimated that approximately 3,500 chemicals are used in textile production,[66] with the production of 1 kg of textiles requiring 0.58 kg of chemicals.[67] In addition, it is also estimated that the textile value chain is responsible for 9% of annual microplastics losses to the oceans.[68]

In the MENA region, the environmental impacts of the textile industry are compounded by the region's water scarcity and energy dependence.[69] In Morocco, for example, the industrial sector is energy intensive, with textiles lying amongst one of the sectors with the highest consumption level[70] and one of the main sources of industrial emissions.[71] Industrial emissions are the

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60 Ibid 13.
61 EMF (n 54) 46.
62 UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 6.
63 Voora (n 27) 5.
64 European Parliament, 'The Impact of Textile Production and Waste on the Environment' (5 June 2023), <www.europarl.europa.eu/news/en/headlines/society/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographics> accessed 15 November 2023.
65 Voora (n 27) 5.
66 KEMI, 'Report 6/14: Chemicals in Textiles – Risks to Human Health and the Environment' (2014) 7 and 55 <https://www.kemi.se/en/publications/reports/2014/report-6-14-chemicals-in-textiles> accessed 15 December 2023.
67 EMF (n 54) 133.
68 UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 6.
69 Joelle Azzam, 'From Fast to Sustainable Fashion: The Middle East is Leading the Way!' (Libas, 21 March 2023) <https://libas.ae/SustainablefashionintheMiddleEast> accessed 15 December 2023.
70 UNECE (n 19) 343.
71 Ibid 190.

second major source of air pollution, only after vehicle emissions.[72] The discharge of industrial wastewater, including from the textile industry, is also a key source of pollution, with 98% of the wastewater being discharged into the sea.[73] Industrial waste is also a major source of soil and groundwater pollution; waste is mainly found in the Greater Casablanca region, coming mostly from a limited number of sectors, which include the textile sector.[74] The sector's high-water demand can also strain local water supplies and further exacerbate water shortage issues, particularly in countries facing a water shortage, such as Egypt, Saudi Arabia and UAE.[75] In addition, over the last 10 years the region has also suffered political, institutional and economic fragmentation,[76] which all constitute important barriers to implementing effective environmental policies.

The environmental challenges associated with the industry are predicted to increase over time, with an estimated increase in demand to $2 trillion by 2027, with a large part of the demand coming from new middle-class consumers from markets including the Middle East.[77] However, as outlined in further detail below, the increasing awareness of the environmental implications of the industry is significantly pushing countries and consumers towards more sustainable supply chains and production processes, which is crucial to achieve the SDGs.

2.4 Towards Sustainable and Circular Textile Business Models

This article argues that a transformation towards sustainable and circular textile business models is key to achieving the SDGs. While sustainability is

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72 Ibid 297.

73 Ibid 341.

74 Ibid 342.

75 Bader Alhafi Alotaibi and others, 'Water Scarcity Management to Ensure Food Scarcity through Sustainable Water Resources Management in Saudi Arabia' (2023) 15(13) Sustainability <https://doi.org/10.3390/su151310648> accessed 20 November 2023.

76 Deutshe Geselleschaft fur Internationale Zusammenarbeit GmbH (GIZ), 'Assessment Report – The Circular Economy Ecosystem in the MENA Region' (2023) 11 <https://greentechknowledgehub.de/sites/default/files/2023-05/230502%20EXI%20Publikation%20CE%20Mena%20Web.pdf> accessed 20 November 2023.

77 UNEP, Sustainability and Circularity in the Textile Value Chain (n 5) 13.

at the core of the SDGs, circularity is a means to achieve sustainability, thereby being central to the delivery of many of the SDGs.[78] Circular economy principles 'can help promote more sustainable production and consumption patterns, reduce waste and pollution, conserve natural resources and create economic opportunities'.[79] The purpose of circular economies is to retain the value of products, materials, and resources within the economy for the longest period of time possible, while minimising waste generation at the same time.[80] In addition, it is estimated that the introduction of sustainable and circular business models could create a net of six million new jobs by 2030.[81] Further, each 1% increase in market share of circular business models is likely to reduce GHG emissions by 13 million tCO2e.[82] Sustainability and circular economy principles apply to all sectors - including the textile industry.[83]

In fact, sustainability and circularity can be described as 'one of the most important trends affecting [the fashion] industry' in recent years.[84] Consumer behaviours and preferences are already shifting the fashion market towards sustainable and circular textile business models. Younger generations are paying increasing attention to sustainability and circular economy issues, preferring brands that pay attention to social and environmental issues and avoiding others.[85] In addition to consumer preference shifts, law plays a critical role in establishing viable sustainable and circular frameworks. As outlined in UNEP's Second Global Report on Environmental Rule of Law, published on 22 November 2023,[86] '[e]ffective and well-implemented laws

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78 Ibid 18.

79 GIZ (n 77) 6.

80 Ibid 11.

81 ILO, *World Employment Social Outlook 2018: Greening with Jobs* (2018) 52.

82 McKinsey and GFA, 'Fashion on Climate' (2020) 15 <https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/fashion%20on%20climate/fashion-on-climate-full-report.pdf> accessed 15 December 2023.

83 Patrizia Gazzola and others, 'Trends in the Fashion Industry. The Perception of Sustainability and Circular Economy: A Gender/Generation Quantitative Approach' (2020) 12 Sustainability 2809, 6 <https://doi.org/10.3390/su12072809> accessed 25 November 2023.

84 Ibid 6.

85 Ibid 5 and 15.

86 The report is available online at: https://wedocs.unep.org/20.500.11822/43943

coupled with empowered institutions provide the critical enabling environment necessary to deliver the environmental dimensions of the 2030 Agenda for Sustainable Development'.[87]

Policymakers (e.g. local/regional/national governments and international governmental organizations) have a key role to play by enacting and enhancing laws and regulations aligned with the SDGs and circular initiatives across the textile value chain. Policymakers can implement incentives, restrictions, and enforcement – creating the right conditions for the transition to a sustainable and circular textile value chain.[88] Examples of regulatory instruments include tax incentives, extended producer responsibility (EPR) schemes, restrictions, or prohibitions of hazardous chemicals, harmonizing standards and certification schemes, among many others. All these tools are essential in driving the transformation, although the choice of legislation and implementation will depend on the specific country circumstances.

Some countries have already started implementing legal frameworks to move towards a circular textile economy. In 2007, France became the pioneer in introducing a legal framework for managing textile waste through an EPR[89] scheme.[90] More recently, in March 2022, the European Union (EU) published its strategy for sustainable textiles, which includes a range of measures, such as mandatory eco-design requirements, bans on the destruction of unsold goods, and supply chain due diligence.[91] The EU has also established binding

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87 UNEP, Environmental Rule of Law: Tracking Progress and Charting Future Directions (2023) 28.

88 UNEP, Sustainability and Circularity in the Textile Value Chain – A Global Roadmap – Annex For Policymakers (2023).

89 As defined by EY, 'EPR is an environmental policy measure that extends a producer's responsibility to the full lifecycle of a product, which could include not only waste, recycling, return of products but also product design' ('EU Commission and Council take steps as part of the circular economy action plan – new rules on textiles and batteries' (EY, 21 July 2023) <www.ey.com/en_gl/tax-alerts/european-commission-releases-new-rules-as-part-of-circular-econo> accessed 25 November 2023.

90 Mark Weick and Nicole Ray, 'Regulatory landscape of the circular economy' (EY, 2022) 6.

91 Ibid 6.

requirements to implement textile EPR schemes by 2025.[92] Although other countries, such as the USA, China and Germany, among others, are also implementing circularity strategies, '[a]t the moment, targeted policies are still in their nascent phase'.[93] However, it is expected that these policies will intensify in response to stakeholder pressure, leading to a more regulated industry in the years ahead.[94]

Shifts towards sustainability and circularity are already influencing the textile industry in the MENA region, but regulatory progress is slow. A recent study published by Germany's Agency for International Cooperation found that although circular economy practices in the region[95] are emerging, particularly in the context of waste management, renewable energy use and water resource management,[96] 'the MENA region seems to be lacking in [circular economy] initiatives around material circularity targeted on closing the loop by focusing on the full lifecycle of products and services'.[97] That said, an increasing awareness of sustainability considerations in the global textile industry are influencing the market in the region. For example, the Saudi Fashion Commission's latest report on the state of the fashion industry in the Kingdom explicitly provides that 'Saudi Arabia recognises the importance of developing a fashion ecosystem that puts sustainability at its core'.[98] Similarly, building a sustainable economy is a key priority of UAE's Abu Dhabi Economic Vision 2030,[99] and in 2021, the UAE Cabinet approved the UAE Circular Economy Policy – 'a comprehensive framework for determining the country's approach to achieving sustainable governance and

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92 Ibid 6.
93 Ibid 6.
94 Ibid 6.
95 The study focuses on 'Algeria, Egypt, Jordan, Lebanon, Morocco, Tunisia, and the Palestinian Territories'.
96 GIZ (n 76) 6 and 14.
97 Ibid 16.
98 Fashion Commission (n 34) 8.
99 The Government of Abu Dhabi, 'The Abu Dhabi Economic Vision 2030' (2008) <www.actvet.gov.ae/en/media/lists/elibraryld/economic-vision-2030-full-version en .pdf> accessed 25 November 2023.

the ideal use of natural resources'.[100] Its priorities include sustainable manufacturing. As part of the policy, UAE aims to promote the import and local production of products that are designed, manufactured, repaired, reused, remanufactured, and recycled in a more resource-efficient manner. This initiative aims to reduce pollution and ensure that valuable materials and resources are kept in use and not lost to landfills.[101]

These trends are promising signs of the shift that is required to move towards a sustainable textiles value chain. However, further progress is crucial, with cooperation and coordination among all stakeholders at all levels being critical.[102] This requires the active involvement of industry players (including brands, retailers, and raw materials producers), policymakers, non-governmental organizations, international organizations, financial institutions, among others.[103] UNEP's 2023 report, Sustainability and Circularity in the Textile Value Chain: A Global Roadmap, outlines what each stakeholder can do to transform the textile value chain into one that is sustainable and circular.[104] Among other things, transforming the industry will require adopting circular business models, reducing overproduction, doubling the average uses of garment, and improving energy efficiency.[105] In this regard, policymakers have a key role in creating the regulatory frameworks that will enable all stakeholders to drive the necessary transformation. In doing so, there are a wide range of tools that policymakers can consider, considering the specific circumstances and needs of each country. This article specifically examines the role of permitting systems as a key tool in advancing the transformation. As outlined below, developing, and / or strengthening existing, permitting systems to regulate the environmental implications of the textile industry constitutes a key instrument in advancing the environmental dimensions of the SDGs – in the MENA region and beyond.

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100 Government of United Arab Emirates, 'UAE Circular Economy Policy 2021-2031' (2021)<https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/policies/economy/uae-circular-economy-policy> accessed 20 December 2023.

101 Ibid 5.

102 UNEP, Sustainability and Circularity in the Textile Value Chain (n 4) 7.

103 Ibid.

104 Ibid.

105 Ibid 72.

3. PERMITTING SYSTEMS IN THE MENA REGION

3.1 The role of permitting systems in regulating environmental impact

Permitting processes are a key instrument for regulating industries' impacts on the environment. Business activities may require a range of permits or licenses to be able to operate, such as business permits, building permits, transportation permits, as well as environmental permits. The extent to which such permits address and integrate environmental considerations has a direct impact on the way business/industry's activities impact the environment. Given the textile industry's actual and potential environmental impacts, permitting systems are a key tool to regulate these impacts and urge the industry towards adopting more sustainable and circular approaches.

Building permits, for example, can integrate environmental considerations to promote more sustainable construction practices. Such permits may integrate environmental concerns, such as energy efficiency, water saving, stormwater management, and landscape requirements, as well as restrictions on the type of materials used. By incorporating these requirements into building permits, authorities ensure that construction activities align with environmental and sustainability goals and minimises the environmental footprint of the installation.

In addition to building permits, many countries require textile producers to obtain environmental permit/s to be able to operate the installation. These may relate to the discharge of contaminants from the factory to land, water, or air for example. Environmental permits are of particular relevance given that their purpose is for regulatory authorities to specify, in a transparent and accountable manner, binding requirements for sources of significant environmental impact.[106] The following sections focus in more detail on environmental permitting systems and their role in the region.

3.2 An overview of environmental permitting systems

Environmental permits or licences typically set limits for pollutant emissions or discharges into air, water, and land, and for the generation of waste.

[106] OECD, 'Integrated Environmental Permitting Guidelines for EECCA Countries' (2005) 12.

Permits can also incentivize the protection of the environment.[107] As outlined in further detail below, there are two key types of permitting systems: single-medium and integrated.

Single-medium permitting is known as the traditional approach.[108] It originates from the evolution of environmental regulations, which were tailored to address specific environmental concerns as these arose. This refers to separate arrangements being developed over time to address different environmental aspects, such as air quality, water quality, soil contamination, etc. Over time, this type of permitting processes can result in numerous permits being required for a single installation, which are issued and managed by different authorities.[109] Further, this system does not account for the unintended or consequential issues that may arise from adopting a solution to a specific environmental problem. For example, addressing an air pollution issue through methods like gaseous emission scrubbing could inadvertently give rise to water pollution, and vice versa.[110] The need to consider the environment as a whole led to the evolution of the integrated permitting system.

Integrated permitting is a system that considers the effects on all environmental media (air, water, and land) together. The aim of safeguarding the overall environment has prompted most Organisation for Economic Cooperation and Development (OECD) countries to implement integrated permitting systems for large industrial facilities.[111] This system also includes the provision of permit conditions based on the concept of best available techniques (also referred to as "BAT"), which balances the environmental benefits against the operational costs.[112] This system of permitting was

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107 Ibid 12.
108 Ibid 12.
109 Ibid 12.
110 Ibid 13.
111 OECD, 'Guiding Principles of Effective Environmental Permitting Systems' (2007) 3.
112 Ibid 8-9.

mandated across the EU in 1996 by Directive 96/61/EC on Integrated Pollution Prevention and Control.[113]

Environmental permitting systems are closely linked to environmental impact assessments (EIAs). An EIA is a tool to assess the potential environmental impact of a proposed development or activity, while environmental permitting is the process of granting permission to undertake the development or activity. These processes often overlap, so it is important to ensure these processes are coordinated; environmental assessment and permitting processes should be implemented in a manner that maximises the effectiveness of both processes and avoids overlaps.[114]

There is limited academic literature on environmental permitting. According to the analysis undertaken by QUT, the OECD's guidelines for effective environmental permitting systems, published in 2005 and 2007, are the main available instruments providing guidance on the matter at the international level.[115] These documents were released nearly 20 years ago, underscoring the pressing need for the development of revised and updated guidelines, including consideration of whether these guidelines are suitable for all countries. The fundamentals of environmental permitting systems, according to the OECD's work, include the principles set out in Table 1 below.

Table 1: Fundamentals of an environmental permitting system

Principle	Overview
Principle 1 - Permitting of all stationary sources of significant pollution	Installations with a 'significant environmental impact' (as defined in national legislation) should require permits as a precondition to their operation.
Principle 2 -	'Major pollution sources' (as defined in national

[113] Ibid 9.
[114] Ibid 12.
[115] UNEP, 'National Permitting Systems in the Textile Industry' (provisional title, work in progress).
[116] OECD, 'Guiding Principles of Effective Environmental Permitting Systems' (2007).

Differentiation of regulatory regimes for major and minor pollution sources	legislation) should be subject to integrated environmental permitting on a case-by-case basis, while small and medium-sized enterprises (SMEs) should be subject to a simplified regulatory regime.
Principle 3 - Appropriate permitting authority	'One-stop shopping' systems are encouraged. This refers to systems where applicants deal with one designated competent authority throughout the permitting process.
Principle 4 - Public participation and access to information	The public should be able to review and provide feedback on permit applications before the competent authority issues its decision. The public should also have access to the permit-related information after the permit is granted.
Principle 5 - Extensive stakeholder involvement	Stakeholders should be involved throughout the development of the permitting regulatory framework and the decision-making process for permit applications.
Principle 6 - Outreach to the regulated community	Operators should be aware of their obligations to obtain and comply with relevant permits. Environmental authorities may consider holding preliminary discussions with operators to clarify relevant requirements before lodging the formal permit application.
Principle 7 - Close interaction with environmental assessment	Environmental assessment and permitting processes should be implemented in a manner that maximises the effectiveness of both processes and avoids overlaps.
Principle 8 - Clear and enforceable permit requirements	Permit conditions should be unambiguous and enforceable, based on statutory requirements and technical guidelines.
Principle 9 - Comprehensive scope of an integrated permit	Permit conditions should address a range of issues, including operational matters, emission limit values, improvement programmes, and reporting, notification, and payment

	requirements. The conditions should also specify the validity period of the permit.
Principle 10 - Combined approach to setting emission limit values in integrated permits	Emission limit values in integrated permits should be based on a combination of the environmental quality standards approach (which sets environmental bottom lines) and the technique-based approach (which requires pollution prevention, where possible).
Principle 11 - Availability of technical guidance	The designated competent authority and operator should both rely on the same technical guidance regarding what constitutes best available technology.
Principle 12 - Discretion of the permitting authority	The designated competent authority should have the necessary statutory discretion to identify permit conditions on a case-by-case basis.
Principle 13 - General binding rules for SMEs with significant environmental impact	Standard permit conditions can be applied to categories of installations with similar production processes and a similar environmental impact through 'general binding rules.' These rules should include emission limit values as well as operational matter requirements.
Principle 14 - Registration of installations with low environmental impact	A simple registration process could apply to installations that do not cause significant environmental impacts. Implementing extensive environmental regulations for these kinds of installations is unlikely to provide environmental benefits.
Principle 15 - Transparent permitting procedure	The permitting procedure should involve several stages, including pre-application activities, the preparation and submission of the application, initial checks of the application by a competent authority, commercial confidentiality considerations, consultations with other relevant authorities and the public, assessment of the

	application and determination of permit conditions, and finally the granting or refusal of a permit. Throughout these processes, it is important to establish time limits to ensure accountability and responsiveness.
Principle 16 – Long permit validity and clear variation and termination rules	Extended validity periods streamline the permitting system and ease the administrative burden. Simple amendment processes may be employed in instances of administrative or minor operational changes. Permit holders should be responsible for revising permits in cases of changes to the regulated process or ownership of the installation. Revocation or suspension of a permit should apply where other enforcement tools have failed to protect the environment.
Principle 17 - Possibility of appeal	Any person or body, including the permit applicant, should have the right to appeal to higher authorities in the event of a refusal to grant a permit or certain permit conditions.

3.3 Environmental permitting systems in the MENA region

The literature addressing environmental permitting frameworks in the MENA region is scarce. Therefore, this article only provides a high-level overview of a limited number of countries in the region. These countries were selected based on information gathered through desktop research of relevant sources and analysis undertaken by QUT, which is still unpublished at the time of completion of this article. These countries are Morocco, Türkiye, Jordan, and Egypt. It is important to note that since the publication of these sources, further updates may have taken place in the respective countries addressed in this section.

3.3.1 Morocco

In Morocco, the construction and operation of industrial facilities (of class 1 and 2 installations)[117] require permits, which may come with requirements to reduce or avoid environmental effects.[118] However, the country does not have a system for granting integrated environmental permits for large industrial installations.[119] Instead, it has a myriad of laws regulating air emissions,[120] wastewater discharges,[121] discharges that may contaminate the coastline,[122] waste generation and disposal,[123] and the use of surface and groundwater.[124] For example, under the Law on Water (No. 36-15 and No. 10-95), standards have been adopted to define water quality and establish limit values for liquid discharges. The limit values can be either general or specific to industrial sectors, and since 2017, the textile industry is subject to specific discharge limit values, which are generally less stringent than the general limit values.[125]

In addition, in 2003 Morocco adopted the Law on Environmental Impact Assessment (No. 12-3), followed by the 2020 Law No.49-17 on Environmental Assessment to remedy the shortcomings of the previous

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117 As of 1 March 2022, the construction and operation of industrial facilities is governed by the Dahir of 25 August 1914 on the Regulation of Unsanitary, Inconvenient or Dangerous Industrial Plants, which classifies industrial installations into three classes depending on the nature of the activity and risk to public safety and hygiene. Class 1 and 2 installations require a permit, whereas class 3 simply require operators to declare their intention to the local authorities before commencing their activity. The classification of activities was introduced by an Order of the Prime Minister in 1933. Class 1 includes the "most dangerous" activities, while class 3 contains the "least dangerous" (UNECE (n 19) 43 and 345.

118 UNECE (n 19) 43.

119 Ibid 46.

120 E.g. the 2003 Law on Combating Air Pollution (No. 13-03), which limits the release of polluting emissions (UNECE (n 19) 43).

121 E.g. the Law on Water (No. 36-15), which requires the authorization and fee payment for any discharge likely to affect the public hydraulic domain. Since 2016, the reuse of wastewater also requires authorization (UNECE (n 19) 43).

122 E.g. the 2015 Law on the Coastal Zone (No. 81-12), which prohibits any discharge that contaminates the coastline (UNECE (n 19) 43).

123 E.g. the Law on Waste Management and Disposal (No.28-00), which industrial waste, among other types of waste, to be treated only in specialized facilities. UNECE (n 19) 44.

124 E.g. in line with the Law on Water (No. 36-15), the water basin agency issues permits for surface and groundwater use. UNECE (n 19) 44.

125 UNECE (n 19) 51.

legislation.[126] Projects likely to have adverse environmental effects are subject to an Environmental Impact Assessment (EIA), and these projects currently include industrial projects such as textiles.[127] Although the 2020 Law No.49-17 addressed several gaps of the previous legislation, deficiencies and implementation issues remain. These include the lack of requirements seeking ongoing environmental reporting, insufficient timeframes to examine EIA reports and proposed projects, and the lack of institutional capacity, particularly regarding training and human resources.[128]

Overall, according to the latest environmental performance review undertaken by the United Nations Economic Commission for Europe (UNECE), Morocco's environmental legal framework is vast, but an integrated environmental permit system, based on BAT, for large industrial installations is lacking.[129] Following its latest review, UNECE recommended the Moroccan Government to consider introducing 'integrated environmental permits based on best available techniques for industrial facilities with a high risk of having negative effects on the environment and the neighbouring populations' (Recommendation 2.1).[130]

3.3.2 Türkiye

Türkiye mostly operates an integrated permit system.[131] To commence operations, operators must obtain an environmental permit that covers air emissions, noise, wastewater discharges, and waste recovery and disposal.[132] However, single permits for other emissions may be needed, depending on their type, capacity, and location.[133] Further, according to the latest OECD

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126 Ibid 46.

127 EIAs must consider several elements, including a qualitative and quantitative assessment of discharges, emissions, waste, noise, light, odour, nuisance, heat and radiation likely to occur during the implementation or operation of the proposed project (UNECE (n 19) 46 and 47.

128 UNECE (n 19) 49.

129 Ibid 63.

130 Ibid 64.

131 OECD, *OECD Environmental Performance Reviews: Turkey 2019* (OECD Publishing, Paris 2019) 93; UNEP, 'National Permitting Systems in the Textile Industry' (n 115).

132 Ibid.

133 OECD, *OECD Environmental Performance Reviews: Turkey 2019* (n 131) 94.

report on Türkiye's environmental performance review, published in 2019, although the country has introduced a consolidated environment permit system, its conditions are not yet based on BAT (although it recognises that Türkiye plans to introduce BAT based permitting in 2024) and in certain circumstances[134] installations are allowed to commence operations before obtaining an environmental permit, which is not consistent with international good practice.[135]

In addition, the country has specific legislation focused on EIAs, with the first instrument implementing EIA dating back to 1993.[136] The legislation classifies activities according to two profiles of environmental risk, which require a different approval process.[137] The first category of activities include those that are likely to have significant environmental adverse effects and require an EIA; the EIA must address the project's impact on nature, including water, soil, noise, air and wildlife habitat, as well as on architectural and archaeological heritage.[138] The second category includes projects not anticipated to have a substantial environmental impact.[139] The assessment procedure in this type of cases is less burdensome than preparing an EIA report, only requiring the completion of a 'project file' which is submitted to the Ministry of Environment, who then decides whether an EIA is required.[140] The activities listed in both categories require operators to also obtain an environmental permit.[141] The list of activities covered in both categories under the 2014 Regulation on EIA included textile activities;[142] the scope of activities was then expanded in 2022, with the enactment of the new

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134 According to the OECD's review, a temporary operation certificate, which is a pre-permit valid up to year, can be approved, allowing operations of a facility to commence without an environmental permit (OECD, OECD Environmental Performance Reviews: Turkey 2019 (n 131) 94).

135 OECD, OECD Environmental Performance Reviews: Turkey 2019 (n 131) 29 and 94.

136 Ibid 93.

137 Norton Rose Fulbright, 'Doing business in Türkiye' (9th edn, 2024) 45.

138 Ibid.

139 Ibid.

140 Ibid.

141 UNEP, 'National Permitting Systems in the Textile Industry' (n 115).

142 Ibid.

Regulation on EIA.[143] In essence, whether textile facilities are subject to environmental scrutiny in Türkiye is determined by whether or not the specific activity is recorded in one of these two categories as having a potential environmental impact.

3.3.3 Jordan

In Jordan, based on QUT's analysis, although it is unclear whether Jordan operates a single or integrated permitting system, environmental permits are primarily centralised at the national level, as opposed to having a system where all government levels share environmental permitting responsibilities.[144] Textile activities are explicitly referred to in the Environmental Impact Assessment Regulation No. 37 of 2005 (Annexes 2 and 3).[145] Specifically, tanning/leather factories are recognised as having a significant environmental impact. These activities are therefore classified as 'Category 1' industry and require a comprehensive EIA study. The textile, leather, wood, paper, and rubber industries are classified as a 'Category 2' industry, and only require an initial EIA study prior to determining whether a more comprehensive EIA is required.[146] Operators are required to obtain environmental permits to establish and undertake an activity with conditions that ensure the operator complies with environmental requirements based on the EIA study.[147] Further, as a water scarce country, significant focus is placed on minimising water consumption in textile processes, which are recognised as having a high environmental impact.[148]

3.3.4 Egypt

In Egypt, based on QUT's analysis, it is also unclear whether the country operates a single or integrated permitting system.[149] As opposed to Jordan,

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143 Zahide Altunbas Sancak ad Selin Nacar Ozturk, 'New Environmental Impact Assessment Regulation Entered into Force in Turkey' (Guleryuz Partners, 23 August 2022) < https://www.guleryuz.av.tr/news-publications/detail/yeni-cevresel-etki-degerlendirmesi-yonetmeligi-yururluge-girdi> accessed 5 April 2024.

144 UNEP, 'National Permitting Systems in the Textile Industry' (n 115).

145 Ibid.

146 Ibid.

147 Ibid.

148 Ibid.

149 Ibid.

permitting responsibilities lie with the State as well as sub-national authorities,[150] and Egypt does not explicitly refer to textiles or garments in its environmental primary legislation.[151] However, Egypt's Ministry of State for the Environment Egyptian Environmental Affairs Agency (EEAA) has published technical guidelines which specifically list textile activities and provide guidance for EIA/permitting within the textile industry.[152] The 'Guidelines of Principles and Procedures for Environmental Impact Assessment'[153] classify projects into three groups based on the degree of environmental impact, and textile projects are included in all groups.[154] All projects are required to undertake an EIA – although to different extents.[155] Category A projects, for example, are only required to complete an EIA form and not a full EIA study, while Category C projects (those deemed to be the projects with the most severe environmental impacts) must undertake a full EIA study prior to the permit being granted.[156] Permits are required for projects within all three categories, and permit holders are legally bound by the permit conditions.[157]

3.3.5 Overall observations

Overall, all countries examined have a permitting system in place, covering activities within the textile industry. In addition, activities considered to have high environmental impact are also subject to EIAs. The existence of a permit process which considers the environmental implications of proposed textile activities is an important entry point to strengthen the regulatory controls of the sector. The benefit of using the permit process as a tool to strengthen sustainability requirements is that it is a regulatory instrument that already exists in these countries. However, further integration of the permitting process, based on BAT techniques, as well as the EIA process is encouraged.

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150 Ibid.
151 Ibid.
152 Ibid.
153 Arab Republic of Egypt, Ministry of Environment, 'Environmental Impact Assessment' <https://www.eeaa.gov.eg/Service/67/sub/171/index> accessed 10 December 2023.
154 UNEP, 'National Permitting Systems in the Textile Industry' (n 115).
155 Ibid.
156 Ibid.
157 Ibid.

The following section outlines key high-level recommendations for strengthening environmental permitting.

4. RECOMMENDATIONS

Although the choice of regulatory approach and implementation will depend on specific country and regional circumstances, the purpose of this section is to outline key high-level recommendations for policymakers in the MENA region, and beyond, to strengthen existing, or develop new, permitting regulation that supports the transition towards a sustainable textiles value chain.

4.1 Key high-level recommendations

1. Strongly consider and build on available guidance on environmental permitting, including OECD's guidelines and principles for environmental permitting systems, as well as relevant guidance on the textile sector, such as industry-led initiatives to manage the environmental impacts associated with the textile-value chain.
2. Ensure legislation requires textile activities/installations with a 'significant environmental impact', as defined in legislation, to require permits that consider and integrate environmental considerations prior to conducting operations. In this respect, technical guidelines specifically focused on the textile industry may be useful to complement legislative requirements and target common sources of environmental harm.
3. Adopt fully integrated permitting systems, particularly for major pollution activities, to ensure the process requires the thorough and holistic consideration of environmental impacts.
4. Ensure legislation requires the adoption of BAT and the submission of EIAs and social impact assessments to ensure that the environmental and social implications are considered as part of the permitting process. These assessments should inform permit conditions.
5. Ensure the entire permitting process (including the application phase, decision-making phase, operational phase, and final stage) is clearly outlined in legislation. This includes outlining the roles and responsibilities of different actors (e.g. government agencies, technical experts, independent bodies, enforcement officers, etc.) throughout the process, as well as the consequences in case of non-compliance.

6. Ensure the permitting process adequately and meaningfully provides for public participation.
7. Ensure the full involvement of relevant stakeholders, including the textile industry, when devising and implementing regulatory changes.
8. Build the capacity and resourcing of relevant actors throughout the permitting process, such as environmental agencies, to understand the risks associated with textile operations and how to best manage the risks through the permit process.
9. Support ongoing research and innovation to ensure new technologies and developments are considered. This research, for example, could focus on assessing the possibility of integrating circularity principles into permitting processes.

5. CONCLUSION

The textile industry is a significant source of income and wellbeing across the world, including in the MENA region. A close look at key players, such as Morocco, Egypt, Jordan, Saudi Arabia, and the UAE, reveal the substantial economic and social implications of the industry in the region. However, the industry is also struggling to address its contribution to the triple planetary crisis - climate change, biodiversity loss, and pollution. The environmental implications of the industry are wide-ranging – particularly in areas compounded by water scarcity, such as the MENA region. This constitutes a significant hurdle to meeting the environmental dimensions of the SDGs in the region, and beyond.

Transitioning towards a circular and sustainable textile value chain is imperative to accelerate the achievement of the SDGs. Sustainable fashion is becoming increasingly important as the environmental and social implications of the industry become more evident. Consumers are increasingly aware of the implications of unsustainable production and consumption and demand more sustainable products. In addition, some countries, and regions, like the EU, have already started implementing legal frameworks to move towards a sustainable and circular textile economy. In the context of the MENA region, although circular economy initiatives may be currently lacking, an increasing awareness of sustainability and ethical considerations in the global textile industry are influencing the textile market. Such trends are promising, but to ensure a swift transition, cooperation, and coordination among a wide range of stakeholders throughout the textile value chain is critical. In this respect,

policymakers have a key role in creating the regulatory frameworks that will enable all stakeholders to drive the necessary transformation, and national permitting systems play a significant role.

Permitting processes are a key instrument for regulating industries' impacts on the environment. Businesses may require a range of permits to conduct their operations. Environmental permits are of particular relevance to the textile manufacturing industry. These permits set limits to the discharge of contaminants to land, water, or air for example. They can also encourage the adoption of more sustainable practices. There are two key types of environmental permitting systems: single-medium and integrated. The adoption of integrated systems is encouraged as these systems consider the effects of activities on all environmental media together (e.g. air, water, and land). A limited review of environmental permitting frameworks in the MENA region (focused on Morocco, Türkiye, Jordan, and Egypt) has revealed the presence of environmental permitting systems for the textile industry, but further integration is encouraged. The adoption of integrated environmental permits based on BAT for industrial facilities is a key consideration for stakeholders, in particular policymakers, when considering the transition towards a sustainable textile value chain. Robust environmental permitting frameworks that consider actual and potential environmental impacts of industry activities are crucial for advancing the environmental dimensions of the SDGs on a global, regional, and national scale.

Overall, the authors hope that this article helps to raise awareness of the role of the textile industry and permitting systems in accelerating the achievement of the SDGs in the MENA region and beyond. The authors strongly encourage all stakeholders to continue working together to reach the shared goal of a sustainable textile sector.