



United Nations
Economic Commission for Africa

Role of small and medium-sized enterprises in building climate resilience in North Africa

a case for fostering the adoption of sustainable corporate governance



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**a case for fostering the adoption of
sustainable corporate governance**



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Contents

Main messages	04
Executive summary	05
1. Introduction	07
2. Climate change challenges for North Africa	10
2.1. Some important facts about climate change in North Africa	10
2.2. Understanding the economic consequences of climate change	12
2.3. Channels of impact	13
2.3.1. Water	14
2.3.2. Agriculture	14
2.3.3. Tourism	14
2.3.4. Productivity	15
2.3.5. Health	15
2.3.6. Global impact on gross domestic product	15
2.4. Reducing the environmental footprint of economic growth: a major implication of climate change for North Africa	17
2.4.1. Huge environmental impact of achieved Sustainable Development Goals	17
2.4.2. Reducing the material footprint of North Africa: a major challenge	19
2.4.3. Engaging citizens in the sustainability transition	22
3. Leveraging small and medium-sized enterprises for climate action: a case for sustainable corporate governance	24
3.1. Critical role of small and medium-sized enterprises and their importance in North Africa and emerging markets	24
3.2. Necessity of transforming small and medium-sized enterprise governance	28
3.2.1. Sustainable corporate governance	28
3.2.2. Ways in which firms can embed sustainability in their governance	29
3.2.3. Benefits of sustainable corporate governance	30
3.2.4. Obstacles and challenges to sustainable corporate governance	32
3.2.5. Role of environmental, social and governance regulations	34
3.2.6. Expanding landscape of regulations in developed countries	35
3.2.7. Situation of developing countries	36
3.2.8. Environmental, social and governance reporting is not enough	37
3.3. State of corporate responsibility in North Africa	38
3.3.1. Regulatory environment in North Africa	38
3.3.2. Measuring the environmental, social and governance performance of firms in North Africa	41
4. Climate-engaged small and medium-sized enterprises: a reform agenda for North Africa	48
Annex	58
A1. Corporate governance	58
A2. Environmental, social and governance score methodology	59
A3. Econometrics	62
A4. Environmental, social and governance regulations in a selection of developing countries	67

Main messages

- Climate change poses many threats and challenges to the development of North African economies.
- Current economic models lead to relatively low material efficiency in North Africa, which is only half the world average, while the subregion's ecological deficit is relatively large compared with that of low middle-income countries in other regions of the world.
- North Africa should embrace sustainability more rapidly, in order to secure long-term growth and well-being for its population.
- Aligning the private sector with sustainability is critical, but currently sustainable corporate governance is still poorly developed and disseminated in North Africa.
- The recommendations made in the present report are focused on integrating sustainability goals into economic strategies through collective vision, climate awareness and support for businesses.
- Governments should define well-being goals that are aligned with local environmental limits and should prioritize such issues as water stress.
- Expanding climate knowledge through education and public campaigns is crucial, while firms need tools to measure and reduce their environmental impact.
- Market incentives, clear government road maps and financial support are essential to encouraging businesses to adopt sustainable practices.
- Stronger environmental, social and governance regulations and a focus on collaboration, especially between large companies and small and medium-sized enterprises, will help to accelerate the transition to a resilient, sustainable economy.

Executive summary

Climate change poses significant challenges with regard to economic development in North Africa. The region is experiencing rising temperatures, increased frequency of extreme weather events and heightened water scarcity, all of which directly threaten economic stability. These climate impacts necessitate urgent adaptation and transformation of production systems. The current development model for North Africa is characterized by low material efficiency and high environmental costs and the ecological deficit of the subregion is large compared with that of other parts of the world. This is primarily owing to the unsustainable exploitation of natural resources, in particular in water-stressed regions. Improving material efficiency and reducing environmental footprints are critical for long-term growth and stability. A significant transformation is needed to align economic models with planetary boundaries.

Sustainable corporate governance is essential for guiding this transformation. However, North African firms, especially small and medium-sized enterprises, face significant barriers that hinder them from adopting sustainable practices. These challenges include limited access to finance, a lack of information and a regulatory environment that is not fully supportive of sustainability goals. To address these issues, a comprehensive strategy is proposed in the present report that includes increasing awareness, fostering environmental, social and governance practices, and supporting firms in building resilience to climate risks.

The main recommendations made are focused on the need for a shared vision whereby sustainability is integrated into

economic planning. This involves defining local planetary boundaries and setting new well-being goals that reflect these limits. A participatory approach is advocated in the report, whereby Governments, businesses and citizens collectively define and pursue these objectives.

Furthermore, enhancing awareness and education around sustainability is crucial. Firms need access to information, tools and training to effectively transition to sustainable governance. Climate change education should be incorporated into public campaigns and school curricula in order to build a culture of sustainability.

Market incentives, regulatory frameworks and financial support mechanisms are identified in the present report as vital tools for driving this transition. It is recommended that favourable conditions for sustainability should be created, such as through green procurement policies, reduced value added tax for sustainable goods and financial incentives for firms adopting environmental, social and governance practices. Emphasis is also placed on the importance of clear government road maps that guide businesses in aligning their operations with national sustainability strategies.

The integration of environmental, social and governance principles into corporate governance is crucial. Governments should accelerate the adoption of international standards and provide targeted support to small and medium-sized enterprises to help them to meet these requirements. Large companies have a significant role to play by promoting sustainable practices across their supply chains and supporting smaller suppliers in this transition.

In conclusion, North Africa must rapidly align its development model with sustainability in order to secure its economic future. The private sector's role is indispensable in this effort, but supportive policies, increased awareness and coordinated action across all

stakeholders are also required. The recommendations made in the present report are aimed at creating an enabling environment in which firms can contribute effectively to a resilient and sustainable economy.

1. Introduction

Propelled by greenhouse gas emissions, the global average surface temperature has increased by 1.24°C relative to the 1850–1900 baseline. The rate of temperature rise since 1970 outpaces any 50-year interval in the past 2,000 years. Under current climate action commitments, greenhouse gas emissions are predicted to increase by nearly 14 per cent by 2030,¹ whereas a yearly reduction of -8 per cent is needed to keep warming below 1.5°C in the long term.² Any increase above 1.5°C will escalate the occurrence of extreme events, with broad economic and societal impacts. Tipping points, such as the “savannahization” of the Amazon and permafrost thaw, are concerning. The remaining carbon budget associated with 1.5°C of warming was recently estimated³ to be 260 gigatons of carbon dioxide relative to the start of 2023, which could be exhausted in just 6.5 years. In its latest report, issued in March 2023, the Intergovernmental Panel on Climate Change anticipates at least a 3.2°C rise by the end of the century if current policies continue, underscoring the urgent need for more ambitious climate action.

Climate change is having a profound impact on North Africa, as evidenced by the catastrophic flood of 2023 in Libya. Such countries as Mauritania and the Sudan are under particular threat, grappling with extreme water scarcity and ranking among the most vulnerable countries globally. The subregion is witnessing a substantial rise in temperatures, which

is increasing at twice the global average and is largely attributed to human activities. This trend is set to worsen, with night temperatures likely to exceed 30°C by 2050 and daytime highs nearing 50°C by the end of the century. Heatwaves are expected to become 10 times more common, exacerbating the situation. Droughts are also becoming a critical issue, as evidenced by reduced average annual rainfall and an increased frequency of droughts, especially in coastal areas. These environmental shifts, coupled with socioeconomic changes, are negatively affecting water resources and agriculture, in particular in the Nile Valley and the Atlas Mountains. Desertification, fuelled by increasing aridity and unsustainable land practices, is accelerating, threatening forests and altering vegetation patterns. Sea level rise poses a significant risk, increasing flood and erosion dangers across the Mediterranean. Such countries as Egypt, Libya, Morocco and Tunisia are highly vulnerable, with the Nile Delta in Egypt being at particular risk. Biodiversity loss in agricultural and natural ecosystems is alarming, with the Mediterranean basin undergoing major changes.

Climate extremes are challenging economic resilience, increasing government debt in Algeria, Morocco and Tunisia. Water scarcity, primarily in agriculture, is threatening food security, with several countries facing high food insecurity rates. Rising temperatures and environmental pressures are affecting agricultural productivity and

1 UNEP, Emissions Gap Report 2022: the Closing Window – Climate Crisis Calls for Rapid Transformation of Societies (Nairobi, 2022).

2 Zhu Liu and others, “Monitoring global carbon emissions in 2021”, *Nature Reviews Earth and Environment*, vol. 3, 2022.

3 Piers Forster and others, “Guest post: what the tiny remaining 1.5C carbon budget means for climate policy”, *CarbonBrief*, 11 November 2022.

food systems, highlighting the need for adaptation strategies. The tourism sector, for example, which occupies a substantial share in the economies of such countries as Egypt, Morocco and Tunisia, is strained by increased resource demands and climate impacts.

While developed countries debate whether to pursue green growth or degrowth, developing countries, in particular in North Africa, have the opportunity to embrace sustainable technologies and economic models. This shift is essential for reducing ecological footprints and achieving sustainable development, in line with global efforts to combat climate change and preserve the biosphere. Indeed, globally, in particular in developed countries, growth and development have often been achieved at a significant environmental cost. Despite advancements in human development, they are often unsustainable, leading to environmental degradation that affects the global South. With only 15 per cent of Sustainable Development Goals on track to be achieved within the set time frame, countries are breaching biophysical boundaries faster than they are achieving social milestones.

In North Africa, the ecological deficit is significant compared with that in other parts of the world, even though the subregion's biocapacity still exceeds the ecological footprint of its human activities. This situation highlights the urgent need for countries in the subregion to pursue economic and social development while minimizing environmental impacts. Addressing infrastructure and demographic pressures, they must diverge from traditional development models and adopt sustainable paths, considering the looming costs of climate change adaptation. The subregion's current material-intensive development

model is unsustainable, creating an opportunity to enhance material efficiency and effectively manage resource use in economic growth.

The private sector, including micro-, small and medium-sized enterprises, is pivotal in this transition. Facing challenges and opportunities due to climate change, businesses need to adapt by investing in renewable energy, efficient technologies and sustainable practices. Strategic shifts across sectors, including agriculture and tourism, are required to mitigate climate risks and exploit emerging opportunities. Firms must integrate environmental concerns into their operations, contributing to a sustainable and resilient future.

Sustainability is increasingly important for North African and emerging market firms, with rising consumer awareness, investor demands and new regulatory pressures. Around the world, investors are becoming increasingly sensitive to environmental, social and governance criteria, while the new environmental, social and governance regulations and carbon border adjustment mechanism established by the European Union may have a significant impact on North African exports.

Despite some scepticism, prioritizing sustainability offers competitive advantages, such as market access and investor appeal, and benefits long-term shareholder value and financial performance, although results vary across cultural and economic contexts. In emerging markets, more focus on environmental, social and governance strategies is needed.

Corporate sustainability has evolved through various models, emphasizing the integration of business and finance

to achieve environmental, social and economic sustainability. The challenge lies in transitioning from short-term profit goals to long-term ecosystem and economic stability. This requires reimagining corporate structures for sustainable governance, including by embedding environmental, social and governance factors in corporate decisions and reporting practices.

Adopting sustainable corporate governance is essential for North Africa to align its development with planetary boundaries. Although the subregion's contribution to global greenhouse gas emissions is relatively small, it is imperative to accelerate economic adaptation, merging adaptation and mitigation strategies. North Africa, while progressing towards achievement of the Sustainable Development Goals, faces threats from climate change that could derail these efforts. Traditional growth in gross domestic product (GDP), which is often correlated with environmental harm, is insufficient for sustainable development. A new well-being measure that goes beyond GDP, addressing basic needs sustainably, is proposed in the present

report. This would redefine corporate success to include environmental impact alongside profit. Overall, sustainability is not just about reducing environmental impact but also involves redefining the role of firms in society and the economy, aligning corporate practices with sustainability for long-term success and resilience.

The importance and value of North African economies accelerating the adoption of sustainable corporate governance is discussed in the present report. In section 2, the challenges posed by climate change to economic development in the subregion are described. In section 3, sustainable corporate governance is introduced, and its practical aspects are examined. In section 4, environmental, social and governance performance in North Africa is reviewed. Section 4 also includes proposed public policy recommendations, designed to accelerate the transformation of corporate governance in the subregion so that the private sector can contribute fully and effectively to the sustainability transition.

2. Climate change challenges for North Africa

2.1. Some important facts about climate change in North Africa

As shown in table 1, between 1980 and 2021 floods were the most frequent extreme weather events in North Africa. In 2023 in Libya, according to the Office for the Coordination of Humanitarian Affairs,⁴ as a result of such events 5,923 people

died, 44,862 were internally displaced, thousands went missing and some 110,000 received assistance. That year, such floods were 50 times more likely and up to 50 per cent more intense than they would have been in a 1.2°C cooler climate or in the preindustrial world.⁵

Table 1 Extreme weather events (1980–2021)

	Droughts	Extreme temperature	Floods	Storms
Algeria	1	3	44	4
Egypt	..	4	11	7
Libya	3	..
Mauritania	9	..	19	3
Morocco	3	6	24	4
Sudan	9	1	39	3
Tunisia	1	..	12	..

Source: Centre for Research on the Epidemiology of Disasters, International Disaster Database. Available at www.emdat.be/ (accessed in September 2024).

The climate change vulnerability scores of the five most vulnerable countries, the five least vulnerable countries and the North African countries are set out in table 2. Mauritania and the Sudan are the most vulnerable countries in the

subregion, and the Sudan is among the five most vulnerable countries in the world. The same two countries are also ranked among the five most vulnerable in the world with regard to water supply, while Egypt is ranked thirteenth.

⁴ According to data from Office for the Coordination of Humanitarian Affairs, “Flash appeal final report: Libya flood response Sept. 2023–June 2024” (2024).

⁵ Mariam Zachariah and others, “Interplay of climate change-exacerbated rainfall, exposure and vulnerability led to widespread impacts in the Mediterranean region”, Grantham Institute for Climate Change, September 2023.

Table 2 Climate change vulnerability index

Least vulnerable countries		Most vulnerable countries		North African countries	
Switzerland	0.26	Sudan	0.62	Algeria	0.39
Norway	0.26	Chad	0.66	Egypt	0.44
Austria	0.28	Guinea-Bissau	0.66	Libya	0.43
Germany	0.29	Somalia	0.67	Mauritania	0.57
Sweden	0.30	Niger	0.68	Morocco	0.38
				Sudan	0.62
				Tunisia	0.39

Source : University of Notre Dame, Notre Dame Global Adaptation Initiative. Available at <https://gain.nd.edu/our-work/country-index/> (accessed in September 2024).

Extreme heat, droughts and desertification

Climate change is already affecting North Africa, with temperatures rising by from 0.2°C to 0.4°C per decade and heat extremes doubling since 1970. In many parts of the subregion, temperatures have increased at twice the global average, largely owing to human activity. A global rise of 2°C could double subregional summer temperatures. By 2050, night temperatures may exceed 30°C, with daytime highs reaching 46°C and possibly 50°C by the end of the century. The number of heatwaves could increase tenfold, from 16 days annually during the period 1986–2005 to 80 days by mid-century and 118 days by the end of the century, with emissions continuing post-2040 and potentially leading to 200 hot days per year in the Middle East and North Africa.⁶

Severe droughts also threaten North Africa. The Intergovernmental Panel on Climate Change predicts reduced rainfall and more frequent droughts, especially in coastal areas. The Mediterranean could experience drought events 5–10 times

more often. While adaptation could reduce some water resource vulnerabilities, complete mitigation is unlikely, owing to the combined effects of climate change and socioeconomic shifts. Some 71 per cent of GDP and 61 per cent of the population in the region are exposed to high or very high water stress, compared with global figures of 22 per cent and 36 per cent, respectively.⁷ The Nile Valley and Atlas Mountains are particularly vulnerable, with reduced rainfall and warming climates likely to have a severe impact on aquifer recharge.⁸ Overextraction of groundwater is expected to worsen the decline in water levels more than climate change itself.

Heatwaves, droughts and changes in how land is used are making the ground drier, which increases the risk of wildfires. Many areas are facing desertification, mostly owing to unsustainable ways of using land.⁹ The expected increase in dry conditions will likely make desertification worse in North Africa if temperatures rise significantly.

6 Johannes Lelieveld and others, "Strongly increasing heat extremes in the Middle East and North Africa (MENA) in the 21st century", *Climatic Change*, vol. 137, 2016.

7 World Bank, MENA Development Report: Beyond Scarcity – Water Security in the Middle East and North Africa (Washington, D.C., 2018).

8 Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region Arab Climate Change Assessment Report (United Nations publication, 2017).

9 Josep Peñuelas and others, "Impacts of global change on Mediterranean forests and their services", *Forests*, vol. 8, No. 12 (2017), p. 463.

Sea level rise

By 2100, flood risk may increase by 50 per cent and erosion risk by 13 per cent across the Mediterranean region.¹⁰ In terms of the number of people exposed, Egypt, Libya, Morocco and Tunisia are the countries in North Africa most exposed to sea level rise.¹¹ Among countries in the Middle East and North Africa, Egypt is particularly exposed, with several coastal cities at risk of inundation. Assuming a sea level rise of 1.26 metres by the year 2100, economic losses across the Nile Delta are projected to be around \$5 billion.¹²

Biodiversity loss

Agricultural intensification since the 1950s has drastically reduced biodiversity, leading to modified agroecosystems and simplified landscapes. According to the Food and Agriculture Organization of the United Nations,¹³ an unsustainable level of fishing affects 78 per cent of fish stocks in the Mediterranean, although the share of stocks in overexploitation did decrease from 88 per cent in 2012 to 75 per cent in 2018. Under a global warming level ranging from 1.5°C to 2°C, between 19 and 32 per cent of localities could experience a degradation of wetland hydrology, affecting biodiversity and ecosystem services. This risk escalates to 48–73 per cent under higher levels of warming, with Algeria and Morocco being particularly vulnerable.¹⁴

2.2. Understanding the economic consequences of climate change

The effects of climate change can be divided into long-term trends and short-term shocks. Trends include gradual impacts on water availability, temperatures and soil degradation, while shocks are extreme climate events, such as the 2023 floods in Libya. For instance, forests can regenerate, but repeated heatwaves and fires can push them into irreversible decline. Local trends and shocks are influenced by global climate actions, but some impacts, such as soil and water degradation, are shaped by local practices and governance. Countries can reduce their ecological footprint and restore natural capital, contributing to

both global climate mitigation and long-term sustainable development.

Both trends and shocks have significant economic impacts; trends call for adaptation, while shocks demand resilience. Adaptation ranges from minor measures (such as painting rooftops white) to transformative actions (such as reconfiguring cities). Economically, adaptation in agriculture could involve water use efficiency or a complete overhaul of agricultural practices. In wealthier countries, debates are centred around green growth versus degrowth, with technology often seen as a vital

10 Lena Reimann and others, "Mediterranean UNESCO World Heritage at risk from coastal flooding and erosion due to sea-level rise", *Nature Communications*, vol. 9, No. 4161 (2018).

11 World Bank, *Turn Down the Heat: Confronting the New Climate Normal* (Washington, D.C., 2014).

12 Omran Frihy and others, "Alexandria-Nile Delta coast, Egypt: update and future projection of relative sea-level rise", *Environmental Earth Sciences*, vol. 61, No. 2 (2010).

13 Food and Agriculture Organization of the United Nations and General Fisheries Commission for the Mediterranean, *The State of Mediterranean and Black Sea Fisheries 2020* (Rome, 2020).

14 Gaëtan Lefebvre and others, "Predicting the vulnerability of seasonally-flooded wetlands to climate change across the Mediterranean Basin", *Science of the Total Environment*, vol. 692, November 2019.

solution, in particular for decarbonization. However, reducing human impact requires more than just decarbonization; it demands addressing multiple planetary boundaries that have been exceeded.

While no country can isolate itself from global climate impacts, there are disparities between rich and developing countries. Wealthier countries can absorb climate shocks and invest in adaptation, but they must choose between adapting within the current economic model or transforming it entirely. Developing countries, though more vulnerable, may find it easier to adopt climate-friendly technologies and to adjust their development paths at a lower cost, as they have fewer existing assets to transform. Sub-Saharan Africa, for example, currently has per capita emissions that are aligned with the

1.5°C target, with average emissions per capita equal to 1.6 tons of carbon dioxide equivalent, offering opportunities for leapfrogging to sustainable technologies.

The picture is different in North Africa, but most of the countries in the subregion have emissions that are not far from the 1.5°C target. The highest emitters are Algeria and Libya, owing to the extraction of oil and gas (Table 3). Those two countries have among the least diversified economies in the subregion, and diversification has been a challenge for decades. However, despite their extreme economic dependency on fossil fuels, they could better use these resources in the short-to-medium term to diversify their economies in a new, sustainable way.

Table 3 Greenhouse gas emissions in North Africa in 2020

	Emissions per capita (tCO ₂ e per capita)	Emissions (MtCO ₂ e)	Share of global emissions (per cent)	Percentage change from prior year (per cent)
Algeria	6.6	282.2	0.6 per cent	1.4
Egypt	3.5	352.0	0.7 per cent	2.0
Libya	18.7	126.7	0.3 per cent	4.2
Mauritania	2.9	13.2	0.0 per cent	4.0
Morocco	2.5	91.2	0.2 per cent	7.4
Sudan	3.0	127.1	0.3 per cent	-0.2
Tunisia	3.2	37.8	0.1 per cent	0.5
World	6.5	49 758.2	n/a	0.8

Source : Global Carbon Atlas. Available at <https://globalcarbonatlas.org/> (accessed in September 2024).

Abbreviations : tCO₂e, tons of carbon dioxide equivalent per person; MtCO₂e, megatons of carbon dioxide equivalent.

2.3. Channels of impact

Climate change increases the frequency and severity of such extreme events as heatwaves, floods, fires and storms, which have significant economic impacts. In North Africa, rising temperatures, droughts and reduced water availability

pose direct threats to such sectors as agriculture and tourism. Climate extremes also reduce asset values and damage physical infrastructure, raising concerns about resilience. Disruptions to logistics and transport are common, in

particular in North Africa, where railways are vulnerable to sand movements. A 2021 survey conducted in 113 countries revealed that chief executive officers in Europe and Africa rank supply chain disruptions from extreme weather as their top risk.

Catastrophic climate events threaten financial systems, with markets currently underestimating climate risks.

The cost of extreme events burdens public finances, and, as risks become less insurable, this burden is likely to grow. Repeated climate shocks can severely weaken economic resilience, leading to increased debt and a diminished capacity to repay. In North Africa, government debt as a percentage of GDP surged between 2019 and 2023 – from 0.96 to 47.7 per cent in Algeria, from 80.1 to 95.9 per cent in Egypt, from 60.3 to 69.5 per cent in Morocco and from 67.3 to 82.5 per cent in Tunisia.

In addition, indirect impacts arise from global responses to climate change. For instance, the carbon border adjustment mechanism established by the European Union will affect North African exports, and the worldwide acceleration of decarbonization will raise mineral prices, further increasing costs for countries that delay their energy transition.

2.3.1. Water

The Middle East and North Africa, which are facing the world's highest levels of water stress, are overusing water for agriculture, industry and domestic needs beyond natural replenishment rates. This overextraction has led to a significant water resource deficit. The already low annual water flow in the

Middle East and North Africa could drop further by 15–45 per cent, or even 75 per cent with a 4 °C global temperature rise. This, coupled with extreme heat events affecting one third of the land, poses severe risks to local agriculture. On top of limiting agricultural productivity, water scarcity hampers economic growth by increasing production costs and hindering industrial and energy sector development.

2.3.2. Agriculture

Climate change is severely affecting agricultural productivity in North Africa, where 70 per cent of agriculture relies on rainfall. Coupled with an average annual population growth of 2 per cent between 2013 and 2022 – the second highest globally – along with water stress and low productivity, the subregion's reliance on food imports has grown. Agriculture remains crucial, accounting for 10.9 per cent of the GDP and 20 per cent of employment in Egypt, and 10.7 per cent of the GDP and 35 per cent of jobs in Morocco in 2021.

However, increasing heat, dryness, severe weather, soil salinization, ocean acidification and land degradation pose major threats. Rising sea levels and new pathogens further exacerbate these challenges. Arid zones in North Africa and the Mediterranean basin are expected to expand by 12, 20 and 41 per cent under global warming scenarios of 1.5°C, 2°C and 4°C, respectively. Without adaptation, crop yields, especially that of wheat, could decline by 5–22 per cent by 2050, and in Egypt agricultural output might drop by 8–47 per cent by 2060, potentially reducing agricultural employment by up to 39 per cent. Food prices are also expected to surge by 16–68 per cent.

2.3.3. Tourism

In North Africa, tourism is a major economic contributor, especially in Egypt, Morocco and Tunisia. For instance, the tourism sector in Morocco accounts for about 7.1 per cent of the country's GDP and provided some 565,000 jobs in 2019. In Tunisia, tourism contributed to 5 per cent of GDP and 10.2 per cent of employment prior to the coronavirus disease (COVID-19) pandemic. However, peak tourism seasons lead to increased water demand, often clashing with the needs of irrigated agriculture, and this conflict is likely to worsen with climate change.

This scenario necessitates a rethink of tourism in North Africa. The sector's future hinges on global climate change mitigation efforts and green technology advancements. Tourism contributes about 8 per cent to global carbon emissions. With ambitious global climate actions, mass tourism might significantly decrease. The adverse environmental effects of tourism point to the need to reduce tourist numbers and foster more eco-friendly tourism practices.

2.3.4. Productivity

High temperatures and heatwaves can potentially have a significant impact on productivity, in particular for workers who perform their jobs outdoors (e.g. in agriculture, construction, tourism or sport). When temperatures reach 33–34°C, individuals performing moderate-intensity work may face a dramatic decrease of up to 50 per cent in their work capacity.

Not only outdoor activities are affected; poor temperature management in factories and workshops also endangers industrial workers in indoor environments. It is estimated that, by 2030, global working hours will experience an annual

loss equivalent to more than 2 per cent, primarily owing to extreme heat that either renders work impossible or causes workers to operate at a slower pace.

2.3.5. Health

The Middle East and North Africa suffer from severe air pollution, with coarse particulate matter levels significantly exceeding World Health Organization guidelines and legal standards, causing health, economic and ecological damage. Air pollution led to 176,000 premature deaths in the in 2013 and accounted for over 2 per cent of GDP loss in that part of the world. In addition, the Middle East and North Africa are a major source of dust storms, which have increased owing to such environmental factors as land degradation and climate change, affecting various activities and health.

2.3.6. Global impact on gross domestic product

Accurate, systematic estimations of the impact of climate change on the GDP of North Africa are lacking, and current economic models have been criticized for their inadequacies. These models often overlook important complexities and ecological thresholds of climate change, resulting in a risk of significant errors in investment risk assessments. There are many different estimates of the impact of climate change on GDP at the global level. For instance, Oxford Economics estimates that a 2.2°C temperature rise by 2050 could reduce global GDP by 20 per cent, underscoring the uncertainty surrounding the consequences of climate change.

Present models fall short in evaluating the structural and systemic effects of climate

change, typically assuming a return to normality following disruptions. This overlooks the potential for continuing, cumulative shocks from global warming, affecting economies and societal resilience. Thus, caution is advised when using existing estimates.

In its 2018 estimates, the World Bank suggests that the Middle East and North Africa could face the most substantial economic losses from climate-induced water scarcity, potentially amounting to 6–14 per cent of their GDP by 2050. However, updated information indicates even more severe global warming than initially projected, emphasizing the need to consider extreme risks and scenarios, not just median predictions.

Kemp and others highlight the potential for accelerated disruptions caused by extreme weather events and the importance of averting catastrophic tipping points. The uncertainty surrounding climate change, the unknown magnitude and likelihood of shocks, and society's unpreparedness for extreme scenarios underscore the urgent need for effective climate change mitigation strategies to prevent existential threats to human populations and biodiversity.

What are the implications for North Africa with regard to economic and social choices? In section 3 of the present report, implications for the subregion's economic development models will be discussed, but it is important first to recognize that resilience should be a central dimension of sustainability.

Box 1 What is sustainability?

It is necessary to define sustainability in order to understand the role of firms in addressing the current challenges that humanity faces with regard to climate change. The term "sustainability" was first introduced by the World Commission on Environment and Development in 1987. In its report entitled *Our Common Future*, also known as the Brundtland Report, the Commission provided a macro-level definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The ability of future generations to meet their needs is closely linked to remaining within the planetary boundaries. Thus, as defined by the Stockholm Resilience Centre, "the planetary boundaries concept presents a set of nine planetary boundaries within which humanity can continue to develop and thrive for generations to come". Combining these two definitions, sustainability may be defined as follows: "Sustainability of our economic models is defined as securing the social foundation for humanity now and in the future within planetary boundaries". An economic model includes many dimensions, such as the types of goods produced, the organization of production, and the technology used. Taking into consideration how the economic model affects the conditions of present and future generations means questioning the role of firms in the economy, their purpose, how they interact with different stakeholders and how they affect all dimensions of the social foundation, in addition to the types of goods that they produce and the technology that they use. Sustainability requires transitioning from short-term perspectives to long-term strategic planning and decision-making, acknowledging the interdependence of economic, social and environmental frameworks. Such acknowledgement is critical when considering how firms need to transform themselves in order to contribute to the sustainability transition. Current business models are largely responsible for the surpassing of planetary boundaries, and one reason for this is that firms have primarily pursued short-term profit maximization for capital owners without considering their impact on all other stakeholders. Thus, for firms, sustainability is about ensuring long-term business success while contributing to economic and social development within planetary boundaries.

There are three broad components of sustainability, often labelled as "people, planet and profits" or the "social, economic and environmental" dimensions. Besides these three parts, sustainability also involves being accountable, clear and engaging with the people involved. Sustainability is sometimes referred to as "corporate social responsibility" or "corporate citizenship". Although the term "sustainability" has been used in the present report, it is understood that these terms are broadly equivalent. They all encompass the core aspects of business operations, including effective management, fair treatment of employees, environmental responsibility, support for local communities, and strong relationships with suppliers and customers.

^a A/42/427.

^b Melissa Leach, Kate Raworth and Johan Rockström, "Between social and planetary boundaries: navigating pathways in the safe and just space for humanity", in *World Social Science Report 2013: Changing Global Environments*, Heide Hackmann, ed. (Paris, Organisation for Economic Co-operation and Development and United Nations Educational, Scientific and Cultural Organization, 2013).

2.4. Reducing the environmental footprint of economic growth: a major implication of climate change for North Africa

The challenge of climate change is not the same for all North African countries. Although they share the same threats, they have different levels of development and economic structures. For those with less diversified economies, such as Algeria and Libya, the primary challenge is transitioning to sustainable economic models while decarbonizing their energy sectors. Although their reliance on fossil fuels is a weakness, it also provides an opportunity to leapfrog to cleaner technologies and advance low-carbon growth. Without swift adaptation, deteriorating climate conditions could discourage foreign investment and intensify economic strain.

Countries with a lower income, such as Mauritania and the Sudan, are especially vulnerable owing to limited resources and infrastructure, making it very difficult for them to effectively adapt and build resilience to climate shocks.

As climate risks grow, even middle-income countries face potential income loss and economic instability if they fail to adjust their development models. Adapting to climate impacts requires substantial structural changes – a process that has been slow in North Africa owing to weak productivity growth and poor resource allocation. With worsening climate threats, comprehensive economic restructuring is urgently needed across the subregion.

2.4.1. Huge environmental impact of achieved Sustainable Development Goals

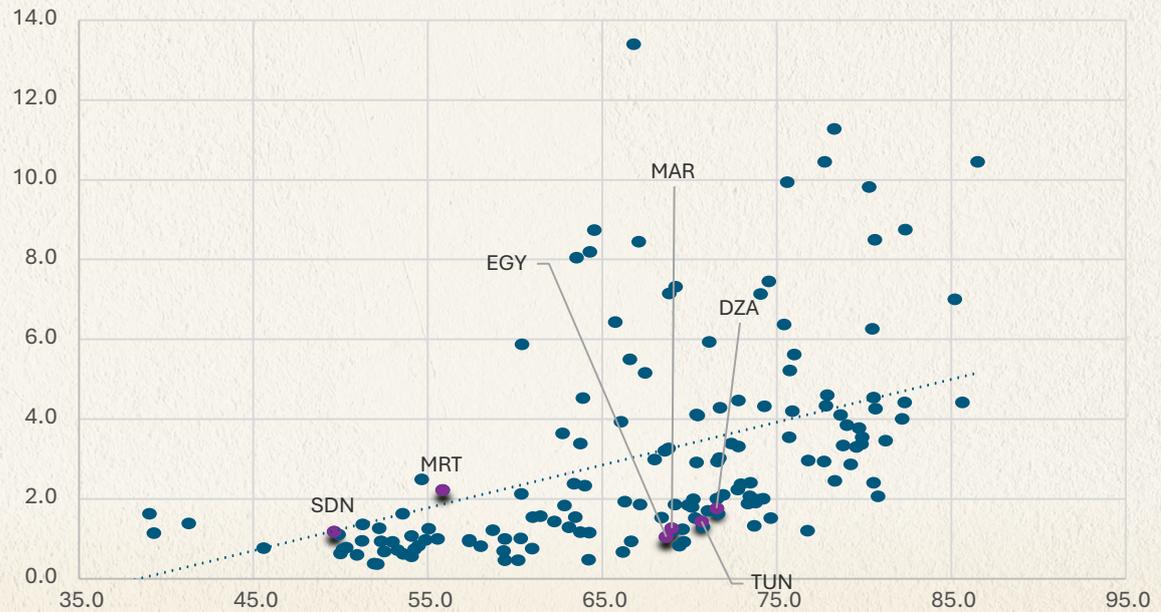
Globally, and even more so in developed countries, growth and development have come at the expense of significant environmental impact. In figure 1 below, the correlation between countries' progress towards achievement of the Sustainable Development Goals and their ecological footprints is shown: there is a clear positive correlation between the two variables. Algeria, Egypt, Morocco and Tunisia all lie in the same range, both in terms of achievement of the Goals and the ecological footprint from their production. As most of the North African countries with a higher Goals index are to be found at the top right of the figure, without a new economic model, in their pursuit of the Goals those countries would substantially increase their impact on their environment. As shown in section 2.4.2, however, North Africa has a relatively low rate of material productivity, meaning that it could achieve higher rates of GDP with the same levels of domestic consumption of materials.

Admittedly, great progress has been made in human development around the world, but this progress was in fact unsustainable, leading to such extensive environmental degradation that it has threatened the development achievements of the countries of the South. Moreover, only 15 per cent of the Sustainable Development Goals are on track to be achieved within the set time frame. In their analysis of 11 social and 6 biophysical indicators, Fanning and

others¹⁵ reveal that countries tend to breach biophysical boundaries faster than they achieve critical social milestones. From 1992 to 2015, the number of

countries overshooting biophysical limits increased from 32–55 per cent to 50–66 per cent, depending on the indicator.

Figure I Countries' Sustainable Development Goals index score versus ecological footprint



Source: Sustainable Development Goals index scores from <https://dashboards.sdindex.org/> and ecological footprint from www.footprintnetwork.org/resources/data/.

Note: For each country, its ecological footprint from consumption is positioned on the vertical axis and its Sustainable Development Goals index on the horizontal axis.

Table 4, the ecological footprints of North African countries are compared with those of middle-income countries in other parts of the world. The subregion's ecological deficit is relatively large compared with that of lower-middle-income countries

in other parts of the world. Furthermore, Africa and South America are the only two regions where the biocapacity is still greater than the ecological footprint of human activities.

Table 4 Ecological footprint

	From production	From consumption	Biocapacity	Ecological deficit
North Africa	1.5	1.7	1.2	-0.5
North African lower-middle-income countries	1.6	1.8	1.2	-0.6
Algeria	1.8	2.2	0.7	-1.6
Egypt	1.1	1.5	0.3	-1.1
Mauritania	2.2	2.3	3.7	1.4
Morocco	1.3	1.5	0.6	-1.0
Tunisia	1.4	1.4	0.7	-0.6

15 Andrew Fanning and others, "The social shortfall and ecological overshoot of nations", *Nature Sustainability*, vol. 5 (2022).

Africa	1.2	1.3	1.8	0.4
African lower-middle-income countries	1.2	1.4	1.5	0.1
Asia Pacific	3.2	3.0	2.3	-0.7
Asia Pacific lower-middle-income countries	2.5	2.3	2.6	0.2
Central America and the Caribbean	1.9	2.5	1.2	-1.2
Central America and the Caribbean lower-middle-income countries	1.5	1.7	1.4	-0.3
Middle East and Central Asia	3.7	4.0	0.9	-3.0
Middle East and Central Asia lower-middle-income countries	1.7	2.0	0.9	-1.1
South America	3.8	2.7	17.2	14.5
South American lower-middle-income countries	4.2	3.1	31.1	28.1
World	2.9	3.0	3.2	0.2

Source: Global Footprint Network. Available at www.footprintnetwork.org/resources/data/ (accessed in September 2024).

To safeguard their long-term development potential, which is closely tied to their natural capital, North African countries cannot afford to pursue GDP growth without considering its environmental impact. To this end, the subregion must regulate the increase in material intensity associated with economic growth, while significantly reducing the environmental impact of production and consumption patterns. The term “material intensity” in this context is understood to mean the material use (for example, in tons) divided by GDP (for example, in constant United States dollars).

Certainly, all economies in the subregion face significant infrastructure needs to varying degrees, driven by both population demands and demographic pressure. However, it is essential to adopt a strategy that moves beyond a business-as-usual approach, setting the course for a sustainable development trajectory and building economies that are more resilient to climate-change-induced disruptions. Maintaining the status quo will only deepen inertia and escalate future transition costs, including those related to adaptation. To illustrate this, consider the following example.

Box 2 Sustainable urbanization

Cities will inevitably expand, owing to two main factors – population growth and climate-change-induced displacement. This expansion can follow one of two paths: a continuation of the business-as-usual approach or a proactive commitment to sustainability, in particular in housing, urban infrastructure, transport, waste management, and water use and management. In the case of housing, as proposed by the International Resources Panel of the United Nations Environment Programme this would involve standardizing the number of square metres per inhabitant and establishing new construction standards that promote material efficiency and improved thermal insulation to reduce energy consumption, especially for air conditioning. Achieving this also requires addressing issues in the building materials industry, ensuring that it both reduces its environmental footprint and meets growing demand. It is therefore necessary to curb the ecological footprint of urbanization as quickly as possible. This must be followed by a second phase focused on transforming cities to enhance their climate resilience and reduce their overall environmental impact.

2.4.2. Reducing the material footprint of North Africa: a major challenge

In table 5, some important indicators are presented which measure the material

intensity of economic development in North Africa. One particularly relevant indicator is GDP relative to domestic material consumption, which reflects the efficiency of material use in economic production. Notably, this ratio is relatively

consistent across all countries in the subregion.

Table 5 Material intensity of economic development in North Africa (Volume in tons)

	Algeria	Egypt	Libya	Mauritania	Morocco	Sudan	Tunisia
DE per capita	10.1	8.6	17.6	10.8	6.4	5.9	7.3
DMC per capita	8.7	9.1	11.3	8.9	7.4	6.1	8.2
GDP divided by DMC	0.5	0.4	0.4	0.2	0.4	0.4	0.5
GDP divided by RMC	0.4	0.5	0.3	0.2	0.5	0.2	0.4
PTB divided by GDP	0.3	0.1	-1.3	-1.2	0.3	0.1	0.2
RMC per capita	11.2	8.2	16.1	7.7	7.0	11.3	9.2
GDP per capita	4 111.0	3 825.0	4 646.0	1 545.0	3 258.0	2 213.0	3 952.0

Source: Global Material Flows Database. Available at www.resourcepanel.org/global-material-flows-database (accessed in August 2024).

Abbreviations: DE, domestic extraction; DMC, domestic material consumption; RMC, raw material consumption; PTB, physical trade balance.

Note: Material productivity is GDP over DMC; material intensity is DMC over GDP.

Material efficiency in North Africa is half the global average, while per capita material consumption (8.5 tons) is approximately 68 per cent of the global average (12.4

tons). This suggests significant potential for improvement, in particular if the subregion is to reach the efficiency levels of Europe and North America.

Table 6 Comparison of material intensity between geographical areas (Volume in tons)

	Sub-Saharan Africa	Asia and the Pacific	Europe	Latin America and the Caribbean	North America	World	North Africa	Africa
DE per capita	6.3	11.9	13.2	16.8	28.1	12.5	9.5	5.7
DMC per capita	6.2	12.3	14.9	15.8	26.6	12.4	8.5	5.5
GDP divided by DMC	0.4	0.6	2.2	0.5	2.2	0.9	0.4	0.4
GDP divided by RMC	0.4	0.6	1.7	0.6	2.0	0.9	0.3	0.5
PTB divided by GDP	0.1	0.1	0.1	0.1	–	–	-0.2	0.1
RMC per capita	4.4	12.4	19.0	13.3	30.2	12.5	10.1	4.4

Source : Global Material Flows Database. Available at www.resourcepanel.org/global-material-flows-database (accessed on August 2024).

Abbreviations : DE, domestic extraction; DMC, domestic material consumption; RMC, raw material consumption; PTB, physical trade balance.

Note : Material productivity is GDP over DMC; material intensity is DMC over GDP.

Comparing material productivity by income class, on the basis of World Bank definitions, reveals that middle-income countries in North Africa have material productivity levels that are comparable to the global average for low-middle-income countries. However, this remains

only half the level observed in upper-middle-income countries. In contrast, high-income countries achieve a material productivity of 5.6, while North African countries average just 0.4.

Table 7 Comparison of material intensity between geographical zones and income classes (Volume in tons)

	High-income countries	Upper-middle-income countries	Lower-middle-income countries	Low-income countries	Sub-Saharan Africa	Sub-Saharan African low-income countries	Sub-Saharan African lower-middle-income countries	Sub-Saharan African upper-middle-income countries	North Africa	North Africa lower-middle-income countries	Sudan	Libya
DE per capita	19.8	13.8	8.6	3.7	6.3	4	6.1	13.8	8.6	8.3	5.9	17.6
DMC per capita	18.6	13.5	8.3	3.8	6.2	4	6	12.4	8.5	8.4	6.1	11.3
GDP divided by DMC	5.6	0.8	0.4	0.2	0.4	0.2	0.3	0.9	0.4	0.4	0.4	0.4
GDP divided by RMC	1.4	0.6	0.5	0.3	0.4	0.3	0.6	0.6	0.4	0.4	0.2	0.3
PTB divided by GDP	0.1	0.2	0	0.2	0.1	0.2	0.0	0.2	0.0	-0.1	0.1	-1.3
RMC per capita	311	12.3	6.8	3.1	4.4	3.4	3.3	11.7	8.7	8	11.3	16.1

Source : Global Material Flows Database. Available at www.resourcepanel.org/global-material-flows-database (accessed in August 2024).

Abbreviations : DE, domestic extraction; DMC, domestic material consumption; RMC, raw material consumption; PTB, physical trade balance.

Note : Material productivity is GDP over DMC; material intensity is DMC over GDP.

These levels of material productivity are, of course, a legacy of the current material-intensive development model, which is prevalent almost everywhere in the world, except in poorer countries. The subregion, therefore, has considerable potential to enhance its material productivity. Given the excessive and unsustainable material content of GDP in high-income countries, it is evident that North African countries, and developing countries more broadly, cannot follow the same development trajectory.

To address the challenges and constraints posed by climate change and to pursue a path of sustainable development, the countries of North Africa must reduce their ecological footprint, manage the material content of their growth and increase their material productivity. This is essential to achieving an overall improvement in the well-being of their populations, with a greater independence from material consumption. In addition, they must reduce their vulnerability to climate change and enhance the resilience of their economies. These objectives are interconnected; for example, a significant ecological footprint weakens ecosystems, diminishing their resilience and, in turn, affecting sectors of the economy that rely on them, such as agriculture.

To achieve these objectives, all sectors of society must be mobilized around a shared vision of progress and the future, with particular emphasis on engaging citizens and businesses.

2.4.3. Engaging citizens in the sustainability transition

Citizen involvement is crucial for the effectiveness and legitimacy of climate change policies. Engaging citizens enables policymakers to tap into local

knowledge, gain public support and promote environmental responsibility. Citizens' diverse insights help to craft practical and equitable policies suited to local needs. Their active role in policy implementation and social learning empowers the public, builds trust and enhances policymakers' understanding of public concerns, fostering a collaborative approach to developing lasting climate solutions.

According to Arab Barometer, there is widespread support among citizens of countries in the Middle East and North Africa for increased governmental intervention in climate change matters, with support ranging from 39 per cent in Jordan to 64 per cent in Tunisia. Younger generations demonstrate a stronger inclination towards greater government involvement. This trend is particularly evident in Mauritania, where 68 per cent of young people advocate more action, compared with 41 per cent of older individuals. Support for reducing government intervention remains minimal across the region, with Morocco and the Sudan showing the highest proportions of such opinions at 26 and 22 per cent, respectively.

Environmental challenges perceived by citizens include water-related issues, pollution and a general lack of environmental awareness. In many surveyed countries, at least one third of respondents identified water issues as a major environmental challenge. Specific concerns vary by country: in Egypt and Jordan, the pollution of drinking water is a primary concern, while in Kuwait and Libya, the pollution of waterways is more pressing. The majority in most countries perceive a lack of environmental awareness among citizens as a significant or moderate contributor to environmental challenges.

Despite these concerns, more immediate challenges – such as food insecurity and economic instability – take precedence in citizens’ priorities. Environmental issues rank lowest in governmental spending preferences and foreign aid priorities, overshadowed by food insecurity and education. While there is a shared desire for stronger governmental commitment to climate change mitigation, fewer than 1 in 10 people across the subregion consider reducing environmental pollution to be a top spending priority.

Significant contributors to environmental challenges include inadequate government policies, industrial activities and low levels of public awareness. Insufficient policies and regulations are widely identified as major obstacles to environmental protection in most surveyed countries. In addition, industrial and commercial activities, such as waste management and hazardous waste contamination, are seen as significant environmental threats.

The survey also highlights income and education as factors influencing citizens’

environmental awareness and views on governmental action. Individuals who can comfortably meet their basic expenses are more likely to advocate increased governmental action, especially in Morocco. Educational level also plays a role, with higher-educated individuals being more supportive of government intervention on climate change – with the largest gap in opinion observed in Morocco.

Citizen engagement is essential for ensuring the success of another vital commitment – that of businesses. For example, in order to strengthen incentives for companies to transform their activities, in particular by offering more environmentally friendly products, consumers must be willing to purchase them or to adapt their consumption habits accordingly.

Section 3 of the present report will be focused specifically on the role of businesses in driving the necessary transformation of North African economies.

3. Leveraging small and medium-sized enterprises for climate action: a case for sustainable corporate governance

3.1. Critical role of small and medium-sized enterprises and their importance in North Africa and emerging markets

Micro-, small and medium-sized enterprises are important players in the transition to sustainable economies, as they constitute the majority of businesses in North Africa. Climate change presents both challenges and opportunities for the private sector, affecting companies across various industries.

Many business sectors are exposed to climate-related risks and pressures, including the following:

- Necessity to reduce environmental impacts, notably greenhouse gas emissions.
- Availability and cost of resources and raw materials, such as water scarcity or the rising cost of certain metals driven by increased global demand for the energy transition.
- Direct effects of extreme weather events on physical infrastructure and assets.
- Impact on worker health and productivity, in particular in such sectors as agriculture, tourism and transport, where exposure to environmental changes is direct.

- Implementation of new environmental regulations, especially in export markets (e.g. the carbon border adjustment mechanism recently introduced by the European Union).
- Shifts in consumer behaviour, such as changes in tourism patterns or energy consumption preferences.
- Evolving expectations from major stakeholders, including large corporations or multinationals, which are increasingly influenced by environmental considerations and regulatory changes, potentially setting new standards for their suppliers.

According to McKinsey and Company, the industries that will experience the most significant changes in the transition to a net-zero economy are those with high emissions, representing about 20 per cent of global revenue. Energy-related coal use is expected to decline sharply and largely cease by 2050, while oil and gas production is projected to decrease by 55 and 70 per cent, respectively. This poses a particular challenge for such countries as Algeria and Libya, where these sectors are central to the economy.

The steel and cement industries – both important in North Africa – can lower their emissions by adopting carbon

capture technologies or shifting to alternative production methods and low-emission fuels, such as hydrogen. However, implementing these changes could increase production costs by more than 30 per cent by 2050 compared with current levels, although ongoing innovation may help to mitigate these costs. Similarly, the building sector can contribute to emission reductions by improving energy efficiency and replacing fossil fuels with low-emission heating and cooking systems.

Firms play a crucial role in sustainability by recognizing the interconnections among economic, environmental and social factors. This awareness enables them to meet present societal needs without compromising resources for future generations, while embedding sustainability into their strategic and operational decisions.

To achieve this, companies can integrate resource-efficient technologies, implement sustainability reporting frameworks, and offer sustainable products, services and product-service combinations. They can also improve their management practices to enhance employee well-being and contribute to sustainability through responsible supply chain management, carbon footprint reduction and corporate social responsibility initiatives.

Furthermore, firms can promote sustainable consumption and production patterns by minimizing waste and pollution, conserving natural resources and developing climate-resilient products and services. For example, they can create drought-resistant crops or infrastructure designed to withstand flooding.

Investing in research and development to drive innovation – such as advancing renewable energy solutions and

sustainable agricultural practices – can further reinforce their sustainability efforts. Moreover, engaging with stakeholders through open dialogue allows firms to better understand sustainability concerns and incorporate feedback into decision-making processes.

In a rapidly evolving economic landscape, firms must adapt their operational and strategic frameworks to address the challenges of climate change while seizing emerging opportunities. Integrating climate-related factors into strategic financial planning and capital allocation is becoming increasingly essential. This requires a fundamental shift in private sector strategies, specifically in reshaping business models to mitigate the financial risks associated with the transition to a low-carbon economy.

For instance, in the agricultural sector, this reshaping may involve reducing reliance on fossil-fuel-intensive inputs, such as conventional fertilizers, in anticipation of carbon pricing mechanisms. It also requires adapting to declining meat consumption, implementing mandatory water conservation measures, complying with evolving land-use regulations, and adjusting to potential reductions in subsidies for high-emission agricultural practices.

Similarly, in the tourism industry, a strategic realignment could include shifting focus away from destinations highly vulnerable to climate impacts towards more resilient locations. In addition, businesses may need to adapt their service offerings to align them with changing consumer preferences, thereby mitigating transition risks.

The private sector must proactively adapt its business models to effectively navigate both the physical and transition risks of

climate change. This strategic adaptation not only reduces businesses' vulnerability to climate-induced disruptions but also enables them to seize emerging opportunities in the climate adaptation sector.

New business models go hand in hand with sustainable corporate governance. This combination helps businesses to thrive over the long term, fosters greater stakeholder engagement and enhances transparency. Business approaches focused on sustainability are well aligned with the principles of responsible management and environmental stewardship. Both principles emphasize openness and accountability, which are crucial for regulatory compliance and the building of public trust. In addition, these business models encourage innovation and resource efficiency, which are important drivers for addressing sustainability challenges and reducing operational costs. This not only improves

a company's reputation and competitive edge but also attracts investors who prioritize social responsibility. By integrating these approaches with responsible management, companies are better positioned to achieve financial success while making a positive societal impact.

Lastly, there are several practical steps that businesses can take to adapt to the impacts of climate change and mitigate associated risks. These steps include, first, conducting a climate risk assessment; second, developing a climate adaptation plan; third, investing in climate-resilient infrastructure; fourth, engaging with stakeholders; and, fifth, reporting on climate risks and adaptation actions.

By implementing these actions, businesses can not only safeguard their own operations but also contribute to building more resilient communities and a more sustainable future.

Box 3 Some examples in emerging markets

A study by the International Finance Corporation provides several examples of firms that have successfully implemented sustainable practices in emerging markets:

- A leader in sustainable beauty products, with its Ekos product line sustainably sourcing natural materials from the Amazon.
- Unilever, which is promoting sustainable agriculture practices in India.
- BYD, a Chinese company at the forefront of electric vehicles and renewable energy, which is heavily investing in research and development for efficient, sustainable products and implementing sustainable practices.
- A Chinese organic food company that, by adopting a sustainability programme, reduced waste, improved working conditions and increased the use of renewable energy. This resulted in increased sales, an improved reputation, and the attraction of new customers.
- A Czech building materials company that, by implementing a sustainability programme, reduced waste, improved working conditions and boosted the use of renewable energy. These changes led to reduced costs, increased productivity and an improved reputation.
- A tourism company in Peru, which operates two small hotels near Machu Picchu and in the Amazon rainforest in the Department of Madre de Dios, engaging with local communities, the Government, non-governmental organizations, academics and other stakeholders. Its approach enabled the company to secure longer land leases and licences to expand, while maintaining strong support from the local community.

α International Finance Corporation, *Developing Value: the Business Case for Sustainability in Emerging Markets* (London: SustainAbility, 2022).

The growing importance of sustainability for North Africa and emerging market firms in general is driven by several factors, including growing awareness among consumers of the environmental

and social impacts of their purchases and a rising demand for more sustainable options. In addition, trading partners, investors and regulators are placing greater emphasis on sustainability. Some

investors are divesting from firms that fail to meet specific environmental, social and governance criteria, while stricter environmental and social regulations are being implemented. For example, new regulations on environmental, social and governance in Europe and the cross-border carbon tax will undoubtedly affect exports from North Africa.

Emerging market firms, often operating in such emissions-intensive sectors as steel, chemicals and transportation equipment, face critical sustainability challenges. The lack of public listings for many large emerging market firms means that they have less experience with disclosing environmental, social and governance data and practices. Furthermore, the absence of universally accepted methods for assessing environmental, social and governance performance in emerging markets further complicates their sustainability efforts.

Nonetheless, prioritizing sustainability can be rewarding for firms in North Africa and emerging markets. Doing so offers a competitive advantage through differentiation by providing sustainable products or services, which can lead to increased customer satisfaction and loyalty. In addition, entering new markets that demand sustainable products and attracting investors who focus on companies adept at managing environmental, social and governance risks and opportunities are significant benefits. In fact, successful participation in value chains will become increasingly challenging for North African firms if they fail to integrate environmental, social and governance practices.

Although implementing changes involves significant costs and challenges, an enterprise that fails to reduce its environmental impact risks exclusion

from value chains, as large firms strive to decarbonize their inputs and production. Moreover, since small and medium-sized enterprises often provide essential components within supply chains, large firms cannot achieve decarbonization without the collective efforts of their suppliers. For example, PepsiCo estimates that 92 per cent of its carbon emissions come from outside its own operations, while only 8 per cent of its suppliers have scientifically approved climate targets. Understanding the views of small and medium-sized enterprises regarding climate change and identifying the barriers that they face in implementing climate action will be crucial as the world works to decarbonize the global economy.

Corporations aiming to halve emissions by 2030 need to engage suppliers and customers across various sectors for meaningful emissions reductions, fostering a collaborative approach to meet global climate goals and ensure a sustainable future.

According to the World Trade Organization, large firms derive more than 80 per cent of their carbon emissions from supply chains. However, with small and medium-sized enterprises accounting for 9 out of every 10 businesses worldwide, their efforts to decarbonize will also have a significant impact on the path to a net-zero economy.

The World Economic Forum has highlighted the interconnectedness of supply chains and the climate action opportunities they present, such as decarbonization and such nature-based solutions as sustainable agriculture.

The Forum concluded that the eight global supply chains responsible for more than 50 per cent of global emissions could reduce about 40 per cent of those emissions through simple and affordable changes that would neither increase costs nor reduce efficiency, such as circularity,

recycling and the use of renewable energy.

The environmental impact of human activities arises from both production methods and consumption patterns, which are mutually reinforcing. From a production perspective, environmental impact (including climate impact) is determined by: the type of goods produced; the material footprint of the goods, including the extraction of raw materials; the production methods or technologies used; transport; the end-of-

life management of the goods produced; and production volumes.

However, addressing climate change is not just about reducing the footprint of firms on the biosphere; it is also about redefining the role of firms in the economy and, more broadly, in society. This involves finding new models of economic prosperity that are aligned with respect for planetary boundaries. Achieving this requires a transformation of corporate governance.

3.2. Necessity of transforming small and medium-sized enterprise governance

The central question regarding the role of firms, which is relevant not only in developing countries but also in developed ones, has gained attention since the 1980s with the “limits to growth” debate.

A systems approach was adopted to examine the failures of firms in preserving natural systems. The purpose of the firm itself has been questioned, and this inquiry is ultimately tied to the governance of firms. Corporate sustainable governance, therefore, is focused on how corporations need to transform to align themselves with the sustainability of economic models. It calls for a balance between leading and managing for both short-term and long-term results, while considering responsibility both inside and outside the corporation.

3.2.1. Sustainable corporate governance

Sustainability has evolved through three stages. Initially, the definition proposed in Our Common Future provided a normative framework for global governance innovations. This was

followed by the emergence of the triple bottom line model, which advocated assessing organizations on the basis of economic, social and ecological criteria. More recently, environmental, social and governance criteria have been introduced as a tool for investors to assess firms on sustainability-related grounds. This evolution has positioned sustainability as a strategic paradigm for addressing such social challenges as climate change and national debt crises. It allows businesses to move beyond traditional trade-offs – where sustainability and profitability might seem at odds – and instead find ways to integrate sustainability into their strategies in ways that create both economic and social value.

Corporate sustainability goes beyond corporate social responsibility; it requires a fundamental transformation of business models to align them with sustainable economic systems. This involves balancing leadership and management to achieve both short-term and long-term results while maintaining accountability with and beyond the corporation.

Sustainability integrates business and finance in value creation across three primary dimensions: environmental, social and economic. The environmental dimension is focused on preserving ecosystem stability and resilience, which are essential for human well-being. Social sustainability ensures the protection of human rights, access to basic social entitlements and the promotion of good governance. Lastly, economic sustainability addresses the financial foundations necessary for stable and resilient societies.

The main challenge today is shifting from a short-term, profit-driven focus to long-term objectives that foster ecosystem stability and economic sustainability. This transition requires rethinking corporate structures and legal frameworks to achieve better outcomes. A crucial aspect of this transformation involves modifying core corporate characteristics in alignment with these broader goals, thereby advancing sustainable corporate governance.

In the section 3.2.2, ways in which firms can integrate sustainability into their governance are explored. An overview of various corporate governance theories may be found in the annex to the present report.

3.2.2. Ways in which firms can embed sustainability in their governance

To bolster sustainability, firms should follow a cyclical process that encompasses commitment, leadership, implementation and engagement. Over the past two decades, research has shifted from broad questions – such as how firms affect society – to more specific investigations into the internal factors that

drive sustainable actions. One important area of focus has been the composition of a company's board of directors and its influence on sustainability practices.

As a result, the main themes in corporate sustainability studies have evolved from such general concepts as “social responsibility” and “sustainability reporting” to more precise aspects of governance, including “board composition”, “board size”, “independent directors” and “gender diversity on boards”.

Senior-level commitment to sustainability is crucial, beginning with a clear vision that is integrated into the firm's overarching strategy. This should be followed by the establishment of a sustainability committee responsible for guiding initiatives, setting specific goals and monitoring progress. Boards should embed environmental, social and governance considerations into corporate strategy through annual reviews of performance and materiality, in the sense of the factors most material to the firm, and by incorporating environmental, social and governance factors into capital allocation, business development and innovation.

To ensure environmental, social and governance integration, boards should explicitly include these considerations in strategic planning, target setting, performance evaluation and executive compensation. They should also approve a company purpose statement that reflects environmental, social and governance priorities, develop expertise in the most material environmental, social and governance issues for their industry, and adopt an approach suited to the company's environmental, social and governance maturity and operational context.

The next phase involves policy development and training to embed sustainability across all business functions, including establishing reporting mechanisms and linking employee compensation to sustainability performance. Lastly, ongoing engagement with stakeholders is crucial to aligning sustainability efforts with external expectations. Using international or industry benchmarks for comparison and transparency further reinforces the company's commitment to responsible business practices. This structured approach not only strengthens sustainability initiatives but also demonstrates the firm's dedication to responsible business governance.

Firms can integrate environmental sustainability into their corporate governance by:

- Distributing authority and resources among various corporate players, such as owners, management, board members and employees, while effectively managing conflicts of interest
- Developing a detailed and coherent environmental sustainability plan that is aligned with the firm's overarching business strategy
- Establishing a board-level sustainability committee to oversee the company's environmental initiatives
- Incorporating environmental sustainability metrics into executive compensation structures to incentivize leadership commitment
- Engaging with stakeholders, including investors, employees and customers, to understand their expectations and concerns regarding environmental sustainability

- Implementing environmental management systems to monitor and improve the firm's environmental performance
- Offering sustainability training for employees to raise awareness and foster a culture of environmentally responsible practices

Firms should embrace a comprehensive approach to corporate governance, integrating environmental sustainability into decision-making processes and ensuring that green initiatives are aligned with their overall business strategy.

The Global Reporting Initiative suggests that sustainability reporting contributes to sustainable development by providing a framework for firms to disclose their sustainability practices, thereby supporting the achievement of the Sustainable Development Goals. Alsayegh and others analysed data from 42 countries over six years and found a positive correlation between sustainability reporting and progress towards the Goals. They also indicate that sustainability reporting can serve as a mediator between national governance and the achievement of the Goals. The findings in their report underscore the need for governing bodies and decision-makers to adapt governance models and enforce stricter measures against firms that fail to engage in sustainability reporting, thereby advancing progress towards the Goals.

3.2.3. Benefits of sustainable corporate governance

According to United Nations Global Compact surveys, many small and medium-sized enterprises currently view environmental, social and governance programmes as unnecessary expenses

and do not recognize their potential benefits. In fact, fewer than half of firms with a turnover under \$25 million report on their sustainability performance.

There are some arguments against prioritizing environmental, social and governance factors in business strategy. One common concern is that doing so may come at the expense of financial performance. Another argument is that such factors are difficult to measure and may not directly affect financial results. In addition, some argue that prioritizing such factors could conflict with a company's fiduciary duty to maximize shareholder value.

There is growing recognition that environmental, social and governance factors are vital to long-term shareholder value, enabling firms to generate sustainable value. Integrating environmental, social and governance criteria helps companies to manage related risks, improve financial performance, enhance reputation, attract talent and strengthen stakeholder relationships. By incorporating these factors into decision-making, firms can identify new business opportunities, reduce costs and improve long-term financial performance.

Many studies have found a positive effect of environmental, social and governance factors on firm performance. Nasruzzaman and others, in their examination of corporations from both developed and emerging countries, found that high environmental, social and governance performance in environmentally sensitive companies positively affected profitability and might also increase market value, supporting stakeholder theory. However, the financial impact of such performance in environmentally sensitive companies from emerging countries remains insignificant

and inconclusive, indicating that more emphasis is needed on environmental, social and governance strategies and initiatives in those countries. The study suggests that environmental, social and governance performance is more widely recognized in developed country markets, with a stronger impact on the financial performance of companies from these countries compared with those from emerging markets.

Xiong Bai and others, in their study using panel data from companies in China, found that strong environmental, social and governance performance by listed firms could reduce their financing constraints. Such performance encouraged institutional investors to increase their holdings, sending positive signals to the market and easing financing challenges. They also noted that institutional investors preferred investments that had an environmental, social and governance focus, and that good environmental, social and governance performance could increase their tolerance for poor current operating performance.

Whelan and others present evidence suggesting a positive correlation between environmental, social and governance performance and financial outcomes. They also highlight how the rise of environmental, social and governance awareness and impact investing has influenced this relationship, as an increasing number of investors and firms prioritize environmental, social and governance factors in their decision-making processes.

In their report entitled *Developing Value*, which is based on 240 real-life cases across 60 countries, Sustain Ability, the International Finance Corporation and the Ethos Institute highlight the

business case for sustainability in emerging markets. They identify potential benefits, such as higher sales, reduced costs and lower risks, that can be achieved through improved corporate governance, environmental practices and socioeconomic development investments.

Adopting sustainable business approaches can enhance revenues by improving the local environment and economy, with a particular emphasis on cost reduction and sales growth in emerging markets. Companies, regardless of their type or region, can achieve financial gains by minimizing environmental impacts and improving employee conditions. For example, reducing energy and water consumption and improving working conditions can lead to significant cost savings, increased employee productivity and lower turnover rates.

Furthermore, more than half of smaller African firms that integrated sustainability into their operations reported improved product output and quality, access to new markets, reduced input costs and better opportunities for securing green finance.

Beyond improving financial performance, environmental, social and governance engagement can also strengthen firms' resilience by reducing risks in several ways.

Investors who engage with firms on environmental, social and governance issues help to identify and mitigate potential risks that could affect a company's reputation, operations or financial stability.

For instance, engagement on carbon strategy can help firms to address climate-related risks, such as regulatory changes or physical threats from climate change.

Proactively managing these risks reduces the likelihood of adverse events, such as environmental disasters or governance scandals, while simultaneously improving environmental, social and governance performance, attracting investment and reducing legal risks.

Environmental, social and governance engagement also signals a firm's commitment to sustainable practices, which can boost investor confidence, lower capital costs and improve long-term financial performance. Furthermore, by actively engaging with firms, investors reinforce their commitment to responsible investing and encourage companies to uphold high environmental, social and governance standards, ultimately benefiting both investors and businesses alike.

3.2.4. Obstacles and challenges to sustainable corporate governance

Several factors hinder firms from fully achieving environmental, social and governance goals, including: deficits in knowledge, data or capabilities; management complexity; board apathy; failure to translate intentions into action; deprioritization of environmental, social and governance initiatives; misguided long-term strategies; lapses in execution control; decision-making inertia; and neglect of critical details.

Given the critical role of board engagement, lack of competence appears to be a major impediment to sustainable corporate governance. A 2022 survey conducted by the Boston Consulting Group and the Institut européen d'administration des affaires revealed that fewer than half of directors believed that their boards possessed

sufficient expertise in environmental, social and governance matters to effectively hold management accountable and oversee the implementation of environmental, social and governance policies. This finding suggests that boards need to reassess their governance approaches to environmental, social and governance matters, expand their environmental, social and governance knowledge and expertise, and dedicate more time to strategic reflection on environmental, social and governance issues.

The literature highlights many challenges that small and medium-sized enterprises face in incorporating sustainability principles, including a lack of focus on climate change and digitalization. These challenges are particularly pronounced in emerging economies, where businesses are often led by individuals managing all aspects of operations. As a result, small and medium-sized enterprises frequently struggle with limited resources, insufficient knowledge and expertise, and difficulties in measuring the impact of sustainability initiatives.

Resource constraints make climate action particularly challenging for small businesses, as revealed by a Climate Hub survey of small and medium-sized enterprises.

Despite their efforts to reduce energy consumption (82 per cent), educate employees (64 per cent) and upgrade facilities (52 per cent), over two thirds report lacking sufficient resources to take adequate action. Awareness and resource availability are essential factors in tackling climate change.

A survey conducted by the Business Climate Hub further underscores these challenges, with

many smaller businesses citing resource shortages and lack of practical assistance. While 60 per cent of respondents reported having a climate action plan, 68 per cent acknowledged that resource constraints hindered their implementation efforts. Nearly half attributed delays in addressing climate change to financial constraints. Moreover, even though 70 per cent of small and medium-sized enterprises required external funding to lower carbon emissions, only one third had received financial incentives for that purpose.

In Tunisia, a 2018 survey of firms revealed that the main obstacles to developing corporate social responsibility initiatives in the country stemmed from a lack of understanding of the concept, which remained unclear for most companies. Many firms mistook corporate social responsibility for charitable actions or mere regulatory compliance.

Moreover, the approach to corporate social responsibility was often fragmented and unstructured, with scattered initiatives lacking a coherent strategy. The limited involvement of important stakeholders further hindered its development. In some cases, senior management was unconvinced of the necessity of a corporate social responsibility approach, while in others a lack of collaboration between departments impeded effective implementation.

The UNEP Copenhagen Climate Centre and Aguilera and others have identified significant drivers of and barriers to private sector adaptation, including the following:

- Underestimation of climate risks. Many businesses still tend to underestimate their exposure to climate risks, often adopting a narrow perspective that

overlooks potential impacts on supply chains and the broader market.

- Lack of a clear business case and short-term focus. Companies are often hesitant to invest in adaptation measures without a clear, quantifiable return on investment. A focus on short-term financial performance can lead to misaligned incentives and reduce commitment to long-term environmental sustainability.
- Unequal distribution of benefits. When the advantages of adaptation primarily benefit external stakeholders rather than the company itself, firms may be less willing to invest in such initiatives.
- Limited resources. Environmental sustainability initiatives often require substantial investments with long-term strategic implications, which can be challenging for firms with limited resources.
- Regulatory uncertainty. While legal and regulatory frameworks can incentivize private sector adaptation, uncertainty regarding evolving environmental policies can make it difficult for firms to develop clear and comprehensive environmental sustainability strategies.
- Lack of expertise. Firms may lack the necessary knowledge and capacity to design and implement effective sustainability initiatives, hindering their ability to integrate environmental considerations into their corporate governance practices.
- Resistance to change. Internal and external stakeholders may oppose environmental sustainability efforts, creating obstacles to their implementation. In addition, companies that fail to engage meaningfully with investors, employees and customers risk missing critical insights into stakeholder

expectations and concerns regarding environmental sustainability.

3.2.5. Role of environmental, social and governance regulations

Sustainability reports play a crucial role in a company's communication strategy, providing transparency on its economic, social and environmental impacts over time. Such reports not only benefit the company itself but also influence stakeholder decisions, including investor choices.

Initially integrated into annual reports, the sustainability report has become an important tool for systematically managing socially responsible activities, identifying future risks and opportunities and strengthening a company's competitive edge. While large corporations frequently use such reports to engage a wide range of stakeholders, small and medium-sized organizations may rely more on direct communication channels.

Although sustainability reporting remains largely voluntary, certain regulations – such as Directive 2014/95/EU of the European Parliament and of the Council – and specific stock exchange requirements have made it mandatory for some companies.

Mandatory environmental, social and governance disclosure regulations are aimed at bridging the gap between investors' demand for environmental, social and governance information and its availability from firms. In a study examining the impact of such regulations across 25 countries between 2000 and 2017, it was found that mandatory environmental, social and governance disclosure led to an increase of 2.9 percentage points in

the number of firms filing environmental, social and governance reports.

Interestingly, while the overall quality of environmental, social and governance reports did not improve on average, firms with lower environmental, social and governance performance showed significant improvements after the regulations were introduced. In addition, the study revealed that mandatory environmental, social and governance disclosure reduced negative environmental, social and governance incidents and lowered stock price crash risk, highlighting its positive effects on firm management and the broader market information environment.

Regulation in environmental, social and governance matters is crucial for establishing a standardized framework to ensure that corporations operate responsibly. It safeguards environmental sustainability, promotes social responsibility and enforces ethical governance. By holding businesses accountable for their impacts, regulation fosters transparency and trust among stakeholders – both of which are crucial for long-term success and societal acceptance.

Globally, regulations vary, with more advanced frameworks typically found in developed countries. While these regulations primarily target large corporations, they also affect small and medium-sized enterprises. Most are focused on climate risk management and disclosure requirements.

However, the absence of standardization or external evaluation may diminish the credibility of these reports, turning them into mere marketing tools. This has led to a growing emphasis on external assessments and recognized

sustainability reporting frameworks to enhance credibility and quality.

3.2.6. Expanding landscape of regulations in developed countries

New regulations introduced in 2023 or 2024 will significantly increase the volume of data that companies must report on their environmental impact, social responsibility and corporate governance, improving investor access to crucial information. For example, the Securities and Exchange Commission of the United States of America plans to mandate detailed climate-related disclosures by companies, which must be aligned with the newly established International Sustainability Standards Board's reporting standards on climate and broader sustainability issues.

Despite variations in disclosure requirements worldwide, the trend towards mandatory, standardized reporting is expected to grow. This reflects the increasing prominence of responsible investing, which saw assets in sustainability-focused funds reach \$3.9 trillion as of September 2021. The ongoing refinement of reporting frameworks, alongside evolving regulations, is aimed at providing a clearer understanding of long-term value creation through sustainable business practices, thereby supporting more informed investment decisions.

Proposed regulations may also require publicly listed firms to disclose material, indirect Scope 3 emissions from their supply chains. Consequently, small and medium-sized enterprises working with these firms may need to track and report their greenhouse gas output. In the European Union, Directive 2022/2464 of the European Parliament

and of the Council mandates that firms already subject to Directive 2014/95/EU include sustainability information in their reports starting on 1 January 2024. However, small and medium-sized enterprises have an additional two years – until 2026 – to comply, with their first reports due in 2027.

Small and medium-sized enterprises can pursue sustainability certifications, such as the ISO 14001 environmental management standard, and participate in sustainability reporting initiatives, such as the Global Reporting Initiative. In addition, they can collaborate with Governments, non-governmental organizations and other firms to tackle sustainability challenges and promote sustainable development.

3.2.7. Situation of developing countries

China and South Africa are among the few developing countries with a formal framework for sustainability classification, with South Africa adopting its taxonomy only in April 2022. In addition, only 25 out of 60 developing countries' stock exchanges require companies to report on environmental, social and governance practices.

Research by Singhania and Saini indicates that developed countries generally achieve higher environmental, social and governance scores than developing ones. The United States, Canada and Japan rank highest among developed countries, while South Africa, China and Indonesia lead among developing countries. The authors of that study also note that the gap in scores is mainly due to differences in governance and social factors rather than environmental considerations. Strengthening governance and social

frameworks, therefore, appears to be crucial for developing countries aiming to improve their overall environmental, social and governance performance.

Developed countries also tend to have more comprehensive and stringent regulatory frameworks. This suggests that developing countries need to adopt more robust regulations to encourage sustainable business practices. In addition, sustainability reporting strategies differ between regions. Reports from developed countries tend to be focused on such issues as sustainable production and supply chain emissions, whereas those from developing countries more frequently address such topics as education and human rights. The findings indicate that developed countries place greater emphasis on environmental concerns in their sustainability communications.

According to Stanislavská and others, studies reveal disparities in sustainability reporting between developed and developing countries in terms of content, type and scope. Reports from developed countries are typically focused on environmental performance, in particular on managing pollution, supporting societal groups and ensuring employee welfare. Conversely, reports from developing countries tend to highlight social performance, with an emphasis on investments that improve living standards, such as education, and the provision of food and water. These reports are aimed at addressing institutional gaps often caused by insufficient government resources or corruption. Both developed and developing countries prioritize customer and product-related reporting, demonstrating a customer-centric approach to sustainability reporting. The differences in reporting practices are largely attributed to varying institutional,

political and economic conditions, with companies in developing regions aligning their sustainability efforts to address local social and economic challenges.

International organizations, such as the International Finance Corporation, are developing guidebooks to raise awareness about environmental, social and governance issues among companies and investors in developing markets. This initiative is aimed at managing such issues effectively to ensure long-term profitability that extends beyond short-term gains. An overview of environmental, social and governance regulations in developing countries is provided in section A3 of the annex.

3.2.8. Environmental, social and governance reporting is not enough

Despite progress in environmental, social and governance reporting, current metrics prioritize input efforts over actual outcomes, making it difficult to measure corporate sustainability accurately. For example, environmental scores may highlight anti-deforestation policies without reflecting the actual impact on deforestation. The shift from corporate social responsibility to the integration of sustainability into core business strategies is focused on long-term value creation, but consistent sustainability performance measurement remains elusive.

New data sources and more research are needed to develop outcome-centric metrics and standardized evaluation methodologies.

Existing reforms of environmental, social and governance practices, mainly based on disclosure, fall short in driving substantial operational changes or

aligning shareholder incentives with sustainability goals. While disclosure promotes transparency, it is insufficient to push firms towards meaningful shifts in their practices. Such issues as greenwashing, inconsistent reporting quality and a lack of accountability further undermine their effectiveness. A more robust framework is needed that goes beyond disclosure, urging companies to embrace sustainable practices and realign incentive structures away from short-term profit maximization.

Integrating sustainability into corporate governance, such as through dedicated committees or stakeholder representation, is one approach. However, scholars suggest complementing this with liability and risk incentives to drive environmental priorities. These incentives include such financial measures as carbon pricing and loans linked to sustainability goals, such regulatory risks as fines for non-compliance, and legal liabilities for neglecting sustainability issues. Financial and real economy firms face different sustainability risks owing to their operational nature and regulatory environments. Financial firms deal with investment risks and disclosures related to environmental, social and governance practices, while real economy firms face direct environmental impacts, supply chain risks and regulatory compliance challenges. Each sector requires tailored sustainability strategies to manage risks and seize opportunities.

Sustainability cannot be achieved through environmental, social and governance practices alone. It requires a new vision of the economy and the future, in which the purpose and role of firms are harmoniously integrated.

3.3. State of corporate responsibility in North Africa

Sustainable corporate governance is still poorly developed and diffused in North Africa. The average quality of corporate responsibility in environmental, social and governance aspects in North Africa economies is low. North African firms lag significantly behind those in Eastern and Southern Europe and are among the worst performers, in particular in the environmental and social dimensions. The state of the regulatory environment for these practices in North Africa is presented below. World Bank Enterprise Survey data are used to establish a score for the 41 countries for which data is available in the database, including 3 from North Africa (Egypt, Morocco and Tunisia).

3.3.1. Regulatory environment in North Africa

All three countries have started developing regulations related to environmental, social and governance practices, although they are at different stages of evolution, implementation and enforcement.

3.3.1.1. Egypt

Regulations on corporate sustainable governance in Egypt have evolved in recent years, reflecting a growing emphasis on environmental, social and governance principles. The Egyptian Institute of Directors, working under the umbrella of the Financial Regulatory Authority of Egypt, drafted a corporate governance code that includes comprehensive guidelines for best practices in governance, transparency and

prudent management for all stakeholders of companies adopting the code.

The foundational framework for environmental protection in Egypt is established by Environmental Law No. 4/1994 and its subsequent amendments. The Law emphasizes the importance of preserving natural resources, addressing pollution issues and promoting the adoption of sustainable technologies. Detailed executive regulations set standards for maintaining air, water and soil quality, managing hazardous waste and regulating industrial emissions. The Renewable Resources Law (Law No. 203 of 2014) encourages the use of renewable resources for electricity production, providing incentives to investors in this field.

In 2016, the stock exchange of Egypt introduced model guidance for reporting on environmental, social and governance performance and implementation of the Sustainable Development Goals. This guidance was established to enhance transparency in the capital market and to ensure that listed companies had a comprehensive understanding of sustainability. It guides these companies in developing and issuing reports that disclose their sustainability policies and performance.

In July 2021, the Financial Regulatory Authority of Egypt enacted resolutions requiring companies listed on the country's stock exchange and entities engaged in non-bank financial operations to submit reports on their environmental, social and governance practices, with a focus on sustainability. There are two

compliance categories: first, listed entities and non-banking financial companies with a minimum issued capital of 100 million Egyptian pounds are obligated to prepare an annual report on these practices; and second, those with an issued capital of 500 million Egyptian pounds or more are additionally required to report on performance indicators consistent with the guidelines of the task force on climate-related financial disclosures.

Starting in 2022, Egypt mandated reporting on environmental, social and governance practices for companies listed on the country's stock exchange and those operating in non-bank financial sectors. Pursuant to this requirement, these firms are required to file annual reports, marking a significant step towards integrating sustainability into corporate governance and reporting practices.

It should be noted that, while the Financial Regulatory Authority of Egypt requires companies to report on their existing environmental, social and governance practices, it does not enforce the adoption of a comprehensive strategy in these areas. The objective behind this reporting requirement is to raise awareness among firms about the long-term risks associated with climate change and to encourage them to embrace sustainability initiatives.

In 2021, the Central Bank of Egypt released guiding principles focused on sustainable finance, emphasizing the importance of incorporating climate, environmental, social and governance factors into financial decision-making processes.

3.3.1.2. Morocco

In 2017, the Moroccan Capital Market Authority and the Casablanca Stock Exchange, with contributions from the

General Confederation of Moroccan Enterprises and the Economic, Social and Environmental Council, created a guide on corporate social responsibility and environmental, social and governance reporting for companies in Morocco. The guide was designed to help companies to better understand corporate social responsibility and prepare for future reporting obligations in these areas. It covers a range of topics, such as the basic concepts of corporate social responsibility and sustainable development, how to implement a corporate social responsibility strategy within a company, and how investors can integrate environmental, social and governance issues into their activities.

In 2019, the Moroccan Capital Market Authority introduced a circular requiring listed companies to include an environmental, social and governance chapter in their annual financial reports. That initiative was aimed at informing the public about the environmental and social impacts of these companies, as well as their governance practices. Most companies have complied with this directive, with 80 per cent sharing their environmental policies and 72 per cent outlining the measures taken to assess and reduce their ecological impact.

The private sector has launched various initiatives to support the sustainable transition, primarily within larger companies. The General Confederation of Moroccan Enterprises, the country's leading business association, with support from the Government, is guiding small and medium-sized enterprises towards the integration of sustainable practices. However, the adoption of sustainability practices – such as corporate social responsibility, environmental, social and governance standards, wastewater treatment, and water and material

efficiency – remains in its early stages in Morocco and is primarily focused on large organizations.

The Government, the private sector and civil society are actively working together to facilitate access to resources, financing and training for small and medium-sized enterprises, fostering a legal and regulatory framework that encourages the expansion of sustainable practices and environmental preservation. Under the aegis of the Confederation, the private sector in Morocco is adopting the principles of corporate social responsibility, in line with the ISO 26000 international standard on responsibility, covering ethics, sustainable development and legal compliance. Through its Responsible Business and Citizenship Commission, the Confederation promotes corporate social responsibility, emphasizing ethics, good governance, diversity and equal professional opportunities, thus reinforcing the private sector's commitment to these crucial areas.

The 2020 environmental, social and governance report barometer published by the Institut Marocain des Administrateurs indicates a rising trend among companies in establishing corporate social responsibility committees at the board level. Despite this, most companies fall short in providing adequate information regarding the composition and undertakings of these committees. Moreover, the barometer underscores the need for companies to enhance their dialogue on environmental, social and governance matters with stakeholders, notably by offering more comprehensive insights into their strategies and outcomes in these areas.

With regard to reporting, the barometer reveals that a growing number of

companies are issuing reports on environmental, social and governance practices, albeit with significant disparities in quality. Consequently, there is a call for companies to persist in elevating the quality of their reporting in alignment with the escalating expectations of stakeholders. The barometer further emphasizes the critical importance of maintaining transparency and uniformity in reporting, alongside adopting recognized standards and reference frameworks to ensure the comparability of the disclosed information.

The following points highlight key findings from the barometer:

- A total of 89 per cent of companies published an environmental, social and governance report in 2019, up from 81 per cent in 2018.
- The most commonly reported indicators are greenhouse gas emissions (reported by 87 per cent of companies), occupational health and safety (reported by 85 per cent of companies) and diversity and inclusion (reported by 80 per cent of companies).
- The most widely used standards and frameworks for structuring these reports are the Global Reporting Initiative standards (used by 70 per cent of companies), the principles of the United Nations Global Compact (used by 60 per cent of companies) and the Sustainable Development Goals (used by 50 per cent of companies).
- The preferred channels of communication with stakeholders are the annual report (used by 95 per cent of companies), the company's website (used by 90 per cent of companies) and financial communication, referring to the strategic disclosure and dissemination of financial and related

information to key stakeholders with the goal of ensuring transparency, trust, and market confidence (used by 80 per cent of companies).

The quality of environmental, social and governance reporting varies significantly among companies. Only 20 per cent of companies achieved a score higher than 50/100 in the quality assessment conducted by the barometer.

3.3.1.3. Tunisia

In Tunisia, corporate social responsibility was incorporated into the national legal framework through Law No. 2018-35 on 11 June 2018, making it a requirement for companies and other institutions. On 5 December 2021, the Tunis stock exchange unveiled its new environmental, social and governance disclosure guidelines, which are designed to assist issuing companies in understanding the context, characteristics and market best practices for these types of disclosures. The guidelines are part of a broader effort to align companies with global standards and promote transparency and accountability

Several projects are under way to boost corporate social responsibility in Tunisia. A clean production programme encourages companies to adopt eco-friendly production methods. A national eco-label certifies companies whose products and services are environmentally friendly. The corporate social responsibility label project is aimed at encouraging companies to adopt corporate social responsibility practices by offering them certification. A partnership programme helps 100 companies in the automotive and aerospace sectors in Tunisia to include social and environmental issues in their activities. That project is part of the nationally determined contribution and the national low-carbon development

strategy for climate change reduction, which is being carried out in collaboration with the Ministry of Industry and the Ministry of Transport.

3.3.2. Measuring the environmental, social and governance performance of firms in North Africa

The World Bank Enterprise Surveys, conducted between 2018 and 2020, covered 41 countries across various parts of the world, including the Middle East and North Africa, Southern Europe, Central and Eastern Europe, South-Eastern Europe and Central Asia. The survey involved more than 28,000 interviews with business owners and top managers of formal companies with more than five employees in the manufacturing and services sectors. It covered a wide range of business environment aspects, including access to finance, innovation, trade participation and performance measures. With regard to North Africa, the database includes data only for Egypt, Morocco and Tunisia.

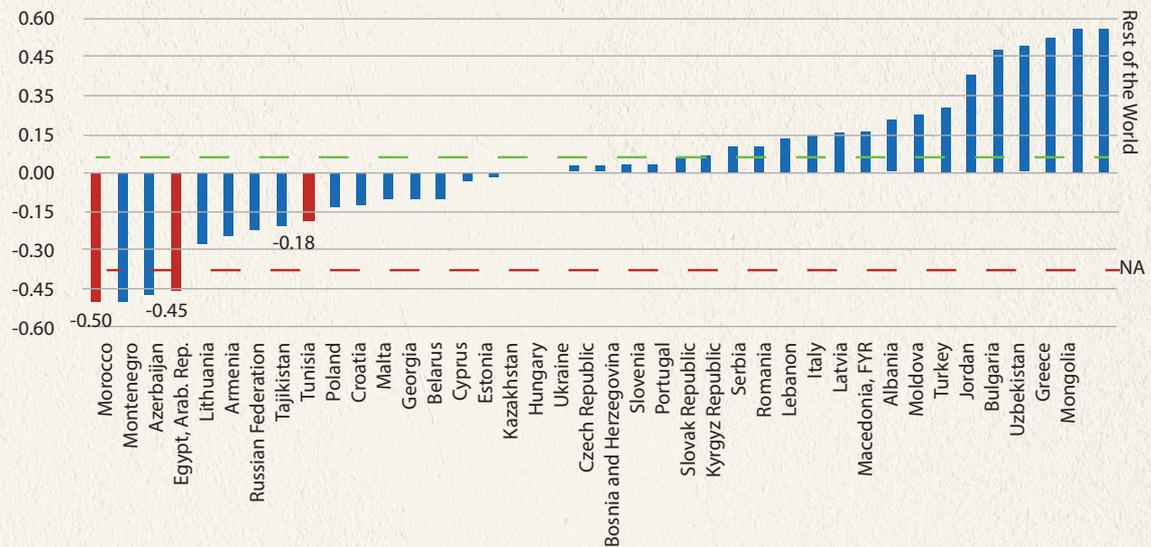
Using these data, a score has been established to assess sustainability performance. Details on the methodology used are available in 0 of the annex. The values of the environmental, social and governance score range from -0.5 (lowest performance) to 0.7 (highest performance).

3.3.2.1. Overall environmental, social and governance performance

Morocco (-0.5), Egypt (-0.45) and Tunisia (-0.18) demonstrate lower environmental, social and governance z-scores when compared with countries with stronger

performance, such as Greece (0.54), Uzbekistan (0.52) and Türkiye (0.38) (see figure II).

Figure II Environmental, social and governance score by country



---, average for the rest of the world

---, average for North Africa

Furthermore, when comparing Morocco, Egypt and Tunisia to other lower-middle-income countries, they also tend to exhibit weaker environmental, social and governance performance within this income category. From a global perspective, given that the average z-score is 0.06, firms in Morocco, Egypt and Tunisia are trailing behind, which indicates that there are opportunities for them to enhance their policies to align them with international standards.

3.3.2.2. Environmental, social and governance score by firm characteristics

In section 3.3.2.2, environmental, social and governance scores are examined with respect to various factors, such as regional disparities, sectoral differences, enterprise size, firm age and family ownership.

3.3.2.2.1. Regional disparities

In Egypt, regional scores vary, with Greater Cairo and the Middle and East Delta regions showing relatively lower scores, indicating potential sustainability challenges (see figure III). Meanwhile, Southern Upper Egypt and Northern Upper Egypt present slightly higher scores.

Figure III Environmental, social and governance score across regions



In Morocco, the Fes-Meknes region has the lowest score, while Marrakesh-Safi, Béni Mellal-Khénifra and Drâa-Tafilalet exhibit the best performance. In Tunisia, such regions as the north-east, south-east and south-west show relatively lower scores, while the central east, north-west and central west demonstrate more favourable environmental, social and governance practices.

3.3.2.2.2. Sectoral differences

The average environmental, social and governance scores by sector are provided in table 8, along with the variance, to show

the extent of convergence or divergence in performance. Egypt exhibits the lowest intersectoral disparities, while Morocco shows the highest. In Morocco, the agrifood industry demonstrates the greatest intrasectoral variability. In Tunisia, the textiles, clothing and leather manufacturing sector displays the most significant disparity in environmental, social and governance practices, whereas in Morocco, this sector has the lowest intrasectoral variability. Notably, there is considerable heterogeneity in environmental, social and governance practices within the services sector, excluding wholesale and retail trade. Overall, Tunisia experiences higher intrasectoral variability.

Table 8 Environmental, social and governance scores by sector

	Egypt	Morocco	Tunisia
Mean of scores			
Wholesale and retail trade	.	-0.49	-0.15
Manufacture of other manufactured goods	-0.41	-0.46	-0.25
Manufacture of textiles, clothing and leather	-0.51	-0.79	-0.30
Food industry	-0.49	-0.47	-0.05
Other services	-0.49	-0.39	-0.10
Variance of scores			
Wholesale and retail trade		0.39	0.69
Manufacture of other manufactured products	0.28	0.29	0.57

Manufacture of textiles, clothing and leather	0.27	0.15	0.90
Food industry	0.24	0.44	0.56
Other services	0.19	0.27	1.49

Source: Author's compilation, based on the World Bank Enterprise Surveys.

3.3.2.2.3. *Environmental, social and governance scores by enterprise size*

In Egypt, smaller companies, in particular those designated as micro and small enterprises, tend to have lower

environmental, social and governance scores. In Tunisia, while the same pattern is observed, medium-sized firms have much higher scores compared with those in Egypt or Morocco. In Morocco, there is not a significant difference in scores based on firm size.

Table 9 Environmental, social and governance scores by firm size (Mean (Variance))

	Micro (1–10)	Small (10–50)	Medium (50–250)	Large (over 250)
Egypt	-0.60(0.15)	-0.46(0.22)	-0.29(0.39)	-0.32(0.47)
Morocco	-0.46(0.50)	-0.53(0.27)	-0.55(0.26)	–
Tunisia	-0.36(0.78)	-0.26(0.65)	-0.14(0.81)	–

Source: Author's compilation, based on the World Bank Enterprise Surveys.

Note: Firms with more than 250 employees in Morocco and Tunisia have not been included because the number of firms is not significant.

3.3.2.2.4. *Environmental, social and governance scores by firm age*

Mature businesses, defined as those that have been established for more than 20 years, constitute a significant portion of the market in Egypt, Morocco and Tunisia.

While there are subtle differences in scores among different age categories, these variations are relatively modest. Tunisia is the exception, where mature firms have much higher scores than established firms (defined as those that have been established for between 10 and 20 years). A higher variance in scores is also observed in Tunisia.

Table 10 Environmental, social and governance scores by firm age (Mean (Variance))

	Egypt	Morocco	Tunisia
Growing (5–10 years)	-0.37 (0.2)	–	–
Established (10–20 years)	-0.46 (0.22)	-0.5 (0.32)	-0.26 (0.8)
Mature (over 20 years)	-0.46 (0.31)	-0.5 (0.34)	0.1 (0.93)

Source: Author's compilation, based on the World Bank Enterprise Surveys.

Note: Firms with more than 250 employees in Morocco and Tunisia have not been included because the number of firms is not significant. Moroccan and Tunisian “growing” firms are not included in the World Bank Enterprise Surveys.

3.3.2.2.5. Environmental, social and governance scores by type of ownership

Family-owned businesses are prevalent in all three countries, with varying impacts

on scores. In Egypt, non-family-owned businesses tend to have slightly better environmental, social and governance scores. In Tunisia, family-owned businesses tend to have more robust sustainability practices on average.

Table 11 Environmental, social and governance scores by type of ownership (Mean (Variance))

	Egypt	Morocco	Tunisia
Non-family-owned	- 0.43 (0.28)	–	- 0.32 (0.81)
Family-owned	- 0.53 (0.21)	- 0.66 (0.27)	- 0.09 (0.85)

Source: Author’s compilation, based on the World Bank Enterprise Surveys.

Note: The non-family-owned score is not included for Morocco because of the small number of firms.

In table 12, all variables are combined to obtain a more robust variation of scores across firms’ characteristics and environmental practices, comparing the Middle East and North Africa with Europe and Central Asia. In the Middle East and North Africa, different factors influence environmental, social and governance z-scores compared with Europe and Central Asia. Firms in the machinery and

equipment manufacturing sector have lower performance than in other sectors. Mature firms have lower performance than established and young firms, while larger firms exhibit better performance than smaller ones. Firms with a board of directors or supervisory board tend to have higher scores, as do family-owned businesses.

Table 12 Ordinary least squares regressions, dependent variable environmental, social and governance scores

	Europe and Central Asia		Middle East and North Africa	
	z-score		z-score	
Wholesale and retail trade	-0.0734	(0.123)	0.0830	(0.0552)
Motorization services	–	–	0.0532	(0.0455)
Chemical manufacturing	–	–	-0.0603	(0.0717)
Construction	0.168	(0.220)	0.0113	(0.0520)
Manufacture of metal products and non-metallic mineral products	-0.102	(0.125)	-0.0371	(0.0514)
Machinery and equipment manufacturing	-0.0771	(0.127)	-0.143**	(0.0655)
Manufacture of furniture	-0.173	(0.140)	-0.0426	(0.0570)
Manufacture of textiles, clothing and leather	-0.00131	(0.126)	-0.0542	(0.0512)
Manufacture of other manufactured products	-0.101	(0.123)	-0.0316	(0.0549)
Food industry	-0.125	(0.125)	0.0497	(0.0665)
Petroleum, plastics and rubber industries	-0.271*	(0.140)	-0.0561	(0.0691)
Other services	-0.0366	(0.123)	0.0395	(0.0504)

Established (10–20 years)	-0.0807***	(0.0265)	-0.0970***	(0.0316)
Mature (over 20 years)	-0.120***	(0.0270)	-0.147***	(0.0314)
Medium (50–250 employees)	0.0809***	(0.0190)	0.0456	(0.0324)
Large (over 250 employees)	0.376***	(0.0571)	0.204**	(0.0963)
Top manager is a woman	-0.0468***	(0.0172)	–	–
Has a board of directors or supervisory board	0.0837***	(0.0185)	0.0533**	(0.0241)
Family-owned business	0.0550***	(0.0155)	0.0523**	(0.0261)
Lower-middle-income countries	0.185***	(0.0308)	–	–
Upper-middle-income countries	0.0658***	(0.0182)	–	–
Owned by private domestic individuals	0.0923***	(0.0341)	-0.0164	(0.0614)
Year = 2019	-0.0488	(0.0323)	–	–
Year = 2020	-0.0720*	(0.0413)	0.0461	(0.0411)
Establishment monitors its energy consumption	0.0191	(0.0158)	0.0443	(0.0277)
Unknown whether establishment monitors its energy consumption	-0.0547	(0.213)	–	–
Strategic objectives mention environmental or climate change issues	0.419***	(0.0307)	0.663***	(0.0545)
Has a manager responsible for environmental or climate issues	0.532***	(0.0390)	–	–
Adopted heating and cooling improvements	0.0292	(0.0189)	0.0919**	(0.0370)
Adopted more climate-friendly energy generation on site	0.183***	(0.0281)	0.335***	(0.103)
Upgraded machinery	0.0647***	(0.0180)	0.0722***	(0.0244)
Engaged in energy management	0.151***	(0.0219)	0.0344	(0.0388)
Engaged in waste minimization, recycling and waste management	0.135***	(0.0174)	0.153***	(0.0244)
Adopted air pollution control measures	0.336***	(0.0291)	–	–
Upgraded vehicles, vessels or aircraft in its fleet	0.135***	(0.0182)	0.118***	(0.0278)
Improved lighting systems	0.0285*	(0.0171)	0.177***	(0.0242)
Adopted other pollution control measures	0.308***	(0.0314)	–	–
Adopted measures to enhance energy efficiency	0.0662***	(0.0182)	0.0337	(0.0348)
Unknown whether adopted measures to enhance energy efficiency	0.0457	(0.0734)	-0.173*	(0.0903)
Engaged in water management	0.198***	(0.0238)	0.438***	(0.0564)
Held an internationally recognized quality certification	0.0935***	(0.0203)	-0.0148	(0.0359)
Still in the process of obtaining an internationally recognized quality certification	0.259**	(0.120)	-0.0881	(0.196)
Used technology licensed from a foreign-owned company	0.109***	(0.0254)	0.282***	(0.0748)
Had a formalized, written business strategy	0.0430***	(0.0155)	-0.0632	(0.0492)
Had energy consumption targets	0.0852***	(0.0205)	0.168***	(0.0387)
Unknown whether had energy consumption targets	0.266	(0.328)	0.204	(0.501)
Health and hygiene regulations posed no obstacle	-0.306***	(0.0371)	-0.392***	(0.0719)
Health and hygiene regulations posed a minor obstacle	-0.294***	(0.0385)	-0.366***	(0.0705)
Health and hygiene regulations posed a moderate obstacle	-0.318***	(0.0365)	-0.440***	(0.0680)
Environmental regulations posed no obstacle	-0.455***	(0.0340)	-0.270***	(0.0652)
Environmental regulations posed a minor obstacle	-0.448***	(0.0349)	-0.258***	(0.0661)
Environmental regulations posed a moderate obstacle	-0.417***	(0.0337)	-0.332***	(0.0646)

Occupational safety regulations posed no obstacle	-0.543***	(0.0404)	-0.234***	(0.0634)
Occupational safety regulations posed a minor obstacle	-0.544***	(0.0421)	-0.221***	(0.0633)
Occupational safety regulations posed a moderate obstacle	-0.531***	(0.0390)	-0.322***	(0.0640)
Partnership	–	–	-0.0535	(0.0724)
Shareholding company with non-traded shares or shares traded privately	0.0697***	(0.0257)	-0.0240	(0.0821)
Sole proprietorship	0.0600**	(0.0292)	-0.0426	(0.0656)
Limited partnership	0.0899**	(0.0366)	-0.00404	(0.0678)
Constant	0.509***	(0.139)	0.238*	(0.136)
Observations	7 715		2 488	
R-squared	0.594		0.505	

Source: Author’s compilation, based on the World Bank Enterprise Surveys.

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

In the Middle East and North Africa, and in a manner similar to Europe and Central Asia, such factors as having strategic objectives that mention environmental or climate change issues, having a manager responsible for environmental or climate issues, and adopting certain environmentally friendly practices (such as heating and cooling improvements and more climate-friendly energy generation on site) are associated with

more positive environmental, social and governance scores. In addition, while obstacles related to health and hygiene regulations, environmental regulations and occupational safety regulations are present, their impact on environmental, social and governance scores might be less prominent compared with the situation in Europe and Central Asia.

4. Climate-engaged small and medium-sized enterprises: a reform agenda for North Africa

Adopting sustainable corporate governance is critical for North Africa. The subregion should embark on a development path that is aligned with respect for planetary boundaries. In fact, a new development path is a prerequisite for the effective adoption of sustainable corporate governance by firms.

It is true that North African countries contribute relatively marginally to climate change compared with the highest-greenhouse-gas-emitting countries or regions. They must, however, urgently accelerate the adaptation of their economies. Moreover, it would be mistaken to separate adaptation from mitigation, as medium-to-long-term actions in both domains converge.

Certainly, the subregion must continue its economic and social development. Although North Africa is progressing well towards achieving the Sustainable Development Goals, there is still progress to be made, and climate change poses a threat to these achievements. However, the pursuit of GDP growth and long-term well-being are not necessarily aligned when growth is accompanied by environmental degradation.

It is critical for the countries of the subregion, and more generally for developing countries, to rely on a new measure of well-being that goes beyond GDP growth and addresses the satisfaction of basic needs in a sustainable way for all citizens. This approach would be better

aligned with defining a new performance metric for companies that goes beyond merely increasing profits, encompassing progress in reducing greenhouse gas emissions and respecting planetary boundaries.

Only by balancing the environmental cost of producing a good or service with its contribution to the well-being of citizens can appropriate public policies be implemented to hold companies accountable. A measure of well-being that is based on variables other than GDP, and that takes into account the real aspirations of citizens and what makes them happy, would give more meaning to companies in their role in limiting global warming and environmental degradation.

Employing GDP as a well-being measure prompts corporations to chase profits, hindering the emphasis on environmental, social and governance goals. This GDP-centric approach can overshadow the need for responsible business conduct, thwarting the integration of environmental, social and governance objectives vital for sustainable, equitable progress. Consequently, it is pivotal to devise an alternative well-being measure to delineate a new, holistic purpose for firms that encapsulates broader social and environmental betterment.

A clear sense of purpose, at an aggregate level, is essential. It can be a powerful motivator for individuals and organizations to engage in climate action, providing a compelling justification. When a purpose is well-defined, there is a higher likelihood

of commitment to long-term objectives, even at the cost of short-term sacrifices. This approach can effectively address the problem of collective action that often impedes climate-related initiatives.

Moreover, a shared purpose helps to attract and retain employees, customers and investors who are aligned with the organization's values. This creates a positive feedback loop whereby the common purpose drives the organization closer to its objectives and can significantly encourage climate action

Asking companies whose objective is still very much the pursuit of profit to reduce their environmental footprint when there is collectively no vision of an economic future that is compatible with planetary limits has little chance of achieving results commensurate with the stakes and urgency of the climate crisis. Globally, the implementation of environmental, social and governance regulations is currently following the logic of green growth, which is increasingly being questioned.

The general idea is that it would be possible, even in wealthy countries, to continue GDP growth and simply encourage companies to consider the environmental impact of their activities. However, numerous cases of so-called "greenwashing", continuous environmental degradation and increasing carbon dioxide emissions suggest that such an approach is unlikely to be fruitful.

Certainly, it is necessary to implement incentives for companies, including a carbon tax. However, these incentives will not be sufficiently effective unless they are part of a new vision of the future that leads to an economic model capable of making the well-being of populations compatible with respect for planetary boundaries, both local and global. This

is valid for both wealthy and developing countries, although the former must make a much more significant and urgent effort to reduce their environmental footprint.

For developing countries, and specifically North African countries, engaging now in a transformation of their societies – economically and socially – will be much less costly than continuing on the path taken by wealthy countries and adapting in the future. As indicated above, climate change is fraught with uncertainties, and catastrophic scenarios cannot be ruled out. Transforming now is thus essential to guaranteeing resilience in the face of future shocks of potentially devastating magnitude.

A holistic approach is needed. The entire system of business must transform to embark on a path of economic development that is compatible with planetary boundaries, encompassing demand, the financial system and environmental governance at the country level.

Since the environmental and social responsibility of a company is intimately linked to its role in society, redefining this role cannot be done independently of a collective objective. Therefore, it is imperative that the transformation of corporate governance be as efficient as possible from the perspective of sustainable collective well-being. This transformation must be part of a new vision and a new model of the economy.

In this regard, the first recommendation is to build a vision of the future with a new measure of well-being and goals to be achieved in harmony with planetary boundaries. This recommendation is linked to Goal 12 and should be intertwined with nationally determined contributions.

Currently, nationally determined contributions are not based on well-being goals that are aligned with planetary boundaries. Instead, they reflect the anticipated capacity of countries, under the existing development model, to achieve net-zero emissions. Nationally determined contributions are primarily focused on climate-related issues, in particular the reduction of greenhouse gas emissions (mitigation) and strategies for adapting to the impacts of climate change (adaptation). While these goals are crucial, they cover only a subset of the broader environmental challenges captured by the concept of planetary boundaries.

As seen in North Africa, with such issues as water and soil degradation, biodiversity loss and the relatively inefficient use of materials in contributing to well-being, there is an urgent need for the subregion to define a new vision of development, aligned with planetary boundaries.

Recommendation 1: *define a collective vision for sustainable well-being*

A new vision for the future should be collectively defined that includes a measure of well-being along with new “well-being goals” aligned with “local planetary boundaries”. A participative approach should be adopted that involves all stakeholders (citizens, firms, etc.) to build a common understanding of the challenges and the transformations needed. This requires:

- Defining local planetary boundaries.
- Defining sustainability by conducting an analysis of the ways in which the economy affects the environment and matching sustainability with new well-being goals.

- Setting environmental priorities, such as those that have been identified in previous sections of the present report: water stress; soil health management and desertification; biodiversity loss; and pollution.
- Including these priorities in environmental, social and governance reporting, as understanding how economic activity affects these four dimensions is critical to building sustainability and designing appropriate public policies to help and incentivize firms to transform their activities.

Existing development models should be adapted to build sustainability and achieve new well-being goals. Decreasing the material intensity of economic development is critical for sustainability in North Africa. This will also contribute to other dimensions of sustainability, such as water management, soil health, pollution and biodiversity loss. However, reducing material intensity cannot be achieved without establishing a new set of well-being goals and rethinking the economic model. This process cannot be top-down; it must be a collective learning journey whereby the State, firms and citizens all contribute by engaging in a transformation guided by new well-being goals that are aligned with local planetary boundaries.

As argued in section 0, although citizens are sensitive to environmental issues, they do not prioritize them with regard to public policies. This is not unique to countries in the subregion; surveys worldwide reveal a dichotomy between the perception of climate change threats and political support for climate policies. Therefore, it is important that this new vision of the future, which integrates the pursuit of citizens’ well-being and respect for planetary boundaries, be supported by a significant increase in awareness and understanding of climate change and

its stakes among a range of stakeholders. The following recommendation is also linked to Goal 12, as raising awareness about sustainability among both firms and citizens is critical for transforming the economy.

Recommendation 2: *increase awareness within the economy*

Firms and citizens often lack information on climate change and therefore need to acquire both general and specific knowledge (sectoral, geographical, etc.) on climate change and its consequences.

In the area of education and training:

- Specialized educational initiatives and training sessions should be developed and organized that focus on climate change, its consequences and sustainable practices. These initiatives can be customized to suit various industries and organizational hierarchies, catering to everyone from employees to top-level management. The primary emphasis should be on showcasing the compelling business rationale for sustainability and the advantages of mitigating climate-related risks.
- Successful examples should be highlighted of firms that have embraced sustainability and profited from doing so. Real-world case studies can serve as powerful illustrations of the benefits and possibilities of climate-conscious business strategies.

In the area of awareness for citizens:

- Public education campaigns should be mounted, using various media channels.

- Climate change education should be integrated into school curricula and workshops and community events organized.
- Citizen engagement should be facilitated, local initiatives supported and emphasis placed on climate adaptation measures.

In the area of collaborative partnerships:

- Collaborative partnerships should be established with non-governmental organizations and advocacy groups with specialized knowledge in climate change.

Countries should not wait for the full implementation of recommendation 1, as it may be a lengthy process, especially since it requires a participatory and inclusive approach. In the meantime, quick wins can be achieved by encouraging companies to start transforming their governance so as to integrate their environmental impact. However, it should be noted that recommendation 1 is crucial for two reasons: first, to drive the transformation of corporate governance to a level that significantly influences the environmental impact of human activities; and second, to lay the foundation for a new economy centred around a “new firm”. Thus, recommendation 1 sets the stage for the emergence of a new role for firms, based on a purpose that integrates harmoniously into a new economic model.

This question goes well beyond the scope of the present document. The following is focused on the conditions for a rapid transformation of corporate governance, independently of recommendation 1. However, the faster the proposals set out in recommendation 1 are implemented, the quicker this transformation will occur and the better it will be adapted to climate challenges, among others. Corporate

governance depends on the purpose of the firm, that is, its role in society, which in turn depends on the type of economy.

For example, in a “green growth” economy type governed by the rules of “green capitalism”, sustainable corporate governance is an attempt to reconcile maximizing profit for shareholders with minimizing the firm’s environmental impact. In an economy that transcends growth objectives, the essence of sustainable governance undergoes a fundamental transformation, as the core mission of businesses is reenvisioned. In this new paradigm, the mandate of corporations extends well beyond the pursuit of profits to encompass a wider commitment to social and environmental stewardship. These firms are dedicated to creating value in a manner that is both ecologically sound and socially advantageous.

This shift places a heightened emphasis on corporate social responsibility, with a strong focus on harmonizing the needs and interests of diverse stakeholders, including customers, employees and the broader community, into corporate strategies and actions. Within this view, the principles of a circular economy gain paramount importance, driving efforts towards resource optimization and waste reduction. Innovation is strategically steered to develop solutions that address critical global issues, notably climate change and resource scarcity. This approach is anchored in ethical governance and transparency, reinforcing accountability and fostering trust among all stakeholders.

Ultimately, this redefined role of businesses in an economy that balances growth with other aims is about fostering resilience, enabling adaptation and promoting inclusive development, all with

the aim of contributing to a sustainable system in which the economy is aligned with environmental conservation.

To engage in sustainability, a firm may either find it profitable (such as producing goods that contribute to mitigating climate change) or be compelled by the necessity to adapt to new regulations or changing market conditions (e.g., a shift in customer preferences). Sustainable corporate governance is essential for a firm to build the capacity to transform its business model, adapt and build resilience in the face of new conditions brought by climate change.

As outlined in section 0, there are many reasons why small and medium-sized enterprises may not adopt sustainable governance models, such as the cost of adopting new models and access to information.

A qualitative investigation conducted with 12 Moroccan companies bearing the corporate social responsibility label reveals that these firms recognize the significance of environmental stewardship and the imperative of channelling investments towards sustainable environmental endeavours. The respondents underscored the critical role of corporate social responsibility and the urgency to safeguard the environment for future generations. They also highlighted the financial and strategic gains linked to sustainable environmental practices, such as cost mitigation and enhanced brand reputation. Nevertheless, they are encountering such hurdles as resource scarcity and competitive pressures. The survey indicates a need to explore avenues for funding environmental investments and elevating stakeholder awareness regarding the relevance of environmental, social and governance principles. In addition, the competitive

demand to sustain profitability could potentially restrain their capacity to allocate investments in sustainable environmental practices.

These obstacles highlight the market's incapacity to tackle climate change issues alone. The market suffers from many imperfections that prevent it from efficiently incentivizing firms to transform. Market inefficiencies in addressing climate change stem from several important economic issues. Negative externalities of pollution lead to excessive greenhouse gas emissions. The public goods nature of a stable climate creates a free-rider problem, as the benefits of mitigation efforts are shared globally, diminishing individual incentives to act. Markets, focused on short-term gains, discount the future benefits of climate actions, leading to underinvestment in long-term solutions. Information asymmetry about climate risks and mitigation strategies leads to suboptimal decision-making. Capital market imperfections hinder financing for sustainable technologies, while markets driven by short-term profit maximization overlook long-term environmental sustainability. Regulatory and policy uncertainties, at both the local and global levels, further deter investments in green initiatives, emphasizing the need for comprehensive government intervention and global cooperation.

Consequently, the role of the State is crucial in fostering and facilitating the adoption of sustainable governance practices. For instance, the integration of sustainability standards into public regulations and mandating these standards as evidence of corporate diligence in sustainability represents a strategic approach. Economic incentives for adopting sustainable governance practices should be complemented by policy measures aimed at reducing the

challenges faced by small and medium-sized enterprises in adapting to climate risk. The ability of such enterprises to adapt is significantly influenced by the external business environment, in particular in such aspects as access to finance, constraints in accessing markets and technologies, availability of climate-specific information services, and prevailing market inefficiencies.

A set of complementary proposals follows for building an incentive environment for the adoption of sustainable corporate governance.

Recommendation 3: favour the emergence of a system of environmental impact measurement

Measuring the environmental impact of firms is essential for building sustainability. It is critical to develop methodologies and tools that continuously assess the impact of firms on such important dimensions as water, soil, biodiversity and pollution. The State plays a vital role in providing public support for the development, adoption and diffusion of these methodologies and tools within the economy, in particular to assist small firms that may lack the necessary skills and resources.

Recommendation 4: establish market incentives to promote sustainability

Market incentives should be created to promote sustainability, both on the demand side and the supply side.

Demand side

- Develop a sustainability measurement and indicators on the basis of recommendation 1.

- Reduce value added tax on goods on the basis of the value of these indicators.
- Develop green public procurement by prioritizing the purchase of sustainable goods and services and by providing preferential access to firms that meet certain environmental standards, such as certifications. Doing so could enable the emergence of a market for green products, incentivizing firms to develop and offer sustainable goods and services.

Supply side

- Integrate environmental, social and governance factors into banking and financial institutions through mandatory reporting and risk assessments. Adjust capital requirements to favour green investments, conduct climate risk stress tests and embed environmental, social and governance considerations into supervisory reviews. Set standards for green products and offer sustainable investment guidance to align banks with sustainability goals.
- Incentivize firms by establishing financial incentives and subsidies to encourage them to adopt sustainable practices.
- Offer financial assistance and capacity-building to small and medium-sized enterprises to help them to adopt sustainable governance.
- Provide tax breaks, grants or subsidies for firms that invest in renewable energy, energy-efficient technologies or other sustainable initiatives, such as the investment tax credits for solar and wind energy provided in the United States.
- Condition the amount of some State aid on sustainability indicators.

Recommendation 5: *set a course for firms*

The Government must establish a road map with clear objectives for achieving the sustainable transition. This road map should enable companies to plan and make decisions regarding investment, production and other activities. Firms need a clear direction and an understanding of where the economy is heading.

Governments should engage firms in national strategies to create convergence between their efforts and national adaptation goals. It is also important to avoid frequent policy changes, which create uncertainty and prevent economic stakeholders from fully committing to the sustainability transition.

For example, as noted in section 2.4, North African economies have considerable scope for improvement in material efficiency. If Governments decide to improve the performance of their economies in this area, they can send a strong signal to the private sector, providing a clear direction to follow. This is also crucial considering the issue of water scarcity. A strong signal should be sent to both firms and citizens to engage the whole economy in more efficient water use. For firms, this could be an explicit and mandatory requirement in any environmental, social and governance regulation.

All this reinforces the need to build a shared vision of the future and a new economic and social development model to achieve it. This recommendation is important because it ensures that government objectives are aligned with the transformation efforts that companies need to make.

Recommendation 6: *support firms' capacity to embrace the sustainability transition*

Support for firms' capacity to embrace the sustainability transition may take several forms, including:

- Providing firms with comprehensive risk assessment and management tools, including climate risk modelling and vulnerability assessments, so that they can integrate these considerations into their strategic planning.
- Supporting the development of a system of climate tools for firms to measure and report on their impacts and integrate these tools into their strategic planning and risk management.
- Providing technical assistance and advisory services to help firms to understand and prepare for climate impacts effectively, including by organizing capacity-building workshops and training programmes focusing on climate science, impact assessment and adaptive strategies.
- Encouraging the adoption of environmental performance certification (such as certification under the ISO 14001 standard, the Carbon Trust Standard for Zero Waste

to Landfill and the Cradle to Cradle Certified standard).

- Building collaborative platforms for knowledge-sharing to facilitate peer-to-peer learning and foster collective problem-solving in adaptation efforts.
- Supporting research and development in climate adaptation technologies, providing access to crucial climate data and information.
- Developing public-private partnerships for specific adaptation projects.
- Encouraging cooperative efforts among corporations, governmental bodies and civil society organizations to attain shared environmental objectives by fostering the involvement of relevant stakeholders in environmental decision-making and public policy design.
- Supporting the development of climate-resilient infrastructure and the enhancement of supply chain resilience to further strengthen firms' capacity to withstand and adapt to climate disruptions.

Following the example of many countries, "sustainability entities" can be set up to promote sustainable practices for businesses or individuals (see box 4).

Box 4 Examples of sustainability entities

Box 3 Some examples in emerging markets

Open-es, developed by the energy company ENI, is a digital platform accessible to all, designed to assist companies in measuring and reporting their sustainability data in a standardized and shareable format. This platform also incorporates a social network feature, facilitating new partnership opportunities across supply chains. Open-es has attracted over 4,000 companies from 76 countries, with small and medium-sized enterprises comprising 80 per cent of its membership.

Ikea collaborates with its suppliers to foster sustainable supply chains by aiding small and medium-sized enterprises in obtaining renewable energy through the collective negotiation of clean power agreements for groups of suppliers. Ikea mandates that all its suppliers adhere to a code of conduct inspired by the 10 principles of the United Nations Global Compact, setting firm guidelines for environmental, social and labour conditions. In addition, Ikea employs a "staircase model" to assist suppliers in continuously enhancing their environmental, social and governance performance.

The United Nations Global Compact, the world's most extensive corporate sustainability initiative, is committed to supporting small and medium-sized enterprises via its local networks, operating in 69 countries. These networks are well placed to guide companies in understanding the principles of responsible business within diverse national, cultural and linguistic settings. The Compact's small and medium-sized enterprises engagement strategy is focused on developing bespoke resources and programmes, catering to the unique needs and interests of such enterprises.

As highlighted in section 3.3, environmental, social and governance practices and regulations remain underdeveloped in North Africa, despite the critical importance of this issue. It is necessary to accelerate the implementation of an effective legal framework and significantly increase the dissemination of environmental, social and governance practices within companies.

Recommendation 7: *accelerate the diffusion and adoption of environmental, social and governance practices*

The diffusion and adoption of environmental, social and governance practices can be accelerated by:

- Strengthening the regulatory framework by adopting international

standards, in particular to harmonize practices with countries with important trading partners and to create an attractive environment for foreign investment.

- Specifying a timetable for the mandatory implementation of regulations, starting with large companies owing to their significant leverage over the economy, while providing support to these large companies to help their small and medium-sized enterprise suppliers to adopt environmental, social and governance practices, and establishing a dedicated support mechanism for such enterprises.

The role of large companies is particularly important, and the countries of North Africa can draw inspiration from practices increasingly being developed worldwide (see Box 5).

Box 5 Examples of the role played by large companies in promoting sustainable practices among their suppliers

Open-es, developed by the energy company ENI, is a digital platform accessible to all, designed to assist companies in measuring and reporting their sustainability data in a standardized and shareable format. This platform also incorporates a social network feature, facilitating new partnership opportunities across supply chains. Open-es has attracted over 4,000 companies from 76 countries, with small and medium-sized enterprises comprising 80 per cent of its membership.

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It is important to adopt best practices in the design of environmental disclosure policies from the outset and to align their content with local conditions, or, as indicated in recommendation 1, with local planetary boundaries.

IFC has identified five criteria for high-quality environmental disclosure policies:¹⁶

- Environmental integrity, addressing sustainability-related financial disclosures as well as impacts on people and the planet, with a holistic environmental approach.

¹⁶ IFC, IFC ESG Guidebook.

- Materiality, focusing on information that is relevant to investors and other stakeholders.
- Completeness, providing a comprehensive picture of the company's environmental performance.
- Clarity, presenting information in a clear and understandable manner.
- Comparability, allowing for meaningful comparisons of environmental performance over time and across firms.
- Developing a process for monitoring and enforcement of environmental disclosure requirements.
- Establishing a process for continuous improvement of environmental disclosure requirements.

While there is no one-size-fits-all process for policy development, these steps can help regulators to formulate better policies.

IFC proposes a framework consisting of the following six steps to help regulators to formulate better policies in the area of environmental disclosure:

- Connecting initial regulatory activities to reporting through mandatory requirements to disclose.
- Formulating key indicators by aligning them with globally recognized disclosure standards and frameworks.
- Developing a taxonomy of environmental risks and opportunities.
- Establishing a process for independent assurance of environmental disclosures.

In conclusion, countries in the subregion must recognize that sustainable development is unattainable without an in-depth review of their economic development strategies. This review should be based on a new measure of well-being and set objectives that respect local planetary boundaries. A new vision of the future is essential, one that aligns public policies and includes all stakeholders. This vision will redefine the role and function of businesses in the development process, making them instruments for achieving new well-being objectives. Such a transformation in corporate governance is crucial for companies to genuinely contribute to sustainability.

Annex

A1. Corporate governance

Corporate governance can be defined in various ways, but, simply put, it is the system through which businesses are monitored, managed and controlled. It often refers to how corporations are directed and controlled, with directors and senior executives guiding the company through challenges to achieve its goals. Corporate governance is crucial, as it helps to develop and refine the laws, regulations and contracts governing a firm's operations. It ensures shareholders' rights, reconciles stakeholders' and managers' interests, and maintains transparency. This framework allows all parties to fulfil their responsibilities, contributing to the corporation's growth and value creation.

Corporate governance and environmental, social and governance criteria are becoming increasingly interconnected, both aimed at improving how companies are run and their positive impact. This integration has led to the establishment of both official regulations and self-imposed guidelines by companies, which often choose to follow standards for environmental responsibility and stakeholder engagement. While many view this as a positive development, others argue that stronger laws are needed to compel companies to actively address such significant global issues as climate change. Some experts believe that corporate governance strengthens environmental, social and governance criteria by providing a solid foundation of principles. However, others emphasize an important difference: environmental,

social and governance criteria are focused more on values and external impact, whereas corporate governance is concerned with internal rules and structure.¹⁷

There are different theories and underlying mechanisms commonly used to explain the corporate governance of environmental sustainability. Some of the main theories include:

- Agency theory, which highlights that conflicting goals within firms can deter managers from prioritizing environmental sustainability, owing to the upfront costs involved
- Resource dependence theory, which posits that sustainability can lessen firms' reliance on external resources, aiding long-term viability
- Upper echelons theory, which suggests that top management's values and experiences have a significant impact on a firm's sustainability initiatives
- Institutional theory, which notes that firms are shaped by external institutional norms and expectations

These theories clarify how environmental sustainability is managed in corporations, aiding the incorporation of sustainability into decision-making processes.¹⁸ Ownership structures play a crucial role in shaping firms' environmental sustainability initiatives. Various types of owners – including owners of family firms, the State and institutional investors – influence

17 Alan Gutterman, "Sustainability and corporate governance", 27 June 2023. Available at <http://dx.doi.org/10.2139/ssrn.4493058>.

18 Ruth Aguilera and others, "The corporate governance of environmental sustainability: a review and proposal for more integrated research", *Journal of Management*, vol. 47, No. 6 (2021).

firm strategy, environmental engagement and reporting in different ways. Diverse ownership types influence sustainability outcomes in distinct ways. For instance, family commitment in family firms fosters proactive environmental strategies, while minority shareholders might hinder

environmental disclosure. Concentrated ownership does not necessarily guarantee better environmental performance, owing to potential costs. Institutional investors, such as asset managers, can also have an impact on sustainability outcomes.

A2. Environmental, social and governance score methodology

To construct the corporate environmental, social and governance responsibility composite indicator, a meticulous process was undertaken, involving the following steps:

- (1). Survey analysis. The entire World Bank Enterprise Survey questionnaire, comprising over 200 questions, was scrutinized. Questions related to environmental, social and governance practices were identified and allocated to their respective pillars – environmental, social or governance.
- (2). Question reduction. The number of questions was reduced to 60, applying specific criteria. Questions were excluded if there was a substantial amount of missing data (more than 40 per cent), which was often owing to sector-based eligibility, or if they exhibited redundancy by being highly correlated with other variables.
- (3). Factor analysis. Subpillars and pillars were calculated using factor analysis of mixed data, considering both qualitative and quantitative elements. This approach ensured a comprehensive assessment of the

diverse environmental, social and governance practices.

- (4). Composite indicator creation. The overall composite indicator, known as the environmental, social and governance index, was derived using principal component analysis. With this method, the various subpillars and pillars were synthesized into a cohesive index, providing a holistic representation of corporate environmental, social and governance responsibility.
- (5). Robustness checks. Additional robustness checks, including the use of correlation matrices, were conducted to validate the integrity of the constructed environmental, social and governance index, ensuring its reliability and accuracy in capturing the multifaceted dimensions of corporate environmental, social and governance practices.

The variables used in the study are listed in table A1.

Table A1 List of the variables used

Subpillar	Variable	Variable label
Environnement	c6	Over the last fiscal year, did this establishment experience power outages?
	n2f	Total annual costs of fuel in the last fiscal year
	n2b	Total annual costs of electricity in the last fiscal year
	BMGa1	In the last fiscal year, did the strategic objectives mention environmental or climate change issues?
	BMGa2	In the last fiscal year, was there a manager responsible for environmental or climate issues?
	BMGa4	Do customers require certification or adherence to environmental standards?
	BMGb1	Over the last three years, did the establishment experience monetary losses owing to extreme weather events?
	BMGb2	Over the last three years, did the establishment experience monetary losses from pollution?
	BMGc1	Over the last three years, did the establishment monitor its energy consumption?
	BMGc11	Over the last three years, did the establishment monitor carbon dioxide emissions along its supply chain?
	BMGc16	Over the last three years, did the establishment have energy consumption targets in place?
	BMGc18	Over the last three years, did the establishment have targets for carbon dioxide emissions?
	BMGc23a	Over the last three years, did the establishment adopt heating and cooling improvements?
	BMGc23b	Over the last three years, did the establishment adopt more climate-friendly energy generation on site?
	BMGc23c	Over the last three years, did the establishment upgrade its machinery?
	BMGc23d	Over the last three years, did the establishment engage in energy management?
	BMGc23e	Over the last three years, did the establishment engage in waste minimization, recycling and waste management?
	BMGc23f	Over the last three years, did the establishment adopt air pollution control measures?
	BMGc23g	Over the last three years, did the establishment engage in water management?
	BMGc23h	Over the last three years, did the establishment upgrade vehicles, vessels or aircraft in its fleet?
	BMGc23i	Over the last three years, did the establishment improve its lighting systems?
	BMGc23j	Over the last three years, did the establishment adopt other pollution control measures?
	BMGe4	How many tons of coal were consumed by the establishment in the last fiscal year?
	BMGe5	In the last fiscal year, did the establishment use energy from its own renewable sources?
	BMGe6	How many kilograms of solid waste were generated by the establishment in the last fiscal year?
	BMGd6	In the last fiscal year, was the establishment subject to an energy tax or levy?
	BMGd7	In the last fiscal year, was the establishment subject to an energy performance standard in its operations?
	BMGe1	How much electricity, in kilowatt-hours, was consumed by the establishment in the last fiscal year?
	BMGe2	Were fuels made from petroleum consumed by the establishment in the last fiscal year?
	BMGc7	Over the last three years, did the establishment emit carbon dioxide?
BMGc25	Over the last three years, did the establishment adopt any measures to enhance energy efficiency?	
BMGc27	What is the main reason why no measures were adopted?	

Governance	b1	What is the legal status of the firm?
	b2a	What percentage of the establishment is owned by private domestic individuals, companies or organizations?
	b2b	What percentage of the establishment is owned by private foreign individuals, companies or organizations?
	b2c	What percentage of the establishment is owned by the Government or State?
	b4	Are there any women among the owners of the firm?
	b5	In what year did the establishment begin operations?
	b6b	In what year was the establishment formally registered?
	b7a	Is the top manager a woman?
	b8	Does the establishment have an internationally recognized quality certification?
	b3	What percentage of the firm does the largest owner or group of owners own?
	d1a1a	Establishment's main product or service last fiscal year
	d3a	What percentage of the firm's sales are national sales?
	d3b	What percentage of the firm's sales are indirect exports?
	d3c	What percentage of the firm's sales are direct exports?
	d2	In the last fiscal year, what was the amount of total annual sales for the establishment?
	e11	Does the establishment compete against unregistered or informal firms?
	e6	Does the establishment use technology licensed from a foreign-owned company?
	h1	Have new products or services been introduced over the last three years?
	h5	During the last three years, did the establishment introduced new or significantly improved processes?
	d1a3	What percentage of total annual sales is attributed to the main product or service?
	BMk3hd	What percentage of working capital is financed in other ways, such as through moneylenders, friends or relatives?
	k3a	What percentage of working capital is financed from internal funds or retained earnings?
	k3bc	What percentage of working capital is borrowed from banks?
	k3e	What percentage of working capital is borrowed from non-bank financial institutions?
	k3f	What percentage of working capital is purchased on credit or advances from suppliers or customers?
	l30a	How much of an obstacle is posed by labour regulations?
	a7	Is the establishment a part of a multi-establishment firm?
	h30	How much of an obstacle is posed by the courts?
	j30a	How much of an obstacle is posed by tax rates?
	j30c	How much of an obstacle is posed by business licensing and permits?
	j30e	How much of an obstacle is posed by political instability?
	j30f	How much of an obstacle is posed by corruption?
	l1	How many permanent, full-time employees did the firm have at the end of the last fiscal year?
	j30b	How much of an obstacle is posed by tax administrations?
	BMb1	What percentage of the firm is owned by the same family?
	BMb3	Does the firm have a formalized, written business strategy?
	BMb4	Does the firm have a board of directors or a supervisory board?
	BMb5	Has the owner, chief executive officer, top manager or a board member ever been elected or appointed to a political position?
	BMh1	During the last three years, how much has the establishment spent on the acquisition of external knowledge?
	BMh2	During the last three years, how much has the establishment spent on internal research and development?
	BMh3	During the last three years, how much has the establishment spent on research and development contracted outside the establishment?
	BMk3a	What percentage of working capital is derived from government grants?
BMk3b	What percentage of working capital is derived from issued bonds?	
BMj4b	How much of an obstacle is posed by health and hygiene regulations?	
BMj4c	How much of an obstacle is posed by environmental regulations?	
BMj4a	How much of an obstacle is posed by occupational safety regulations?	

Social	I2	How many permanent, full-time employees were there at the end of the fiscal year three years ago?
	I6	How many temporary, full-time employees were there at the end of the last fiscal year?
	I10	Were there any formal training programmes for permanent, full-time employees in the last fiscal year?
	I30b	How much of an obstacle is posed by an inadequately educated workforce?
	n2a	What was the total labour cost, including wages, salaries and bonuses, in the last fiscal year?

A3. Econometrics

The relationships between various factors and environmental, social and governance criteria at the global level are explored in table A2.

Table A2 Global regressions of environmental, social and governance scores: analysis of all firms from all countries included in the World Bank Enterprise Survey

	(1)		(2)	
Wholesale and retail trade	-0.0522*	(0.0299)	0.0360	(0.0223)
Manufacture of metal and non-alloy mineral products	0.119***	(0.0347)	-0.0186	(0.0236)
Manufacture of other manufactured products	0.163***	(0.0297)	-0.0146	(0.0207)
Food industry	0.222***	(0.0379)	-0.0164	(0.0281)
Other services	0.102***	(0.0287)	0.0530***	(0.0204)
Growing firms (5–10 years)	0.108***	(0.0310)	0.141***	(0.0213)
Established firms (10–20 years)	0.0305	(0.0187)	0.0477***	(0.0127)
Small firms (10–50 employees)	0.135***	(0.0176)	0.0177	(0.0124)
Medium firms (50–250 employees)	0.445***	(0.0257)	0.0767***	(0.0188)
Large firms (over 250 employees)	0.928***	(0.0683)	0.358***	(0.0525)
Family-owned enterprises	0.155***	(0.0216)	0.0749***	(0.0160)
Capital share owned by private domestic individuals, companies or organizations	0.000157	(0.000648)	-0.000405	(0.000509)
Capital share owned by private foreign individuals, companies or organizations	0.000174	(0.000815)	-0.00211***	(0.000617)
Capital share owned by the Government or State	0.000152	(0.00170)	-0.00139	(0.00135)
Firm has a board of directors or a supervisory board	0.299***	(0.0215)	0.0792***	(0.0147)
Top manager is a woman	-0.0920***	(0.0249)	-0.0389**	(0.0177)
Percentage of the company held by the largest owner or group of owners	-0.000539	(0.000449)	-0.000207	(0.000327)
Lower-middle-income countries	0.247***	(0.0332)	0.159***	(0.0256)
Upper-middle-income countries	0.0397*	(0.0233)	0.0617***	(0.0172)
Europe and Central Asia	-0.406***	(0.0952)	-0.488***	(0.0875)
Middle East and North Africa	-0.860***	(0.0987)	-0.619***	(0.0907)
Establishment is part of a multi-establishment firm	0.153***	(0.0360)	0.0762***	(0.0268)
Year = 2019	-0.0565	(0.0438)	-0.0599*	(0.0323)
Year = 2020	-0.272***	(0.0509)	-0.0839**	(0.0362)
Establishment monitors its energy consumption			0.0337**	(0.0142)
Unknown whether establishment monitors its energy consumption			-0.0988	(0.195)
Strategic objectives mention environmental or climate change issues			0.360***	(0.0265)
Has a manager responsible for environmental or climate issues			0.479***	(0.0361)
Customers require certifications or adherence to environmental standards			0.435***	(0.0298)
Adopted heating and cooling improvements			0.0395**	(0.0159)
Adopted more climate-friendly energy generation on site			0.204***	(0.0286)

Upgraded machinery			0.0551***	(0.0143)
Engaged in energy management			0.115***	(0.0186)
Engaged in waste minimization, recycling and waste management			0.114***	(0.0141)
Adopted air pollution control measures			0.335***	(0.0274)
Upgraded vehicles, vessels or aircraft in its fleet			0.126***	(0.0148)
Improved lighting systems			0.0616***	(0.0167)
Adopted other pollution control measures			0.306***	(0.0308)
Adopted measures to enhance energy efficiency			0.0284*	(0.0157)
Unknown whether adopted measures to enhance energy efficiency			-0.0504	(0.0581)
Engaged in water management			0.215***	(0.0212)
Held an internationally recognized quality certification			0.0365**	(0.0171)
In the process of obtaining an internationally recognized quality certification			0.116	(0.0985)
Used technology licensed from a foreign-owned company			0.138***	(0.0268)
Had formalized, written business strategies			0.0137	(0.0144)
Had energy consumption targets			0.0852***	(0.0179)
Unknown whether had energy consumption targets			0.245	(0.296)
Health and hygiene regulations posed no obstacle			-0.360***	(0.0456)
Health and hygiene regulations posed a minor obstacle			-0.330***	(0.0444)
Health and hygiene regulations posed a moderate obstacle			-0.362***	(0.0410)
Environmental regulations posed no obstacle			-0.387***	(0.0313)
Environmental regulations posed a minor obstacle			-0.367***	(0.0340)
Environmental regulations posed a moderate obstacle			-0.382***	(0.0299)
Occupational safety regulations posed no obstacle			-0.474***	(0.0393)
Occupational safety regulations posed a minor obstacle			-0.492***	(0.0372)
Occupational safety regulations posed a moderate obstacle			-0.516***	(0.0342)
Shareholding company with non-traded shares or shares traded privately	0.0623**	(0.0315)	0.0388	(0.0239)
Sole proprietorship	0.0445	(0.0341)	0.0168	(0.0251)
Limited partnership	0.141***	(0.0401)	0.0555*	(0.0300)
Constant	-0.0410	(0.127)	0.887***	(0.119)
Observations	10 727		10 521	
R-squared	0.171		0.589	

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Source: Author's compilation.

Firms in the food industry, metal manufacturing, other manufacturing and specific service sectors exhibit higher environmental, social and governance scores, whereas wholesale and retail trade firms exhibit lower scores. In addition, the size of the company is positively associated with the score, indicating that larger firms tend to have better environmental, social and governance performance. This may be linked to the fact that small firms experience higher

barriers to adopting environmental, social and governance practices. Surprisingly, having a female top manager is not linked to higher environmental, social and governance performance.

The coefficients for Europe and Central Asia and for the Middle East and North Africa reveal significantly negative relationships with environmental, social and governance scores, indicating that firms located in these regions

tend to exhibit lower performance. The adoption of various environmental measures, such as air pollution control, waste management and energy efficiency strategies, showcases positive relationships with environmental, social and governance scores, emphasizing the importance of environmental initiatives in influencing performance within firms globally. Moreover, obstacles at all levels in relation to health and hygiene regulations, environmental regulations and occupational safety regulations consistently exhibit negative

associations with environmental, social and governance scores across the board.

As expected, the presence of certain governance structures, such as a board of directors or a supervisory board, consistently shows a positive association with the environmental, social and governance score. Having a structured governance system in place thus contributes positively to firm performance. These relationships also hold true when calculating regressions by income class (see Table A3).

Table A3 Ordinary least squares regressions by income class, with environmental, social and governance score as the dependent variable

	High-income countries		Upper-middle-income countries		Lower-middle-income countries	
	z-score		z-score		z-score	
Wholesale and retail trade	-0.175***	(0.0489)	-0.201***	(0.0600)	0.130**	(0.0627)
Manufacture of metal products and non-ferrous mineral products	0.117*	(0.0616)	-0.118	(0.0775)	0.163***	(0.0522)
Manufacture of other manufactured products	0.0212	(0.0487)	0.112*	(0.0607)	0.234***	(0.0604)
Food industry	0.143**	(0.0643)	0.0492	(0.0761)	0.286***	(0.0645)
Other services	-0.0134	(0.0502)	-0.00552	(0.0590)	0.215***	(0.0489)
Growing (5–10 years)					0.184***	(0.0515)
Established (10–20 years)	0.0188	(0.0624)	-0.0669	(0.0505)	0.0161	(0.0342)
Mature (over 20 years)	-0.0492	(0.0599)	-0.0769	(0.0525)		
Small (10–50 employees)	0.132***	(0.0296)	0.201***	(0.0344)	0.109***	(0.0278)
Medium (50–250 employees)	0.510***	(0.0427)	0.502***	(0.0470)	0.379***	(0.0434)
Large (over 250 employees)	0.956***	(0.0978)	0.843***	(0.0844)	1.017***	(0.161)
Family-owned business	0.0538*	(0.0321)	0.216***	(0.0339)	0.191***	(0.0466)
Capital share owned by private domestic individuals, companies or organizations	-0.00475**	(0.00185)	0.000449	(0.00221)	0.000617	(0.000692)
Capital share owned by private foreign individuals, companies or organizations	-0.00458**	(0.00195)	-0.000556	(0.00237)	0.00106	(0.00144)
Capital share owned by the Government or State	0.00167	(0.00432)	-0.00496*	(0.00258)	0.0218***	(0.00516)
Firm had a board of directors or a supervisory board	0.303***	(0.0340)	0.259***	(0.0444)	0.334***	(0.0410)
Percentage of the firm held by the largest owner or group of owners	0.000162	(0.000612)	-0.000117	(0.000747)	-0.00135	(0.00107)
Europe and Central Asia					-0.368***	(0.0997)
Middle East and North Africa	-0.229***	(0.0706)	-0.436***	(0.0498)	-0.785***	(0.125)
Year = 2019	-0.259***	(0.0724)	0.0854	(0.0541)	0.0350	(0.232)
Year = 2020	-0.309***	(0.0916)	-0.121	(0.0841)	-0.209	(0.238)

Establishment was part of a multi-establishment firm	0.151***	(0.0437)				
Shareholding company with non-traded shares or shares traded privately	0.0362	(0.0487)	-0.0556	(0.0611)	0.0615	(0.0617)
Sole proprietorship	-0.0178	(0.0563)	-0.0345	(0.0686)	0.0999	(0.0632)
Limited partnership	0.254***	(0.0660)	-0.152**	(0.0752)	0.0349	(0.0652)
Constant	0.347	(0.214)	-0.329	(0.234)	-0.00502	(0.252)
Observations	4,026		3,013		3,693	
R-squared	0.173		0.142		0.223	

Source: Author's compilation.

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Certain similarities can be seen across the different income categories delineated in Table A4.

Table A4 Ordinary least squares regressions by income class, with environmental, social and governance score as the dependent variable, adding environmental variables

	High-income countries		Upper-middle-income countries		Lower-middle-income countries	
	z-score		z-score		z-score	
Wholesale and retail trade	-0.0246	(0.0335)	-0.0130	(0.0405)	0.139***	(0.0490)
Manufacture of metal products and non-ferrous mineral products	-0.0291	(0.0388)	-0.118**	(0.0501)	0.0466	(0.0392)
Manufacture of other manufactured products	-0.0817***	(0.0313)	-0.0286	(0.0407)	0.0628	(0.0469)
Food industry	-0.0360	(0.0401)	-0.0652	(0.0522)	0.0736	(0.0503)
Other services	0.00713	(0.0350)	0.0155	(0.0402)	0.136***	(0.0364)
Growing (5–10 years)					0.133***	(0.0369)
Mature (over 20 years)	-0.111***	(0.0412)	-0.122***	(0.0354)		
Small (10–50 employees)	-0.0175	(0.0209)	0.0775***	(0.0237)	0.0156	(0.0201)
Medium (50–250 employees)	0.0587**	(0.0296)	0.134***	(0.0317)	0.0600	(0.0376)
Large (over 250 employees)	0.344***	(0.0847)	0.217***	(0.0561)	0.517***	(0.112)
Family-owned business	0.0400*	(0.0210)	0.0603***	(0.0217)	0.0743*	(0.0416)
Capital share owned by private domestic individuals, companies or organizations	-0.000919	(0.00139)	0.000950	(0.00168)	-0.000443	(0.000619)
Capital share owned by private foreign individuals, companies or organizations	-0.00211	(0.00145)	-0.00129	(0.00177)	-0.00219*	(0.00125)
Capital share owned by the Government or State	-0.000806	(0.00479)	-0.00283	(0.00191)	0.0102**	(0.00484)
Firm had a board of directors or a supervisory board	0.0634***	(0.0221)	0.0233	(0.0288)	0.0986***	(0.0285)
Percentage of the firm held by the largest owner or group of owners	-8.80e-05	(0.000417)	0.000669	(0.000475)	2.33e-05	(0.000817)
Establishment was part of a multi-establishment firm	0.0495*	(0.0288)				
Year = 2019	-0.151***	(0.0554)	0.0215	(0.0351)	-0.160	(0.177)
Year = 2020	-0.195***	(0.0668)	0.0687	(0.0504)	-0.0916	(0.185)
Establishment monitored its energy consumption	-0.0213	(0.0216)	0.0704***	(0.0221)	0.0451	(0.0348)
Unknown whether the establishment monitored its energy consumption	-0.478***	(0.0621)	-0.0634	(0.292)		
Strategic objectives mentioned environmental or climate change issues	0.399***	(0.0346)	0.357***	(0.0386)	0.251***	(0.0696)

Had a manager responsible for environmental or climate issues	0.381***	(0.0410)	0.439***	(0.0490)	0.757***	(0.116)
Customers required certifications or adherence to environmental standards	0.445***	(0.0352)	0.416***	(0.0419)	0.525***	(0.0826)
Adopted heating and cooling improvements	0.00417	(0.0236)	0.0401	(0.0255)	0.0832**	(0.0338)
Adopted more climate-friendly energy generation on site	0.149***	(0.0316)	0.243***	(0.0382)	0.433***	(0.133)
Upgraded machinery	0.0534**	(0.0233)	0.0809***	(0.0257)	0.0196	(0.0268)
Engaged in energy management	0.183***	(0.0296)	0.117***	(0.0304)	0.0367	(0.0350)
Engaged in waste minimization, recycling and waste management	0.0922***	(0.0212)	0.107***	(0.0275)	0.109***	(0.0306)
Adopted air pollution control measures	0.279***	(0.0377)	0.318***	(0.0389)	0.410***	(0.0685)
Upgraded vehicles, vessels or aircraft in its fleet	0.133***	(0.0212)	0.0767***	(0.0269)	0.160***	(0.0295)
Improved its lighting systems	0.0791***	(0.0237)	-0.0126	(0.0236)	0.119***	(0.0389)
Adopted other pollution control measures	0.323***	(0.0466)	0.229***	(0.0399)	0.246***	(0.0694)
Adopted measures to enhance energy efficiency	0.0395	(0.0243)	0.0473*	(0.0270)	0.0438	(0.0313)
Unknown whether adopted measures to enhance energy efficiency	-0.00905	(0.187)	0.0753	(0.0947)	-0.215**	(0.0925)
Engaged in water management	0.192***	(0.0353)	0.156***	(0.0315)	0.311***	(0.0469)
Establishment had an internationally recognized quality certification	0.0444**	(0.0223)	0.0474	(0.0288)	0.0406	(0.0409)
Establishment in the process of obtaining an internationally recognized quality certification	0.273*	(0.159)	0.00448	(0.135)	-0.111	(0.157)
Used technology licensed from a foreign-owned company	0.0470	(0.0296)	0.118***	(0.0356)	0.302***	(0.0807)
Firm had a formalized written business strategy	0.107***	(0.0212)	-0.0448*	(0.0233)	-0.0190	(0.0304)
Establishment had energy consumption targets in place	0.0867***	(0.0267)	0.137***	(0.0298)	0.0658*	(0.0390)
Unknown whether establishment had energy consumption targets in place	0.349	(0.366)	0.0119	(0.287)	0.359	(0.429)
Health and hygiene regulations posed no obstacle	-0.303***	(0.0520)	-0.312***	(0.0572)	-0.550***	(0.126)
Health and hygiene regulations posed a minor obstacle	-0.281***	(0.0544)	-0.253***	(0.0583)	-0.515***	(0.120)
Health and hygiene regulations posed a moderate obstacle	-0.304***	(0.0482)	-0.290***	(0.0597)	-0.521***	(0.109)
Environmental regulations posed no obstacle	-0.405***	(0.0460)	-0.549***	(0.0499)	-0.219***	(0.0703)
Environmental regulations posed a minor obstacle	-0.401***	(0.0472)	-0.528***	(0.0522)	-0.162*	(0.0841)
Environmental regulations posed a moderate obstacle	-0.374***	(0.0435)	-0.436***	(0.0562)	-0.293***	(0.0626)
Occupational safety regulations posed no obstacle	-0.495***	(0.0608)	-0.639***	(0.0535)	-0.216***	(0.0814)
Occupational safety regulations posed a minor obstacle	-0.519***	(0.0621)	-0.602***	(0.0545)	-0.272***	(0.0608)
Occupational safety regulations posed a moderate obstacle	-0.503***	(0.0550)	-0.585***	(0.0572)	-0.382***	(0.0560)
Europe and Central Asia					-0.512***	(0.105)
Middle East and North Africa	-0.177***	(0.0438)	0.0252	(0.0333)	-0.620***	(0.134)
Shareholding company with non-traded shares or shares traded privately	0.0530*	(0.0311)	0.0168	(0.0375)	-0.0317	(0.0508)

Sole proprietorship	0.0654*	(0.0364)	-0.0183	(0.0422)	-0.00935	(0.0520)
Limited partnership	-0.0258	(0.0409)	0.0851*	(0.0470)	0.0862	(0.0586)
Constant	0.703***	(0.165)	0.604***	(0.181)	0.813***	(0.210)
Observations	3,947		2,977		3,601	
R-squared	0.641		0.663		0.557	

Source: Author's compilation.

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

A4. Environmental, social and governance regulations in a selection of developing countries

Bangladesh

In its sustainable finance policy, the Bangladesh Bank defines sustainable finance, differentiates between sustainable finance and green taxonomy, sets targets, ratings and rewards, and establishes an inclusion and exclusion list for products qualifying as sustainable.¹⁹

China

China is making significant strides in standardizing environmental, social and governance reporting, with recent measures including the introduction of its first environmental, social and governance disclosure standard on 16 June 2022, in alignment with global regulatory trends. These initiatives are part of a broader push towards promoting transparency and accountability in corporate practices, supporting the Government's goals for a green economy and social equality. Recent regulatory developments have seen the release of a draft amendment to the Company Law and new rules on environmental disclosures, fostering a conducive framework for environmental, social and governance assessment and aiding investors in the domestic market.^{20, 21}

China also has a policy targeting eight major industries, requiring carbon emissions reporting and inspection to ultimately establish a carbon emissions quota allocation system.

In the national guidelines on environmental information disclosure for financial institutions, topics to be disclosed are outlined, including the environmental impacts of investment decisions and environmental risks and opportunities faced by institutions.

Kenya

The environmental, social and governance landscape in Kenya is in its nascent stages, with the publication of an environmental, social and governance guidance manual by the Nairobi Securities Exchange in November 2021 being a major highlight.²²

The Nairobi Securities Exchange has launched its environmental, social and governance disclosures guidance manual to improve and standardize the environmental, social and governance information reported by listed companies in Kenya.

19 Bangladesh Bank, Guidelines on Environmental and Social Risk Management (ESRM) for Banks and Financial Institutions in Bangladesh (Dhaka, 2017).

20 Shen Hongtao and others, "ESG in China: A review of practice and research, and future research avenues", China Journal of Accounting Research, vol. 16, No. 4 (2023).

21 Helen Chan, "China moves to standardize fragmented ESG reporting landscape", Thomson Reuters, 6 October 2022.

22 Nairobi Securities Exchange, Nairobi Securities Exchange ESG Disclosures Guidance Manual (Nairobi, 2021).

Nigeria

The main substantive regulations on environmental, social and governance issues are contained in the Constitution of Nigeria of 1999, as amended. In addition, there are guidelines governing how companies must act from an environmental, social and governance perspective, including regulations on environmental and social impact assessments, laws on local pay and the sustainable banking principles set out by the Central Bank of Nigeria.²³

A regulatory overview of environmental, social and governance issues in Nigeria includes trends in environmental, social and governance reporting and disclosure requirements and the impact of sustainable or environmental, social and governance investment in Africa, with a particular focus on Nigeria.

Philippines

In its sustainability reporting guidelines, the Securities and Exchange Commission of the Philippines provides a comparison of various reporting frameworks to assist entities in selecting the most appropriate framework for disclosing material issues.²⁴ The Commission also intends to introduce a specific reporting template in its guidelines for listed companies and was to make disclosure requirements mandatory by 2023.

South Africa

Regulation has been a primary driver of environmental, social and governance

integration in South Africa, with examples including regulation No. 28 to the Pension Funds Act, which provides for deploying capital into markets with adequate risk-adjusted returns suitable for the fund's specific member profile, liquidity needs and liabilities.²⁵

The National Treasury of South Africa published a detailed draft taxonomy on 9 October 2021, providing technical and legal criteria for assets, activities and projects to be classified as being aligned with environmental, social and governance criteria.²⁶

There are multiple recent and forthcoming regulatory developments that have an impact on environmental, social and governance in South Africa, as highlighted in the ESG bill tracker 2022 issued by Herbert Smith Freehills, which provides brief summaries of major regulatory environmental, social and governance highlights from 2021 and those to look out for in 2022.²⁷

In South Africa, the corporate governance code known as the King IV Code set a precedent by explicitly assigning the responsibility of environmental, social and governance considerations to the board of directors. By addressing such specific issues as the climate crisis, an expanding collection of guidance documents transcends merely detailing good reporting practices. Notably, the King IV guidance paper on the responsibilities of governing bodies in responding to climate change provides a series of actionable

23 Central Bank of Nigeria, "Circular on the implementation of sustainable banking principles by banks, discount houses and development finance institutions in Nigeria", July 2012, available at www.cbn.gov.ng/out/2012/ccd/circular-nsbp.pdf.

24 Philippines Securities and Exchange Commission, "Sustainability reporting guidelines for publicly-listed companies" (Manila, 2019).

25 SA Financial Regulation Journal, "At a glance: ESG and investing in South Africa", 25 May 2021.

26 South Africa and International Finance Corporation, South African Green Finance Taxonomy, first edition (2022).

27 Herbert Smith Freehills, "ESG tracker (SADC edition)", February 2022.

principles for boards to address climate change effectively.^{28,29}

In its guidance on climate disclosure and on sustainability disclosure, the Johannesburg Stock Exchange adopts a double materiality approach, recommending the disclosure of all environmental, social and governance issues affecting operational and financial results, as well as the impacts on the economy, society and the environment, in a separate sustainability report.³⁰

Viet Nam

Viet Nam has environmental, social and governance policies in place covering environmental protection, social welfare and corporate governance. Important initiatives include a law on environmental protection and an electricity development plan that involves the phasing out of coal. As established in the Corporate Governance Code of Best Practices, boards are responsible for monitoring companies' environmental, social and governance policies and practices, ensuring disclosure and incorporating environmental and social aspects into contractors' activities. The State Securities Commission provides guidance on performance indicators for disclosing non-financial and sustainability information.

However, there is a need for clearer guidelines and policies, as many businesses face challenges owing to the absence of transparent regulations.³¹

National corporate social responsibility strategy of Tunisia

The objectives of the 2018 national corporate social responsibility strategy in Tunisia can be summarized as follows: (a) improved country attractiveness and easier access to foreign capital; (b) contribution to regional development and the prevention of corruption; (c) contribution to employment and working conditions; and (e) waste management and water conservation.

The strategy includes seven strategic axes for its implementation:

- Establishing institutional governance of corporate social responsibility
- Anchoring corporate social responsibility within companies
- Promoting training and research development in corporate social responsibility
- Promoting corporate social responsibility in value chains
- Improving international cooperation on corporate social responsibility
- Encouraging communication and awareness on corporate social responsibility
- Setting up a monitoring and evaluation mechanism for the corporate social responsibility strategy.

The following actions are proposed in the strategy as ways of anchoring corporate social responsibility within firms:

- Raising awareness among companies about the importance of corporate social responsibility and its economic, social and environmental benefits
- Encouraging companies to adopt corporate social responsibility practices by providing them with tools and resources to help them to implement relevant initiatives
- Implementing incentives to encourage companies to adopt corporate social responsibility practices, such as tax benefits or grants
- Strengthening the capacities of companies with regard to corporate social responsibility by providing training and advice
- Encouraging companies to integrate corporate social responsibility into their overall strategy and corporate governance
- Establishing monitoring and evaluation mechanisms to measure the impact of companies' corporate social responsibility initiatives

28 Institute of Directors South Africa, King IV Report on Corporate Governance for South Africa 2016 (Sandown, South Africa, 2016).

29 Institute of Directors South Africa, "Responsibilities of governing bodies in responding to climate change", King IV Guidance Paper, July 2021 (Sandown, South Africa, 2021).

30 Johannesburg Stock Exchange, "Leading the way for a better tomorrow: JSE sustainability disclosure guidance" (Johannesburg, 2022); and Johannesburg Stock Exchange, "Leading the way for a better tomorrow: JSE climate disclosure guidance" (Johannesburg, 2022).

31 PricewaterhouseCoopers and Vietnam Institute of Directors, "From ambition to impact: Vietnam ESG readiness report 2022", 2022.

