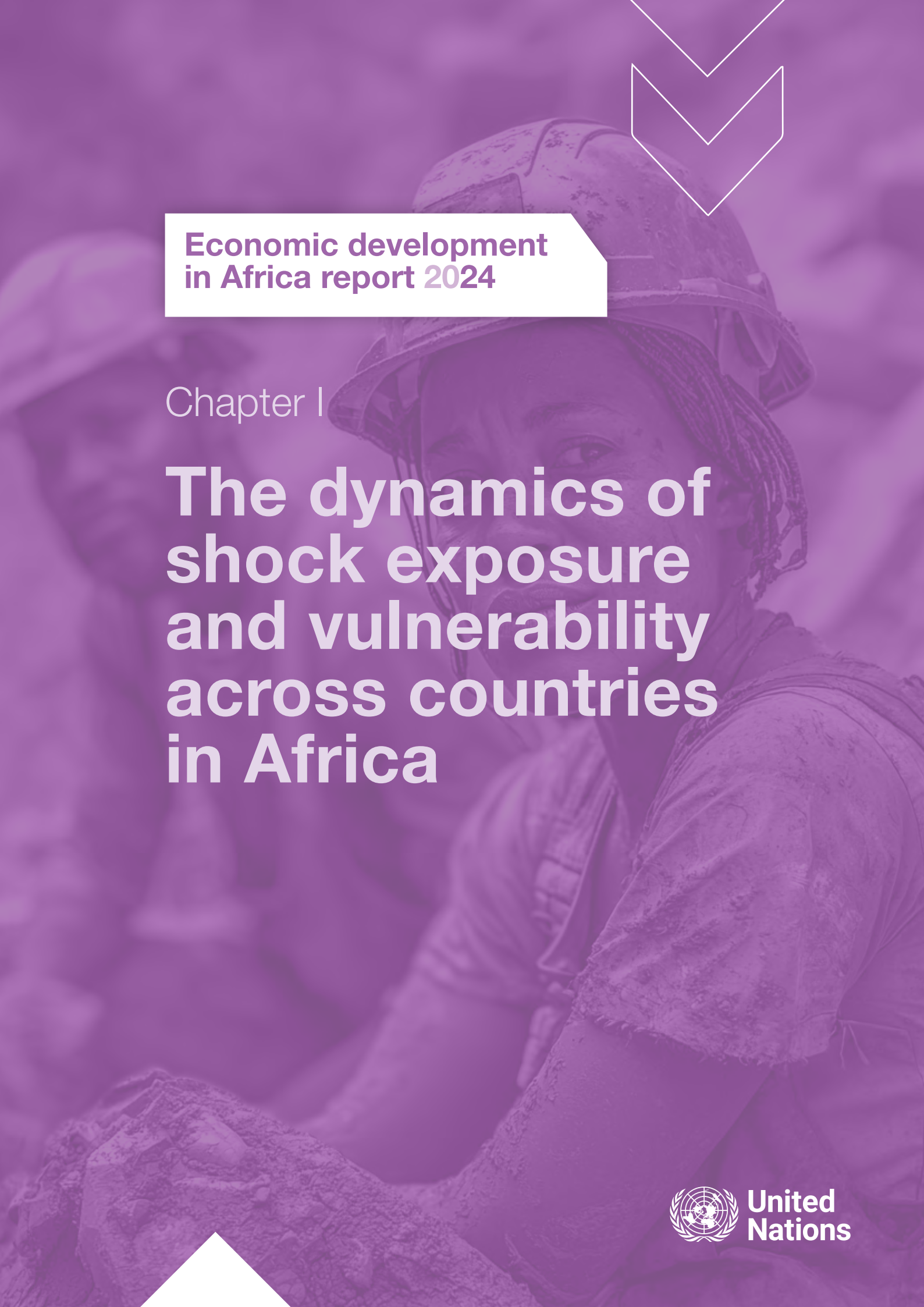

Economic development in Africa report 2024

Chapter I

The dynamics of shock exposure and vulnerability across countries in Africa

United Nations

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Introduction

The issue of "global polycrisis," or "the causal entanglement of crises in multiple global systems in ways that significantly degrade humanity's prospects" (Lawrence et al., 2024), has recently resurfaced and intensified the heated debate over the potential to leverage economic and trade opportunities for transformation in Africa. According to Columbia University historian Adam Tooze, in a polycrisis "the shocks are disparate, but they interact so that the whole is even more overwhelming than the sum of the parts" (Lähde, 2023). A polycrisis is a situation in which multiple crises, such as climate change, biodiversity loss, economic instability and social inequality, interact, creating a complex and often unpredictable scenario of interrelated crises, predicaments and vicious cycles. These crises are interconnected so that the combined impact is greater than the sum of their individual effects. Further, the concept highlights the systemic nature of global challenges and the difficulty in addressing them in isolation.

Today's global polycrisis, which is generated by shocks and crises occurring at different levels (local, national, regional and international) and disrupts various domains and systems (health, financial, economic, political and environmental), is not new. Some of the past global crises include the oil shocks of the late 1970s, which created global energy shortages and contributed to stagflation in many economies. Another example of a past global crisis is the 2008–2009 global financial and economic crisis, which intersected with oil supply constraints and food price volatility and further stressed financial, production, supply and operating systems (Lawrence et al., 2024).

However, the current global polycrisis is unprecedented in some ways. For instance, the health, social and economic effects of the coronavirus disease (COVID-19) pandemic linger still and challenge the ability of many developing countries to make critical investments toward sustainable development amid tightening credit conditions and rising external financing costs (United Nations, 2023a). The tightening of borrowing conditions and strained government liquidity, coupled with the complexity of inflationary dynamics, including hikes in energy and food commodity prices and associated demand and supply-side crises, occur at a time when economies and regions are far more interconnected and synchronized than ever before. This brings the additional risk of spillover or the acceleration of crisis events, especially in the current interlinked architecture of economic, financial and societal systems at the global level, which can facilitate or amplify the phenomenon of stresses (shocks or impacts of crisis events) with systems affecting each other or creating stresses in different systems. For instance, global energy price shocks stress global transportation and food systems, creating inflationary pressures and high interest rates. The resulting stresses in the real economy and global banking system could increase capital costs, impacting productivity and returns. While policymakers and regulators attempt to contain or reverse pressures from volatility in food and energy prices, lower wages and income, and declining savings and investment, the slowdown of economic activities due to this entanglement of stresses would have exposed already vulnerable businesses and people. This can create social tensions and produce systemic risk.

The centrality of the interconnectivity of today's global systems in fuelling, accelerating or amplifying crisis events is also evident through the complexity of geopolitical stresses and their accompanying distress and spillover into other systems. The war in Ukraine shows how geopolitical stresses can generate stresses in different systems, for example, global energy, food and finance systems.

A polycrisis is a situation in which multiple crises, interact, creating a complex and often **unpredictable scenario of interrelated crises**

Optimization of regional market strengthens market resilience to specific shocks and vulnerabilities

The United Nations Global Crisis Response Group on Food, Energy and Finance reported, during the early months of the war in Ukraine, the devastating impact of conflict on already tight global food, energy and financial markets (UNCTAD, 2022a). When two countries, namely the Russian Federation and Ukraine, that provide about 30 per cent of the world's wheat and barley, 25 per cent of its maize and over 50 per cent of its sunflower oil are in conflict, and one of them is the world's top natural gas exporter and second-largest oil exporter, the impacts on specific commodity prices become significant, with food prices increasing by about 34 per cent, crude oil prices surging by about 60 per cent and gas and fertilizer prices more than doubling (United Nations, 2022a). As these food and energy pressures interacted with ongoing stresses in global supply chains and financial markets, many economies were affected by inflationary pressures, heightened market volatility and tightening monetary conditions.

This year's *Economic Development in Africa Report: Unlocking Africa's Trade Potential: Boosting Regional Markets and Reducing Risks* examines optimal strategies for countries in Africa and the private sector to mitigate trade risks associated with the uncertainties created by this global polycrisis.

The report focuses on the optimization of regional market benefits to strengthen market resilience to specific shocks and vulnerabilities and explores the diverse trade risks in Africa stemming from a host of economic, political, environmental, energy, technological and logistical challenges. The report underscores the importance of robust risk management, regional cooperation and strategic investments in infrastructure and technology. It also highlights best practices across the continent, showing how countries and businesses have effectively addressed these challenges to unlock new opportunities. By providing a detailed analysis of the trade environment, potential risks and de-risking strategies, this report aims to equip stakeholders with the insights needed for informed decision-making. Ultimately, it seeks to foster sustainable economic growth and shared prosperity in Africa by leveraging the continent's unique strengths to maximize regional market benefits. The African Continental Free Trade Area, launched in 2021, marks a crucial step towards economic integration in Africa. With its youthful population, abundant resources and growing political stability, Africa offers vast trade opportunities. However, realizing these opportunities requires navigating a complex landscape of risks and challenges.

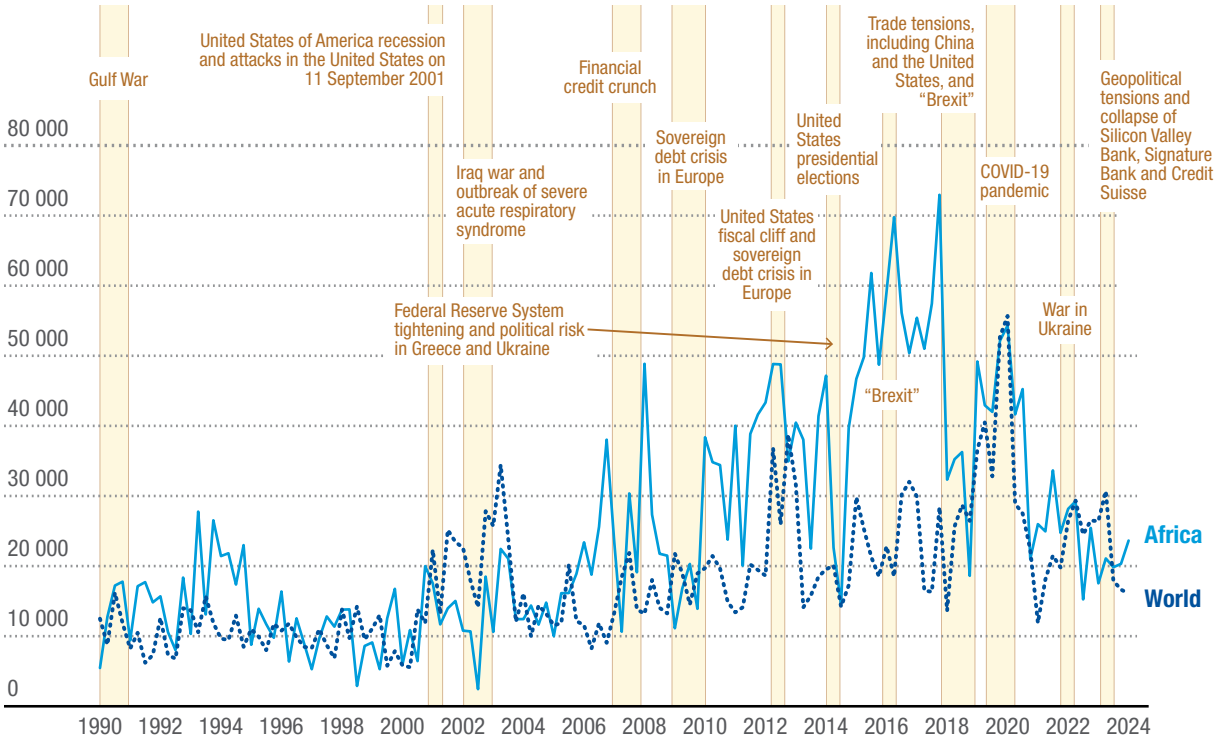
Navigating through uncertainties and risk perceptions in Africa

When navigating these global crises and uncertainties, Governments, companies and individuals are required to internalize them by deploying tools to track and assess their potential impact, adjust to the new ways in which they disrupt systems, adopt more flexibility and mitigate their adverse effects by having contingency plans in place and being able to act faster and reduce the risk of mistakes (Bloom et al., 2022). Bloom (2023) maintains that uncertainties affect decision-making and transactions, for example people's decisions to purchase real estate; companies' strategic choices about building new factories, investing in capital equipment and hiring workers; or Governments' policy choices concerning public expenditure and revenues (for instance, tax policies). These uncertainties are perceived to be higher in frequency and intensity in emerging markets and low-income countries than in advanced countries (Ahir et al., 2022).

Using the world uncertainty index[1] as a proxy to capture the levels of global uncertainty related to economic and political events indicates that the levels of uncertainty have increased significantly since 2012 and spiked sharply as a response to or during global episodes of shocks or crises (figure I.1). The higher levels of uncertainty for the average of countries in Africa, compared to the global average, can be explained by the compounded effects of domestic political shocks such as coups d'état and conflicts, or aggravated by their vulnerability to natural disasters and their low capacity to manage external shocks (Ahir et al., 2022). Figure I.1 shows the world uncertainty index from 1990 to 2023. During recent episodes of global crises, such as the 2014–2016 oil price shock and the 2019–2020 COVID-19 pandemic, Africa was subject to higher levels of uncertain economic and political situations, although the trend followed the global average in terms of spike and dip. The synchronization of the indices for Africa and the world average during those periods can be partly explained by the fact that countries in Africa were more connected to the rest of the world.

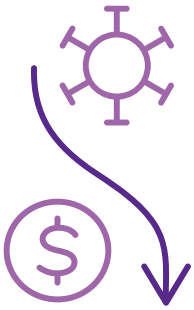
During recent episodes of global crises Africa was subject to higher levels of uncertain economic and political situations

Figure I. 1
The world uncertainty index: Africa and global averages, 1990–2024
(Index)



Source: UNCTAD, based on data from the world uncertainty index, 2024.
Note: Time series of world uncertainty index averages for Africa and the rest of the world from the first quarter of 1990 to the first quarter of 2024. Actual data from the first quarter of 1990 to the first quarter of 2024, comparing the average index value for Africa with the global average.

[1] The world uncertainty index was launched by the International Monetary Fund in 2020 to measure and compare quarterly the level of uncertainty across 143 countries. The index is constructed by text-mining the country reports from the Economist Intelligence Unit and counting the frequency of the word "uncertain" (or its variant) in its quarterly country reports. The index is computed by normalizing the total count of the word "uncertain" (or its variant) according to the total number of words in each report and then rescaled by multiplying by 1,000. A higher number means higher uncertainty. For example, an index of 200 corresponds to the word "uncertainty", accounting for 0.02 per cent of all words. For more information on the world uncertainty index, see https://worlduncertaintyindex.com/.



The lingering post-COVID-19 global economic downturn and financial volatility **continue to strain government resources**

It may not be unreasonable to conclude that countries in Africa are the most exposed to adverse shocks, including those stemming from the global polycrisis. For Africa, the current polycrisis comes at a time when the process of economic transformation has yet to be complete in most countries. The lingering post-COVID-19 global economic downturn and financial volatility continue to strain government resources. Although Africa is traditionally perceived as a risky destination for trade and foreign direct investment, eroding incentives for businesses to invest in strategic economic sectors, especially as domestic capabilities to cope with shocks in the face of adversity remain weak, the African journey has not always been hazardous. On the contrary, despite gloomy projections, many economies in Africa remained resilient or unaffected by some of the effects of the polycrisis, for example, the credit crunch of the 2008–2009 financial crisis and human losses caused by the pandemic. See the next sections for the exposure and vulnerability of countries in Africa to shocks emanating from the global polycrisis.

There is a growing understanding in Africa that the confluence of political, social, economic and environmental vulnerabilities can overwhelm the ability of companies, including domestic and foreign trading enterprises, investment firms and other financial agents, to conduct profitable trade and investment activities on the continent. It is not uncommon to see countries in Africa falling into one of the four traps identified by Collier (2007): the conflict trap, the natural resources trap, the trap of being landlocked with bad neighbours and the trap of poor governance. There are still many countries in Africa (28) that are dependent on the export of oil, gas and mineral products, representing more than 60 per cent of their total merchandise exports, which exposes them to sector-specific shocks with significant revenue, investment, economic and social impacts (UNCTAD, 2023a). The 2022 report of the Ibrahim Index of African Governance (2023) found that Africa was less safe, secure and democratic in 2021 than in 2012, reflecting slower progress in governance indicators, such as security, the rule of law, rights and inclusion. Between 2000 and 2022, Africa recorded 123 events of forceful seizure of executive authority or substantial change in the executive leadership and policies of the prior regime.[2] These natural resource dependence and governance features can create a slow-growth, low-trade, poor-governance equilibrium, contributing to a country's vulnerabilities to shocks and limiting its capacities to mitigate the risks of trade disruption, market dependence and limited productivity.

In many instances, these vulnerable environments or the anticipation of trade and business disruptions can result in firms' and investors' higher risk perceptions, leading to reduced trade flows and overall business engagement in affected or so-called risk countries. Morrow et al. (1998) note that the anticipation of political risks prevents trade from growing more than the realization of conflict leads to disruption. The threats of trade disruption or higher trade barriers that would result from vulnerable environments or macroeconomic and political uncertainties are strong incentives for firms to have adequate resilience programmes in place and develop the necessary skills and capability to assess and mitigate risks posed by the governance systems and institutions of countries in which they operate. These risks include confiscating assets by host Governments or trading within a legal system with limited arbitration. Asongu et al. (2021) point out that uncertainty about the policies of a specific country or market can result in disincentives for investors to engage in investments that would facilitate economic activity and international trade. Other consequences of such uncertainty

[2] These include 13 "successful coups d'état", 40 "failed coups d'état", 50 "plotted coups and alleged coup plots" and 11 "cases of resignation of the executive leadership due to poor performance and/or loss of authority" (Centre for Systemic Peace, 2022).

have been documented to include capital loss, less domestic investment, capital flight and brain drain, which are all critical determinants of productivity and international trade (Asongu et al., 2021). The high-risk perceptions of Africa can also lead to high borrowing costs, thus limiting the ability of countries in Africa to secure financing for growth and economic transformation. On average, African sovereigns and corporates borrow at four to eight times higher rates than those in advanced economies (UNCTAD, 2024a).

Macroeconomic stability and political accountability uncertainties can also contribute to high-risk perceptions by both domestic and foreign investors and traders. This is particularly so in natural-resource-rich countries with weak governance lacking adequate checks and balances, which limits the capacity of Governments in such countries to manage the economic, political and social impacts of their wealth, often called the natural resource curse or paradox of plenty (Goldwyn and Clabough, 2020). Risk perceptions are relatively high in many resource-rich economies in Africa, despite efforts by Governments to enact and implement legislation for greater transparency in granting exploration rights and financial flows monitoring, companies' commitment to higher standards for investment and conduct (managing risks and opportunities related to environmental, social and governance criteria) and initiatives by financing institutions and development partners to leverage their assistance for policy reform and capacity-building efforts (Goldwyn and Clabough, 2020). See chapter II for the macroeconomic implications of global shocks in commodity-dependent countries in Africa.

While global companies are increasingly engaging in resilience initiatives to mitigate external and internal threats to their businesses, within certain economies, including in Africa, firms' resilience programmes are limited by low capability and short-term horizon planning, that is, well-positioned to mitigate ongoing risks and capture opportunities but less prepared to withstand the next crisis event. The main external and internal threats that companies worldwide can face when moving into new markets and entering new trade and business relationships are many. These include macroeconomic instability, political and security risks, supply chain disruption, cost of doing business, technology, innovation, cyberthreats and loss of intellectual property. Therefore, it is important to build companies' ability to anticipate change and quickly adapt their trade and business practices when faced with external or internal threats.

When assessing the possibility of internal and external threats and the potential impact on their businesses, the decisions of economic agents to establish or continue a trading enterprise in such environments depend on various factors. Some might have to pay a high insurance premium or purchase trade credit insurance to enter into a new market or remain engaged in a high-risk market. These risk-mitigation measures provide firms with full or partial coverage in the event of a loss due to an endogenous risk event or an exogenous shock. Economic agents could also explore strategies to build or leverage diversified production and trade networks to mitigate threats associated with trade shocks, value and supply chain disruptions, trade policy changes, political uncertainty and financial vulnerability. For instance, diversifying their sources of inputs and components to reduce dependency on a single market, establishing partnerships with local companies in the target country or offering diverse goods and services are various mechanisms businesses can adopt to deal with trade disruptions and uncertainties more effectively. As stated by Nana et al. (2024), "horizontal trade integration contributes to attenuating the negative effect of uncertainty on trade". Notably, higher and more diversified levels of trade intensity to be expected under the African Continental Free Trade Area can help reduce uncertainty when trading across Africa.

Risk-mitigation measures provide firms with full or partial coverage in the event of a loss due to an endogenous risk event or an exogenous shock

See chapter III for the opportunities to leverage value added trade networks under regional trading blocs.

While there are significant benefits associated with supplying and buying goods and services across various borders, such cross-border trade activities and transactions can be offset by the risk of adverse price movements in the market; currency volatility; unpredictable policy change, for example, trade policies at the domestic or regional level; or regulatory uncertainties, such as interoperability between different regulations, systems and processes across borders. To anticipate, assess the potential impact of and manage such risk events, and ensure that they do capture the expected returns and potential gains when engaging in cross-border activities and transactions, traders and investors can resort to various de-risking instruments such as derivatives (futures, forward, options, swaps and credit derivatives markets), which can be used to eliminate or reduce the risk of potential losses arising from price volatility, currency fluctuation or other market vulnerabilities. In Africa, the Pan-African Payment and Settlement System, a centralized payment and settlement system for intra-African trade in goods and services, was established by the African Export–Import Bank in collaboration with the African Continental Free Trade Area Secretariat to facilitate trade in local currencies across various countries in Africa. See chapter IV on risk management measures that firms can deploy to reduce potential risks related to currency exchange and other financial transactions when operating and trading across Africa.

Countries that are in earlier stages of structural transformation are more **vulnerable to being harmed by shocks emanating from the external environment**

Risk analysis in a polycrisis context: Interconnecting exposure and vulnerability to shocks

In many parts of the world, economic transformation and sustainable development are threatened in the face of polycrisis and the resulting uncertain business environments, unstable political conditions, volatile market prices or disrupted supply chains. The consequential economic downturns due to reduced trade and financial flows in such challenging environments and the adverse impact on growth prospects and the well-being of local communities can easily alter any progress made in economic development. In a sense, the process of economic development can be understood as one along which risks to trading and investment decline. Just as economic development is associated with structural transformation in what a country produces, so is economic development associated with a transformation in a country's trade patterns: what a country exports and to whom it exports matters (Bastos and Silva, 2010; Brambilla et al., 2012; Hausmann et al., 2007; Hidalgo et al., 2007).

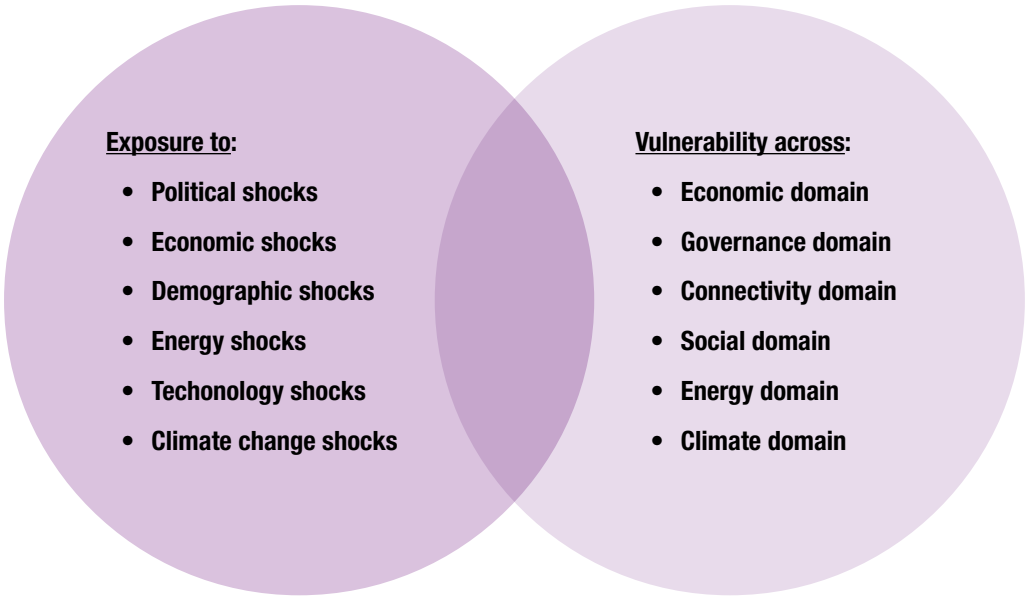
The lack of structural transformation results in an environment that is perceived to be risky from a trade and investment perspective because the advantages of specialization, higher productivity, more complex production and integration into and connectivity with the rest of the world are lacking. Moreover, as economies structurally transform, they have the means to invest in connective infrastructure and in commanding and generating greater supplies of energy, which are essential for modern economic activity, including food production. Where these structural transformation bonuses are lacking, doing business is subject to increased risks, as these bonuses determine a country's absolute and relative economic competitiveness on the global stage. They also allow a country to be more resilient in the face of external shocks. Countries that are in earlier stages of structural transformation are more vulnerable to being harmed by shocks emanating from the external environment. The more vulnerable they are, if an adverse shock occurs, it can set back their structural transformation further, possibly creating development traps.

Informed by the scholarly literature on the nature of and constraints to structural transformation in Africa and its relation to the perceived riskier environment for doing business, much of the institution and governance-building policy thrusts of recent decades have been aimed at furthering structural transformation. These policy thrusts have therefore focused on the internal factors determining the vulnerabilities, and hence risks, of countries in Africa to external shocks. They have, as such, dealt with reducing market and governance failures, as mentioned previously.

Exposure to shocks does not necessarily mean that Africa is at risk. The extent of risk depends on how vulnerable countries in Africa are to being harmed by these shocks if they occur. Thus, the degree of risk is determined by exposure and vulnerability, that is, an indication of the extent of these countries' exposure to these risks and the degree to which they are vulnerable to suffering damages if affected. From discussions on the recent polycrisis and building upon more general literature on country-level vulnerability in developing countries (for example, Biswas and Nautiyal, 2023; Naudé et al., 2009; Naudé et al., 2011), the risk analysis in this chapter will emphasize six types of shock (political, economic, demographic, energy, technology and climate change shocks) that can threaten trade and capital flows in Africa and six domains across which countries in Africa are vulnerable to those shocks. The interdependent domains of vulnerability are economic, governance, connectivity, social, energy and climate (see figure I.2 and the methodological framework in box I.1).

The proposed conceptual framework in figure I.2 shows that a polycrisis is marked by the exposure of countries in Africa to six categories of covariate hazards or risks, which are hazards or risks that affect all countries and broad external trends. These include political shocks, such as

Figure I. 2
Interconnecting exposure and vulnerability to polycrisis shocks



Source: UNCTAD.

the rise of populism; economic shocks, for example, resulting from trade tensions, pandemics and systemic financial crises; demographic shocks, for instance, due to migration and ageing; energy shocks, caused by the energy transition and decline in the use of fossil fuels; technology shock, such as the continued digitalization of the world economy and advances in artificial intelligence; and climate shocks resulting from climate change. However, these shocks do not stem from exposure to country-specific (idiosyncratic) risks, but rather global risks that affect these six categories in an interrelated manner.

Figure I.2 also indicates that countries in Africa will be differently affected by these broad categories of hazards depending on how vulnerable they are. Here, the heterogeneities of countries come into play. Thus, depending on how a country fares across the six domains, it will be more or less at risk. These are domains where countries can act to reduce their vulnerability. The domains are the economic domain (for instance, the extent to which a country is in debt), the governance domain (for instance, the extent to which a country has robust institutions), the connectivity domain (the extent to which a country is connected to and interconnected with the rest of the world), the social domain (for instance how strong trust and social capital in a country is), the energy domain (how dependent a country is with respect to various forms of energy) and the climate domain (what efforts a country is taking to adapt to global warming).

The next two sections of this chapter will explain the exposure of Africa to shocks emanating from the polycrisis and its vulnerability to being harmed by the external shocks identified. Thus, some countries can be highly exposed to a risk, but because of low vulnerability and high resilience to that particular risk, will not be at high risk overall, and vice versa. The benefit of looking at risk from the angles of exposure and vulnerability is that, while there is little individual countries can do in the short to medium terms to reduce their exposure to a risk, they can take action to lessen their vulnerability. Hence, the report focuses on how countries in Africa can counter the risks emanating from the global polycrisis.

The risk analysis will emphasize six types of shock (political, economic, demographic, energy, technology and climate change shocks)

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Box I. 1
Methodology

To better understand the risk levels that countries in Africa face in the context of the polycrisis, a new approach is proposed for analysing and capturing the extent to which all 54 countries in Africa are exposed to these risks, and the degree to which they are vulnerable to experiencing damages if affected (see the conceptual framework in figure I.2).

Empirical approach

This chapter aims to provide a framework based on an empirical approach[a] that can inform the assessment of risk and the extent of adverse events on trade and economic development in all 54 countries in Africa within the context of the global polycrisis. This depends, in turn, on the structural aspects of their economies; their integration into the world economy; and the political, economic, energy, technology, human rights and environmental and climate risks they may face. Moreover, exposure alone does not mean risk; risk also depends on a country's vulnerability and resilience. Resilience, which can be nurtured, depends on the level of economic development, social cohesion and governance, connectivity, freedom and vulnerability to climate change. The proposed framework makes emphatically clear that ranking countries is not helpful, as rankings only reflect relative positions. In a polycrisis, which entails hazards for all countries, the aim is not to be less affected than other countries but to reduce potential adverse impacts in an absolute sense. This allows for the consideration of each country's level of exposure and vulnerability, and how each country can best diminish the risk of polycrisis. This then also informs policy.

The exposure to shocks and potentially adverse events in the current polycrisis context is calculated using six sets of indicators that reflect exposure to political, economic, demographic, energy, technology, and climate change shocks. The vulnerability to shocks is calculated using six sets of indicators that reflect vulnerability across six domains, namely economic development, governance, connectivity, social, energy and climate. The exposure to shocks and vulnerability to shocks are constructed as composite components composed of various subcomponents reflecting exposure and vulnerability, which are composed of data series, some of which are obtained from existing indices.

Each subcomponent of the exposure and the vulnerability measures is normalized to lie between 0 and 100, with a higher score indicating higher exposure or vulnerability so as to obtain scale equivalence between the different indicators used (some bounded and some unbounded). The following normalization procedure (minimum-maximum transformation) is used: $X_{ji} = ((X_{ji} - minX_j)) / ((maxX_j - minX_j)) \times 100$

This normalization also deals with negative values in the data, which are inverted where applicable to ensure that a higher value always indicates a higher exposure or higher vulnerability.

The approach to constructing these components of exposure and vulnerability is based on international best practice, as per the *Handbook on Constructing Composite Indicators* of the Organization for Economic Co-operation and Development (OECD). The eight desirable attributes of a composite measure are accuracy, simplicity, methodological soundness, suitability for international and temporal comparisons, transparency, accessibility, timeliness and frequency, and flexibility.

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The framework uses available data; it is simple in that a proliferation of dimensions is avoided, and it is suitable for international comparisons across Africa in that all 54 countries are covered in all dimensions. The indices are also transparent and the full method of construction and the full data are available; moreover, all data are in the public domain, and the measures of exposure and vulnerability can easily be replicated. The data are thus accessible. Most series are also regularly updated and available for temporal analysis. The measures are also flexible in that, partly as a result of their simplicity, it is fairly easy to add new components if desired, as long as all 54 countries are covered.

The final data used to capture the exposure and vulnerability of all 54 countries in Africa to shocks in the context of the current global polycrisis are summarized in tables I.1 and I.2. Most of the data is derived from UNCTAD (UNCTADstat database), the World Bank and the African Development Bank. Wherever possible, relevant data from UNCTADstat were prioritized for use. Where UNCTADstat does not provide full coverage of all 54 countries in Africa, the second source used is the World Bank and where neither UNCTADstat nor the World Bank cover the categories that the exposure and vulnerability components are intended to measure, data from the African Development Bank data are used. Other sources of data used include the following: Inform climate change risk index (climate change); International Organization for Migration (migration); Ibrahim Index of African Governance in conjunction with the World Bank's World Governance Indicators (governance); and Our World in Data (human rights). Where possible, relevant data for 2022 are used. Where 2022 data are not available for all 54 countries, the most recent or closest year is used.

Source: UNCTAD, based on OECD, European Union and European Union Joint Research Centre, 2008 and various databases mentioned above.

[a] While the empirical approach provides robust data analysis, based on various sources of regularly updated and available data and indicators, suitable for international comparison across all 54 African countries (that is, allowing cross-country comparisons), and providing the advantage of capturing exposure and vulnerability to risks emanating from the polycrisis from various low-correlated measures, some caveats should be considered when interpreting the results. For instance, the reliability and validity of the empirical framework have not been extensively tested, which could affect the findings and measure of exposure or vulnerability across some African countries. Moreover, the effect of outlier values for some small island developing States regarding their vulnerability to climate risk emanating from the polycrisis may influence the applicability of the results. However most of these African States have made significant progress in strengthening their resilience through improved macroeconomic policies and governance, and have thus improved their abilities to mitigate climatic hazards and related risks.

Exposure to shocks in Africa

The risks that the polycrisis holds for Africa depend on its exposure to shocks and its vulnerability to being negatively affected by those shocks. Some countries in Africa may be highly exposed but due to sufficient bulwarks, these shocks may not generate much harm. Others may not be greatly exposed but may be highly vulnerable to harm, whereby even relatively small degrees of exposure may pose risks. For instance, measures of exposure to shocks refer to potential shocks outside the control of a Government, while measures of vulnerability to shocks considers the instruments under government control. This subsection discusses the six entangled types of shock that can threaten trade and development in Africa: political, economic, demographic, energy, technology and climate change. Table I.1 summarizes the components and the data used to construct the exposure to shocks framework.

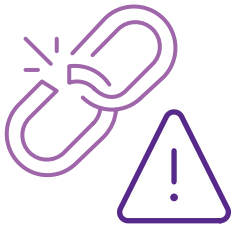
Table I. 1
Components of the exposure to shocks framework

Components	Data used	Sources
Exposure to political shocks	Political stability and absence of violence indicator Human rights index	World Governance Indicators database (World Bank) Our World in Data (Global Change Data Lab)
Exposure to economic shocks	Trade as a share of gross domestic product (GDP) External debt stocks Export product concentration index	World Development Indicators database (World Bank) UNCTADstat product concentration indices of exports; five-year average 2017–2022
Exposure to demographic shocks	Growth in demographic post-dividend countries Urbanization rate, average 2018–2022 International migrant stock, 2020	World Development Indicators database (World Bank) Migration data portal, International Organization for Migration
Exposure to energy shocks	Energy imports Fuel export dependence	World Development Indicators database (World Bank)
Exposure to technology shocks	Frontier technology readiness index Government artificial intelligence readiness index	UNCTADstat Oxford Insights[3]
Exposure to climate change shocks	Agriculture's share of GDP, average 2018–2022 Hazards exposure score Environmental health pillar score	World Development Indicators database (World Bank) Inform climate change risk index

Source: UNCTAD.
Note: Data year 2022 or otherwise indicated. Wherever possible, relevant data from the UNCTADstat database are used. Where UNCTADstat does not provide for full coverage of all 54 African countries, other data sources are used.

[3] See https://oxfordinsights.com/ai-readiness/ai-readiness-index

The exposure of Africa to political shocks is heightened by the polycrisis that has exacerbated **geopolitical tensions**



Major global supply chain disruptions include the pandemic, the war in Ukraine and attacks on vessels in the Red Sea shipping lanes

Political shocks

The polycrisis is characterized by increased political turbulence worldwide and with interacting and spillover effects between countries. It has also affected Africa, which has been argued to be particularly exposed to political shocks. These include political uncertainty and protests, erosion of political freedom and accountability, threats to progress in protecting human rights and, in extreme cases, coups d'état and violent conflict (Naudé et al., 2011). In recent years, the prevalence of coups has remerged in Africa. In 2021, United Nations Secretary-General Antonio Guterres referred to "an explosion in seizures of power by force" taking place in Africa (United Nations, 2021), Since 1950, 220 of 492 attempted or successful coups d'état have taken place in Africa, and 45 of the 54 countries in the region have experienced such an event (Duzor and Williamson, 2023). The resurgence of coups raises a risk for peace and democratic progress, with potential spill-over effects on economic growth and inclusivity (United Nations Development Programme, 2023).

The exposure of Africa to political shocks is heightened by the polycrisis that has exacerbated geopolitical tensions. Moreover, there is concern that even the progress that has been made in establishing democratic governance in Africa may be threatened. The polycrisis has clearly been exacerbating geopolitical relations. According to recent literature, the impacts of geopolitical events have become more long-lasting and a structural market risk (BlackRock, 2023). Countries in Africa already marked by high levels of political instability or a recent history of such, and countries where human rights are less entrenched, will be most exposed to these political shocks associated with the polycrisis. Figure I.3 shows the exposure of countries in Africa to political shocks derived from the polycrisis. Countries found to be most exposed to political shocks are also those with the highest levels of political instability and violence.

Countries least exposed to political shocks emanating from the polycrisis are those marked by high levels of political stability and protection of human rights. The top five among those countries are Botswana, Cabo Verde, Seychelles, Namibia and Mauritius.

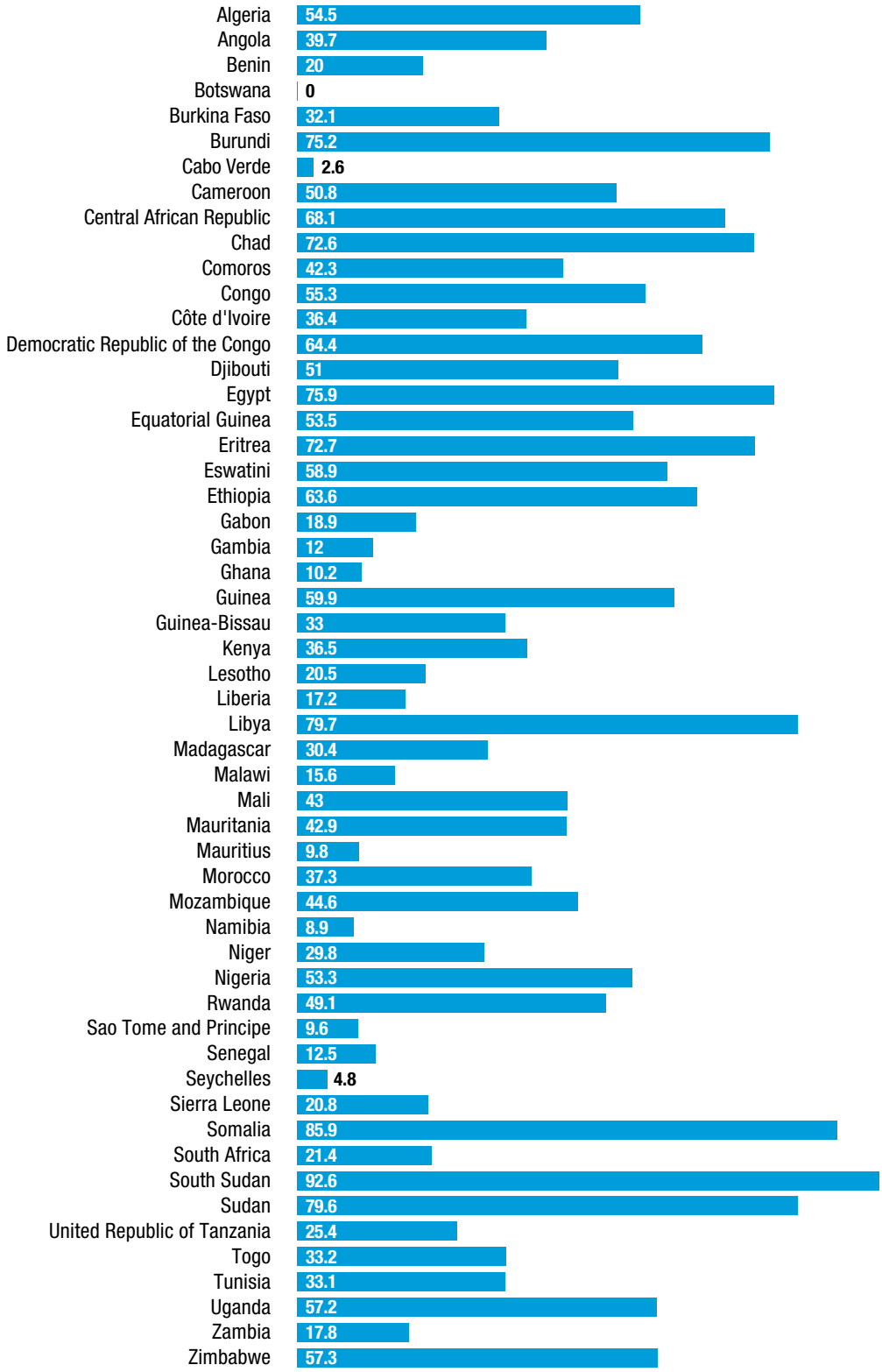
Economic shocks

The external economic shocks to which countries in Africa are exposed are well known and have generated significant literature, much of which, in the 1980s and 1990s, dealt with the structural adjustment programmes that many countries had to adopt, most often to obtain financial support from the Bretton Woods institutions. More recently, with the commodity price boom, the global financial crisis and the COVID-19 pandemic, the emphasis has shifted towards the requirements for sound macroeconomic management in the face of commodity and oil price volatility, demand reductions in the major markets for African exports and appropriate trade and industry policies for the structural transformation of economies in Africa, given changes in globalization.

In the global polycrisis, all of these shock mechanisms are at work. For instance, one of the major impacts is the continued disruption of global supply chains, which already showed structural changes after the global financial crisis of 2008–2009. Major global supply chain disruptions in recent years include the pandemic, the war in Ukraine and attacks on vessels in the Red Sea shipping lanes. The impacts of global supply chain disruptions on countries in Africa are magnified by the systemic effects they cause, exemplifying the interconnectedness that characterizes risks in the polycrisis.

One such systemic effect of global supply chain reactions to which countries in Africa are exposed is higher inflation – pushing up the general cost of living and contributing to the cost-of-living crisis already being experienced in many countries in Africa.

Figure I. 3
Exposure to political shocks, by country



Source: UNCTAD calculations, based on data from the World Governance Indicators database (World Bank) and Our World in Data (Global Change Data Lab).
Note: Measure of exposure to political shocks based on political instability, absence of violence and human rights index.

Higher inflation, as the world experienced in 2022, inevitably raises the spectre of higher interest rates, which can shock countries with a heavy debt burden, raising the cost of servicing the debt. Large amounts of foreign borrowing can place an unsustainable burden on countries if their economic growth does not allow sufficient government income to service the debt and/or if their exports and currency movements shift adversely, again making debt servicing difficult.

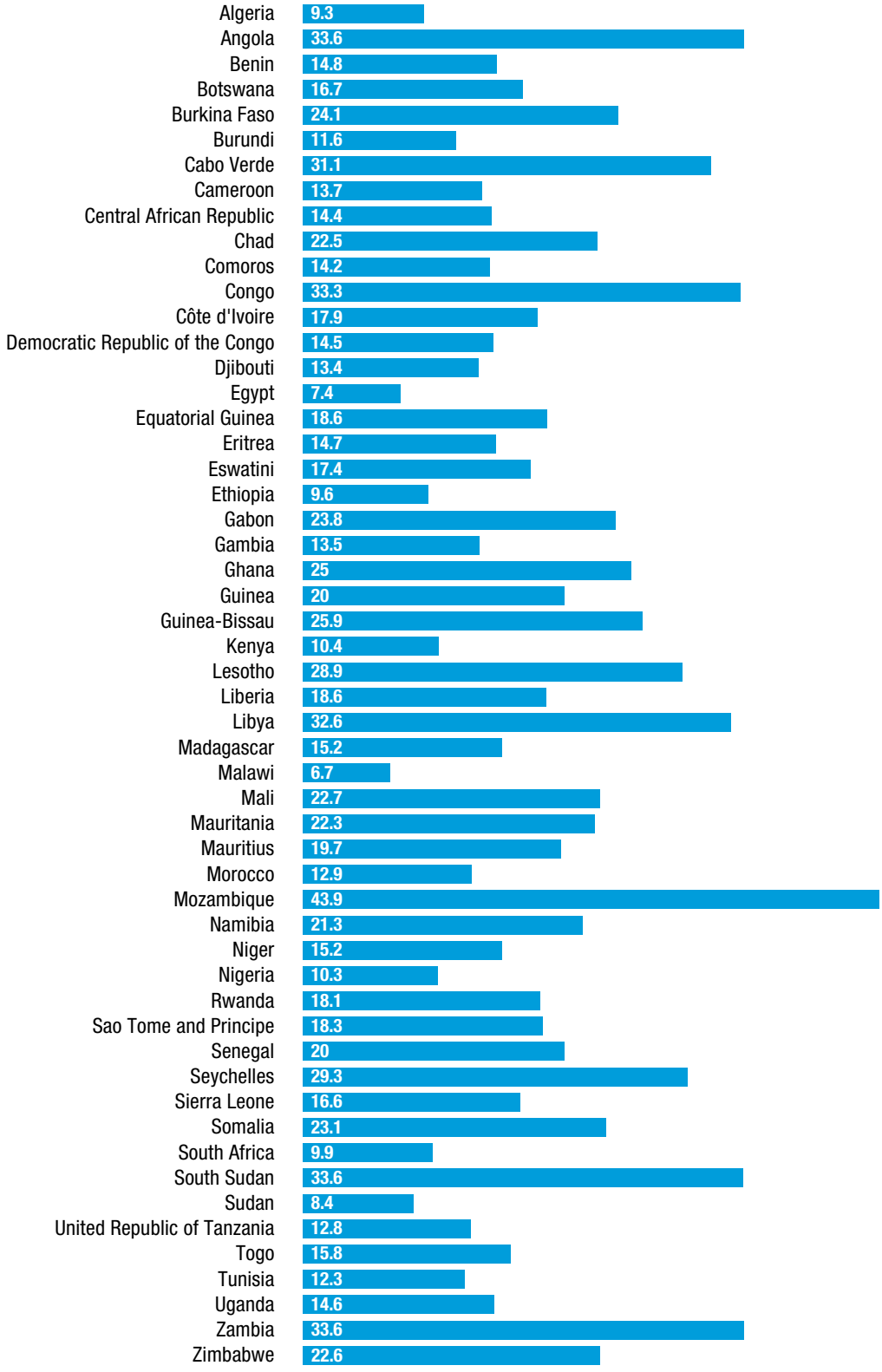
Hence, because of global supply chain disruptions and higher inflation and borrowing costs worldwide, many countries in Africa have been facing actual and possible debt defaults, recording large ratios of external debt to GDP. In 2023, 46 per cent of the countries in Africa had debt-to-GDP ratios of above 60 per cent (UNCTAD, 2024a). The countries most exposed to economic shocks through their global trade and debt levels are Mozambique, Zambia, Angola, South Sudan and the Congo (figure I.4). It becomes clear that countries with larger trade shares of GDP, greater export concentration and deeper government debt will be particularly exposed to the economic shocks characterizing the polycrisis.

The influx of young people into African labour markets will have to be accompanied by **improvements in productivity, investments in skills and technological advances**

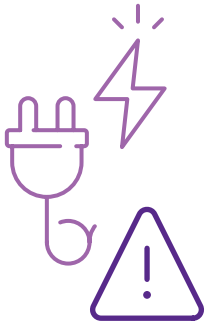
Demographic shocks

A third category of external shocks associated with the global polycrisis is related to the impact of the demographic change in Africa and in the region's main economic and trading partners. The demographic change in some of these partner countries is characterized by a marked slowdown in population growth, especially among young people. For instance, while population growth in the European Union (27 member States) increased by 92.3 million people between 1960 and 2022 (from 354.5 million to 446.8 million), its share of the world's population has been on the decline (from 12 per cent in 1960 to 6 per cent in 2022) and is projected to drop to 4 per cent (Department of Economic and Social Affairs, 2022; Eurostat, 2023). with 20.8 per cent of its population aged 65 years or over (European Commission, 2023). A declining growth in population and a diminishing share of working-age people in total population can put pressure on labour markets, create imbalances in welfare and pensions and raise the per capita burden of public finances and investments required for demographic transition (European Commission, 2023). Such fiscal pressures could hamper the ability of advanced economies to provide financing assistance to developing countries. Official development assistance is regarded as one of the most stable and predictable sources of external financing for developing countries, especially in times of crisis. Recent international crises have brought a downturn in economic growth, rising inflation and other macroeconomic challenges, exerting pressure on aid budgets and creating shifts in the global landscape of development aid. For instance, official development assistance to Africa declined by 4.1 per cent in 2022, despite a global increase of 22 per cent, reaching a record high of $287 billion at constant 2021 prices. According to United Nations data, this was the result of a shift towards the allocation of more aid budgets to meet the socioeconomic needs of refugees and asylum seekers in donor countries (UNCTAD, 2024b). In Africa, however, the demographic change is characterized by a growing share of the world population and a larger share of working-age individuals. The young working-age population of Africa (people aged 15–24 years) is projected to increase to 73 per cent (or 151 million) of the world's population aged 15–24 years by 2050 (United Nations, 2023b). The influx of young people into African labour markets will have to be accompanied by substantial improvements in productivity growth and increased investments in skills development and technological advances.

Figure I. 4
Exposure to economic shocks, by country



Source: UNCTAD calculations, based on data from the World Development Indicators database (World Bank) and UNCTADstat.
Note: Measure of exposure to economic shocks based on trade share, export concentration and external debt.



Africa is exposed to changes in the costs and availability of energy: **$190 billion required annually to address energy needs and risks**

Migrant and refugee flows represent another demographic shock to which countries in Africa are exposed. Climate change, conflicts and economic stagnation are three of the major drivers of voluntary and forced migration across the continent (Naudé, 2010). These forces will continue to push further out-migration, in an interconnected and mutually reinforcing manner. Intra-African migration data, concerning countries of origin and destination situated in Africa, rose from about 18 million Africans in 2015 to 21 million in 2020, slightly higher than the number of migrants from Africa (19.5 million in 2020), that is, Africans living in non-African countries (International Organization for Migration, 2024). This dynamic is similarly reflected in refugee flows, with most African refugees being hosted in other African countries (International Organization for Migration, 2024). While free movement protocols adopted at the subregional level, for instance in regional economic communities, have been instrumental in enabling such migration flows, climate-change–induced disasters, such as droughts, hurricanes and floods, remain a significant driver of migration and displacement in Africa. Thus, as climate change intensifies, migration will increase, which will contribute to further economic stagnation, which in turn will make the mitigation of and adaptation to climate change more difficult. Countries that are already home to a large stock of immigrants will be particularly exposed, as the latter will put further pressure on resources and may have an impact on economic growth.

Based on these features, figure I.5 shows the demographic shock exposure across countries in Africa. The ones most exposed to demographic shocks are Seychelles, Djibouti, Botswana, Côte d'Ivoire and Libya. The countries with the lowest levels of exposure are Madagascar, the Niger, Mauritius and Morocco.

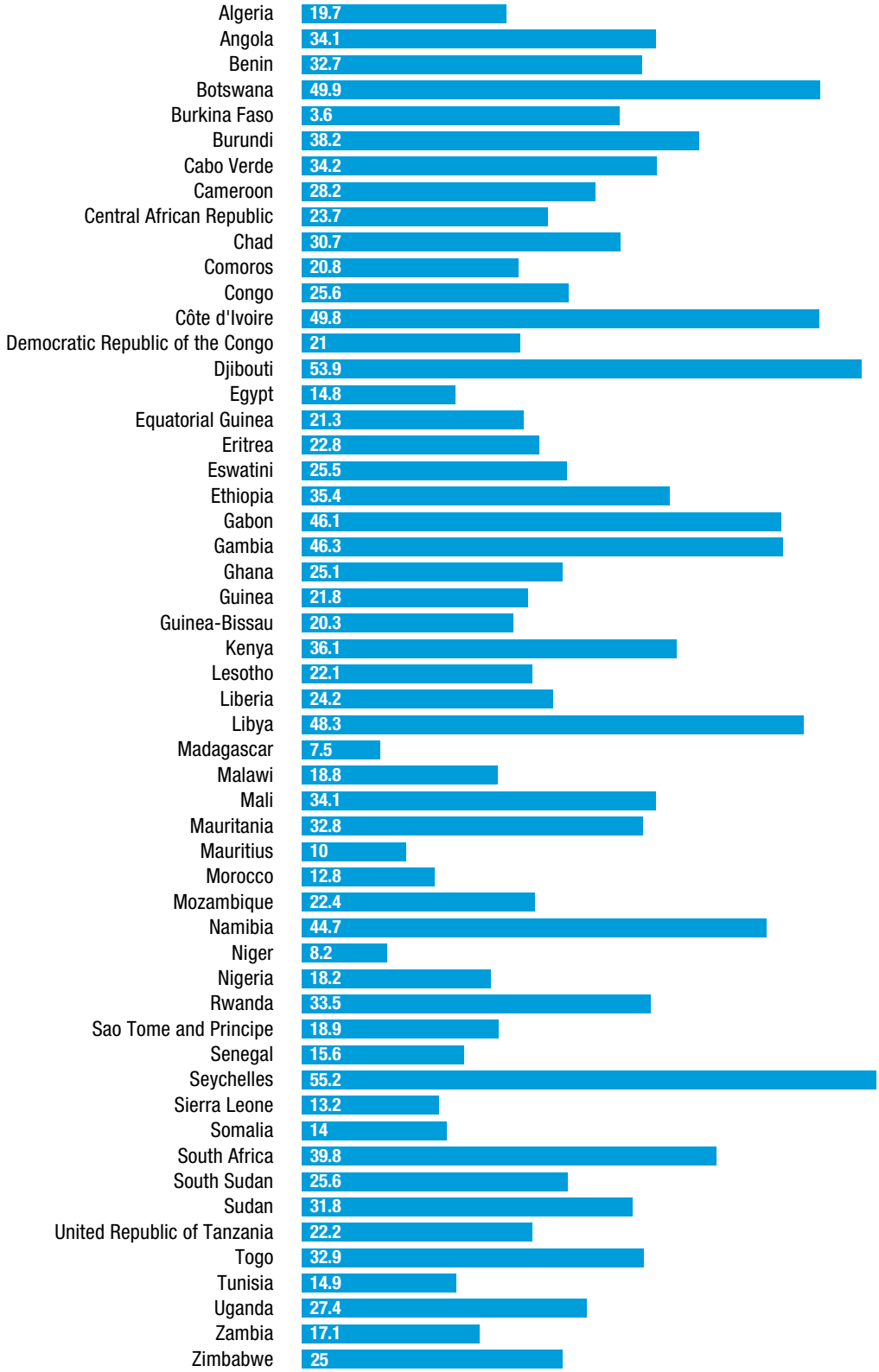
Energy shocks

A fourth category of shocks emanating from the global polycrisis can broadly be labelled as energy shocks. Globally, energy markets are in flux. This is most notable in disruptions in energy markets and prices that were sparked by the COVID-19 pandemic, then amplified by geopolitical tensions, such as the war in Ukraine and tension in parts of the Middle East (International Energy Agency, 2023a). Although oil prices have increased sharply above $40 per barrel since 2005, the market has been subject to extreme volatility, with the crude oil price peaking at an average of about $110 per barrel in 2011 and 2012 and then dipping to a low $42 per barrel in 2020.[4] Following extraordinary price spikes in 2022, oil prices moderated in 2023 and returned above $90 per barrel in September 2023 (International Energy Agency, 2023a). Volatility and turbulence in energy markets, especially fossil fuels, increase risks to energy security and affordability. In 2023, the International Energy Agency (2023b) estimated investment in the energy sector to be $2.8 trillion. Countries in Africa are also exposed to changes in the costs and availability of energy for the following reasons:

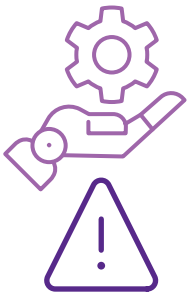
- The continent has access to and uses only a marginal share of the global energy supply at present.
- Much more energy use is needed to support economic growth and development.
- Energy poverty is high in Africa, with a significant share of the population without access to electricity.
- As the world transitions away from fossil fuels in line with the agreement established at the twenty-eighth Conference of the Parties to the United Nations Framework Convention on Climate Change, held in Dubai in 2023, countries in Africa still have limited ability and access to reliable renewable energy sources, such as untapped solar, wind and hydropower.

[4] See UNCTADstat data at https://unctadstat.unctad.org/datacentre/dataviewer/US.CommodityPrice_A.

Figure I. 5
Exposure to demographic shocks, by country



Source: UNCTAD calculations, based on data from the World Development Indicators database (World Bank) and Global Migration Data Portal (International Organization for Migration).
Note: Measure of demographic shock exposure based on demographic growth, urbanization and stock of international migrants.



Artificial-intelligence–driven automation **could lead to job losses**

Thus, given these exposures, the combination of higher energy prices and reductions in the availability of fossil fuels in African countries dependent on oil exports, poses a threat to further economic development. In addition, for the few fuel exporters on the continent, the danger is that increases in oil rents may distort local markets and exert further pressure on governance systems. With regard to energy shocks, the magnification of such shocks can be generated by economic shocks. For instance, economic shocks can have an impact on the ability of Africa to invest and build the additional energy infrastructure needed. According to the International Energy Agency (2023c), at least $190 billion will be required annually between 2026 and 2030 to address energy needs and risks, implying energy investment equal to 6.1 per cent of GDP by 2030. Determining from which sources these will be derived and how this will be financed remains a challenge, especially considering rising debt levels in Africa. Countries most dependent on either importing and/or exporting energy may be the most exposed to shocks in international energy markets. Figure I.6 shows overall exposure to energy shocks across Africa. The countries most exposed to energy shocks are Nigeria, Libya, Cameroon, Mozambique and Gabon. The countries with the lowest level of exposure to energy shocks emanating from the polycrisis are Sao Tome and Principe, Burundi, Comoros, Central African Republic and Lesotho.

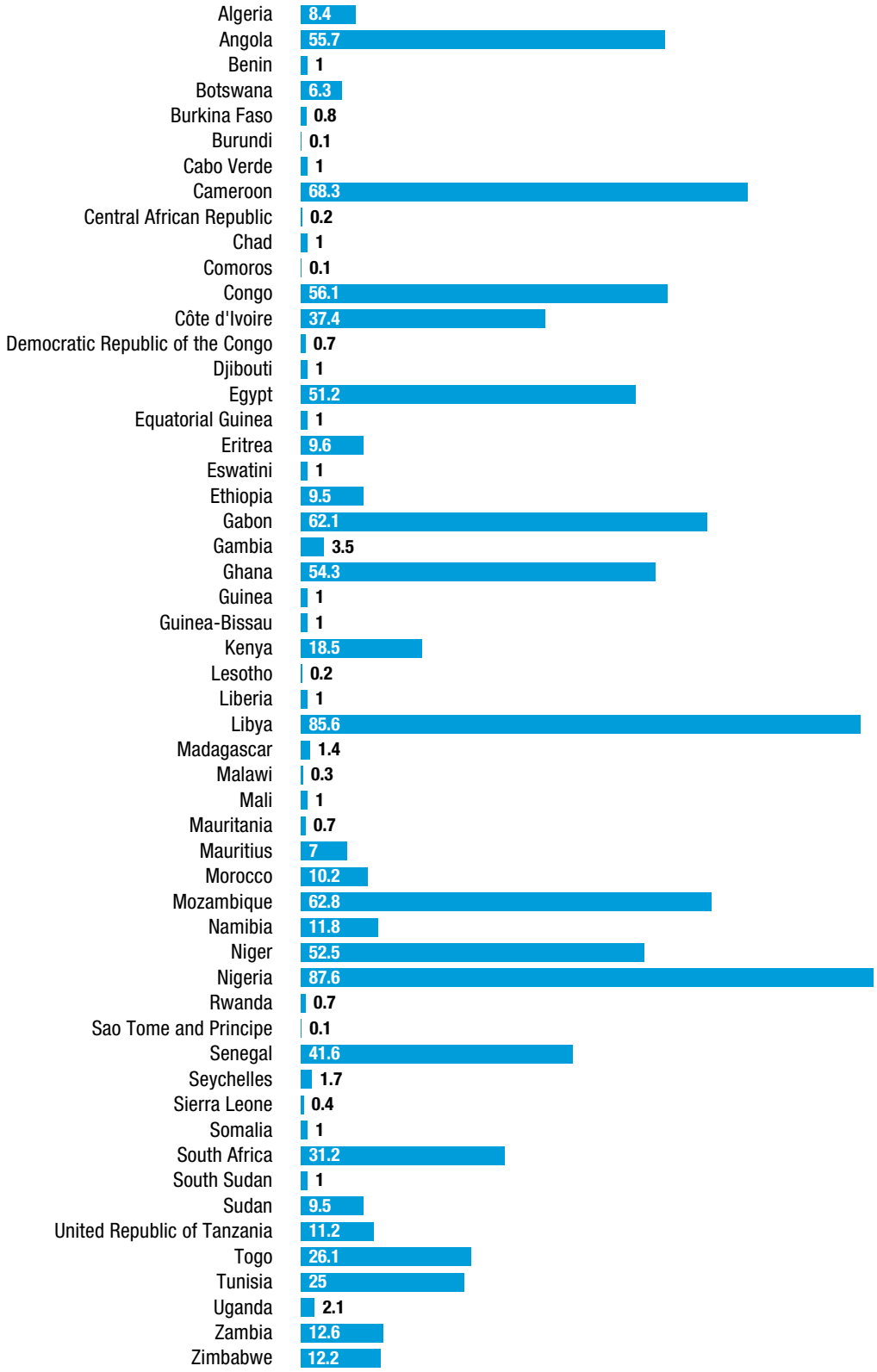
The global move away from fossil fuels towards renewable energy will increase the demand for minerals used in manufacturing renewable energy infrastructure, opening up strategic opportunities for Africa. Countries in Africa have substantial reserves of these critical minerals, accounting for 35 per cent of the world's manganese reserves, 50 per cent of global cobalt and reserves and nearly 75 per cent of phosphate rock reserves (International Renewable Energy Agency, 2024). These critical minerals and metals are also subject to increased demand in the global shift to low-carbon and digital technologies (UNCTAD, 2024c).

Technology shocks

A fifth category of shocks associated with the global polycrisis is technology shocks. The major technology shocks to which countries in Africa are exposed are those related to the digitalization of the world economy, including the rise of artificial intelligence and data-intensive technologies, often described as the fourth Industrial Revolution. These technology shocks pose various threats, including environmental impacts (high water and energy use related to the operationalization (that is, data processing and storage and other processes) of digital and data-intensive technologies, such as artificial intelligence, the Internet of things, fifth-generation mobile networks and blockchains (UNCTAD, 2024c). These emerging digital technologies have the potential to increase the automation of low-skilled jobs, especially in advanced economies and emerging countries. This can particularly affect women, who are often marginalized into labour-intensive, low-paying jobs offering little opportunity for growth and advancement (UNCTAD, 2024c).

It is expected that artificial-intelligence–driven automation could lead to growing job losses and that countries in Africa may be especially vulnerable. As such, countries with inadequate digital and technological regulations, including government capabilities to regulate and stimulate local capacity-building, and those that have a digital gap in terms of access to frontier digital technologies, will generally be more exposed to technological shocks. The UNCTAD frontier technology readiness index and the Oxford Insights government artificial intelligence readiness index both show a notable gap in technological readiness between countries in Africa and advanced economies, suggesting a significant exposure to further transformations of economies and business models by these technologies.

Figure I. 6
Exposure to energy shocks, by country



Source: UNCTAD calculations, based on data from the World Development Indicators database (World Bank).
Note: Measure of exposure to energy shocks based on imports and exports of energy.

The literature suggests that technology shocks and associated digital gaps can present economic risks for late industrializing countries by increasing the risk and cost of doing business, especially in volatile and unregulated environments or by posing a threat to the labour force, given the automation of jobs (Naudé, 2023). While increased digitalization has resulted in shifts in the nature and functionality of labour markets on both the demand and supply sides, it is important to note that the latest frontier technologies generate goods and services that can provide opportunities for creating new jobs, professions and economic opportunities (Bhorat et al., 2023; UNCTAD, 2023b).

Countries in Africa most exposed to technological shocks are South Sudan, Eritrea, the Central African Republic, Somalia and Liberia (figure I.7). The least exposed countries are Egypt, South Africa, Mauritius, Tunisia and Morocco.

In 2022, climate-related hazards **affected more than 110 million people** in Africa, causing significant economic damage, estimated at over $8.5 billion

Climate change shocks

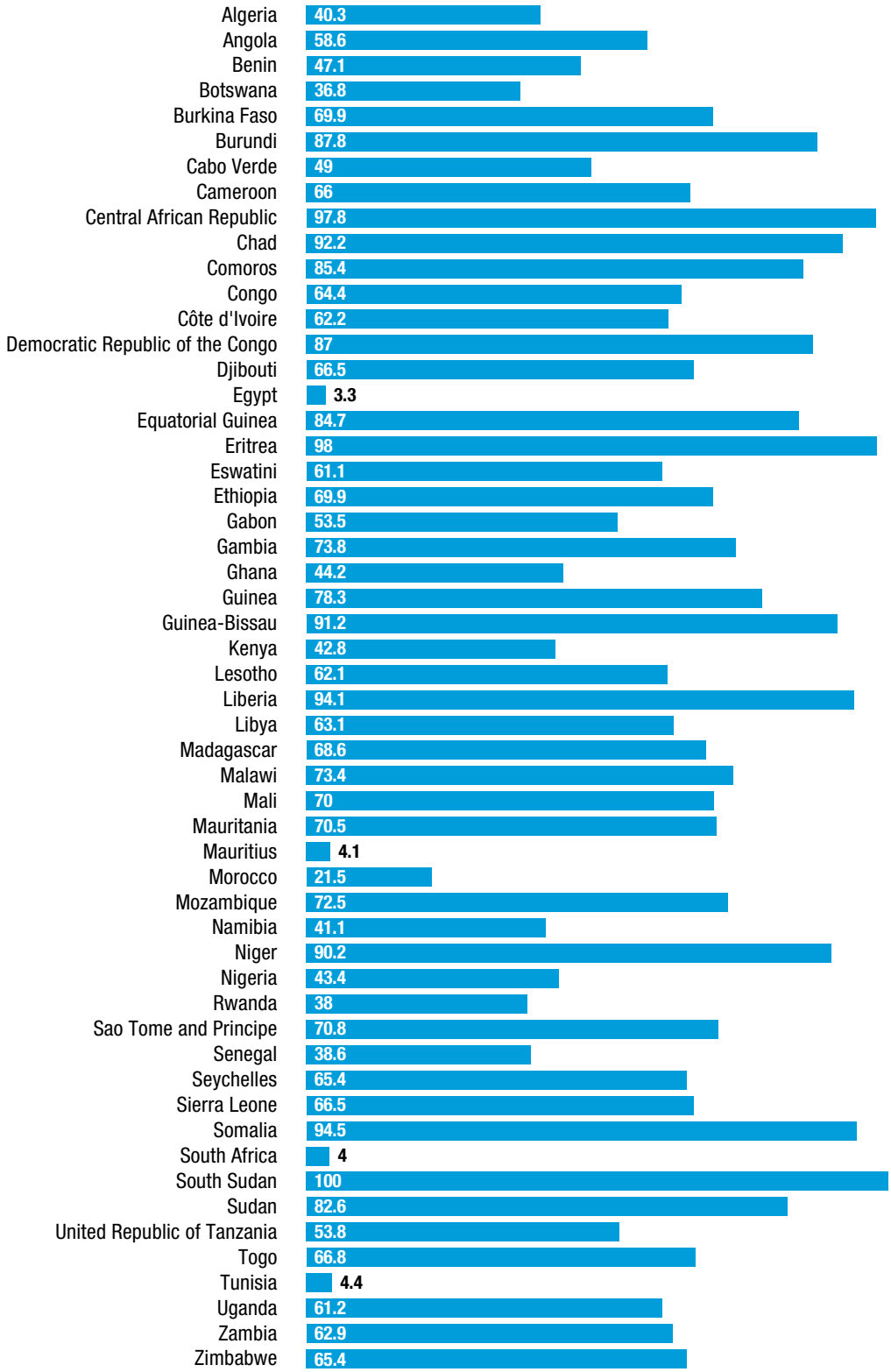
Climate change and inadequate responses to climate change affect the risk profile of countries in Africa. This raises the risks of investment and trade projects delivering less-than-expected returns. Sectors particularly at risk of climate-related events in Africa include agriculture and food production, tourism, water-intensive manufacturing and transport. The threats of extreme weather and climate events in reducing agricultural productivity, affecting biodiversity and ecosystems and diminishing natural resource bases could fuel conflicts for scarce productive land, water and pastures (World Meteorological Organization, 2023). The likely migration of populations, as habitats become uninhabitable, will also upend estimates of market demand and can disrupt economic growth. The natural environment of Africa and its exposure to natural hazards make it vulnerable to climate change shocks. After Australia, Africa is the world's second-driest continent (Simpson et al., 2023).

The natural environment in many countries in Africa is already facing many stressors, including pollution, over-exploitation and rapid rates of urbanization (see section "Demographic shocks").

Countries in Africa have contributed little to the existing stock of greenhouse gases in the atmosphere. Africa accounts for about 2 to 3 per cent of the world's carbon dioxide emissions (World Meteorological Organization, 2023). However, it is also acknowledged that these countries may be disproportionately affected by climate change and its responses. In 2022, climate-related hazards affected more than 110 million people in Africa, causing significant economic damage, estimated at over $8.5 billion (World Meteorological Organization, 2023). While most countries in Africa have committed to climate adaptation strategies and climate governance frameworks, for example, nationally determined contributions, many countries face implementation and financing challenges arising from these strategies and frameworks. For instance, implementing climate governance frameworks in the 53 African countries that submitted their nationally determined contributions will require investments of up to $2.8 trillion between 2020 and 2030 (World Meteorological Organization, 2023). The lack of strong adaptation to climate change could cost countries in Africa economic loss and residual damages ranging between $290 billion (in a 2°C warming scenario) and $440 billion (in a 4°C warming scenario) (African Development Bank, 2022). The responses that the world agreed to at the twenty-eighth Conference of the Parties to transition away from fossil fuels will impose a potential cost – real and opportunity – on countries in Africa (see section "Energy shocks").

Another factor that could expose Africa to climate-change–related shocks and responses is the green industrial policies adopted by an increasing number of countries to mitigate climate change and reinvigorate their economies (Alami et al., 2023).

Figure I. 7
Exposure to technology shocks, by country



Source: UNCTAD calculations, based on data from the frontier technology readiness index (UNCTAD) and government artificial intelligence readiness index (Oxford Insight).
Note: Measure of exposure to technology shocks based on government artificial intelligence readiness index and distance to the technology frontier

Exposure to shocks does not necessarily mean that Africa is at risk. The extent of risk depends on how vulnerable countries are harmed by the occurrence of these shocks

These include the Green Deal Industrial Plan (European Union); the Modern American Industrial Strategy as laid out in the Inflation Reduction Act of 2022, the Infrastructure Investment and Jobs Act of 2021 (also known as the Bipartisan Infrastructure Law) and the Creating Helpful Incentives to Produce Semiconductors and Science Act of 2022 (United States); the Green Growth Strategy (Japan) and the Korean New Deal (Republic of Korea). These green industrial strategies offer opportunities for countries in Africa but also pose risks (Akinkugbe, 2023), one of which is that they could have an effect on trade and investment opportunities in African mining and energy sectors. However, it is important that the trade and investment policies of countries ensure a fair sharing of the benefits of the energy transition to avoid the rich endowment of critical minerals in Africa resulting in the economic and governance issues that have adversely affected development in resource-rich economies in the past.

There is also debate on whether African exporters may lose access to large, important markets such as the European Union, particularly under the European Union carbon border adjustment mechanism[5] and the Critical Raw Materials Act (2023).[6] Industries that have been identified to be at high risk for the application of tariffs in terms of the mechanism include cement, iron and steel, aluminium and fertilizers (Monaisa, 2022).

In Africa, countries that are more dependent on fossil fuel energy and agriculture for livelihoods and exports, and those that already have poorer environmental health and are more subject to natural hazards, will be more exposed to adverse events from climate change.

Figure I.8 depicts the exposure to climate risk across Africa. It suggests that the Niger, Burundi, Mali, the Central African Republic and Ethiopia are the countries in Africa most exposed to climate change shocks. The low exposure of small island developing States to climate change shocks within the context of the polycrisis can be partly explained by good local coping, adaption and risk management abilities; sound institutional foundations; developed hard and soft infrastructure; and remoteness or insulation from the global shocks of the polycrisis. (UNCTAD, 2024f).

Vulnerability to shocks

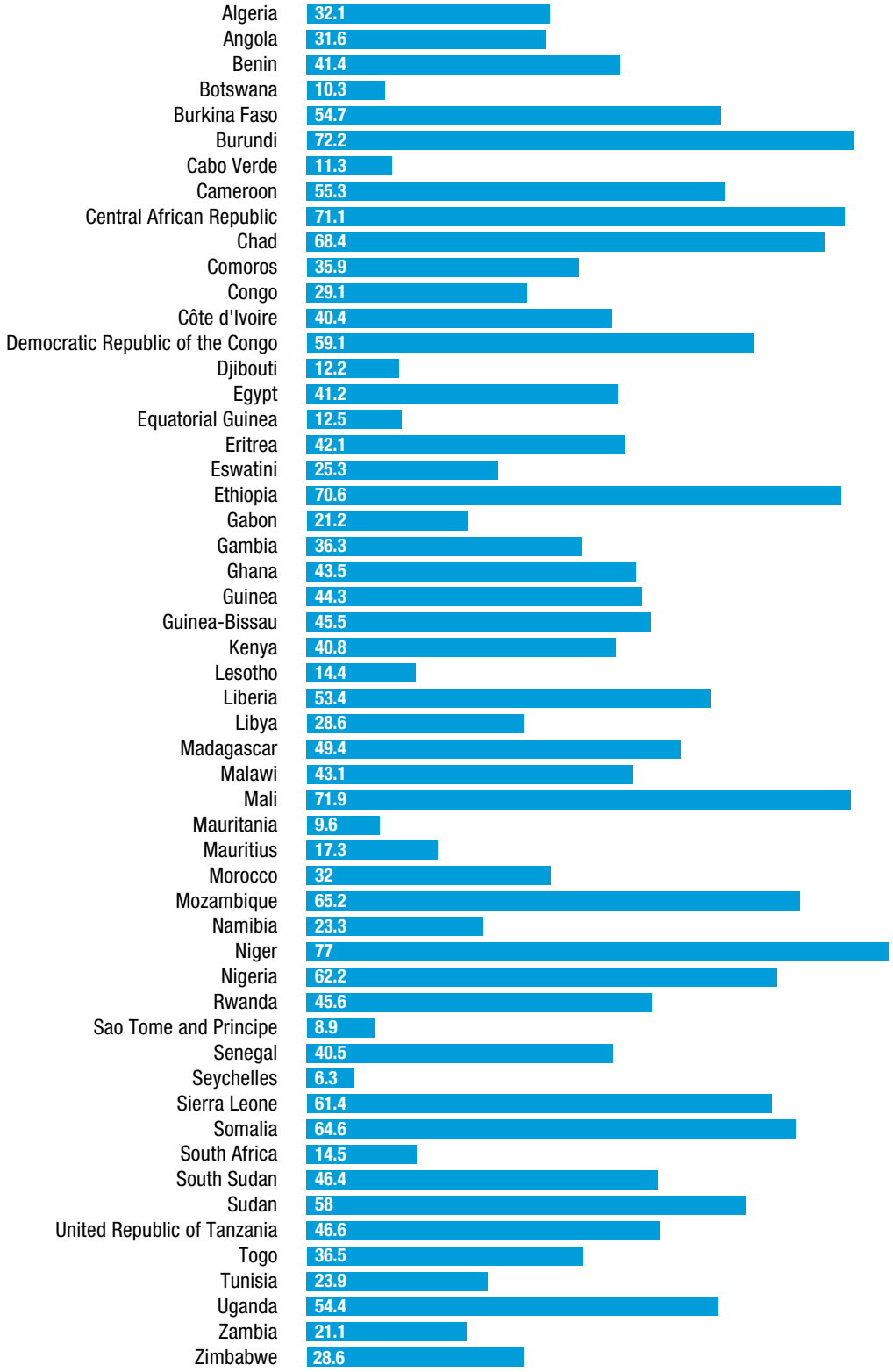
Exposure to shocks does not necessarily mean that Africa is at risk. The extent of risk depends on how vulnerable countries are harmed by the occurrence of these shocks. The best way to define and understand vulnerability is not to determine whether a country can avoid being affected or exposed to an event but to determine whether it can cope. As such, the flip side of vulnerability is resilience, namely, a country's coping ability, that is, its ability to recover from an adverse shock or event. While adverse events and even exposure are largely exogenous to individual countries, their vulnerability (lack of resilience) can be "self-inflicted" (Guillaumont, 2008). Thus, the degree of risk is determined by exposure and vulnerability.

Table I.2 summarizes the components and the data used to construct the vulnerability of countries in Africa to shocks emanating from the polycrisis (see box I.1 on the methodology).

[5] In Monaisa (2022), the mechanism is defined as a European Union "climate measure aimed at preventing the risk of carbon leakage" and involves a carbon tax on the embedded greenhouse gases of carbon-intensive products imported into the European Union.

[6] The Act, updated on 11 April 2024, aims to ensure the secure access of the European Union to critical minerals needed for its green transition.It creates a buyers' club for these minerals and a dominant position in the supply chain, which poses a risk for countries in Africa. This could place them at a disadvantage when negotiating prices and related conditions.

Figure I. 8
Exposure to climate shocks, by country



Source: UNCTAD calculations, based on data from the Inform climate change risk index (European Union), World Development Indicators database (World Bank) and the environmental performance index (Yale University).
Note: Measure of exposure to climate shocks based on agriculture, environmental health and natural hazards.

An economically more developed country **is considered less vulnerable**

Economic vulnerability

A country is vulnerable in the economic domain if the extent to which its economy can act as a bulwark or pillar of resilience in the face of external shocks is compromised. There is significant literature on vulnerability that has identified GDP per capita as an important bulwark (see chapter II). Countries with higher GDP per capita are seen as being less vulnerable to external shocks. However, GDP per capita is not sufficient on its own; also important is how inclusively this GDP has been generated and the vulnerability of jobs created through GDP growth. Thus, an economically more developed country is considered less vulnerable.

Table I. 2
Components of the vulnerability to shocks measure

Components	Data used	Sources
Economic vulnerability	Foreign direct investment, average percentage of net inflows, 2013–2022 GDP per capita, 2022 Vulnerable employment, average, 2018–2022	World Development Indicators database, World Bank
Governance vulnerability	Average governance score, 2013–2022 Governance weakness	Worldwide Governance Indicators database (World Bank)[7] Ibrahim Index of African Governance[8]
Connectivity vulnerability	Liner shipping connectivity index, 2021 Logistics performance index, 2022 or closest year Transport composite index, 2022 Information and communications technology (ICT) composite index, 2022	World Development Indicators database, World Bank World Development Indicators database, World Bank African infrastructure development index, 2022, African Development Bank African infrastructure development index, 2022, African Development Bank
Energy vulnerability	Share of population with access to electricity, average, 2018–2022	World Development Indicators database, World Bank
Social vulnerability	Social progress index scores, 2023	Social progress index, Social Progress Imperative
Climate change vulnerability	Global Data Lab vulnerability index[9] Global Adaptation Initiative vulnerability index[10]	Global Data Lab vulnerability index University of Notre Dame, United States

Source: UNCTAD.
Note: Data year 2022 or indicated otherwise. Wherever possible, relevant data from the UNCTADstat database are used. Where UNCTADstat does not provide for full coverage of all 54 African countries, other data sources are used.

[7] See www.govindicators.org/#home.
[8] See https://mo.ibrahim.foundation/iiag.
[9] See https://globaldatalab.org/gvi/about/.
[10] See https://gain.nd.edu/our-work/country-index/.

Many African economies remain largely dependent on natural resources, tend to be rural-based and are characterized by low productivity, which can have an impact on sustained industrialization and structural change on the continent (see, for example, Christiaensen and Chuhan-Pole, 2015; De Vries et al., 2015; Lele et al., 2015; McMillan and Headey, 2014; and Rodrik, 2014). However, there are emerging opportunities to achieve effective structural change and build resilient economies on the continent, including the catalyst role and potential of digitalization and technology in fostering higher productivity and increasing the complexity of African exports.

Harnessing the demographic dividend of Africa – an abundance of labour – will require unprecedented investment in African economies, namely, investments in human capital, physical capital and infrastructure, business capital (including intangible capital), social capital and social technologies. The combination of investment and innovation required suggests that nothing short of an entrepreneurial revolution is necessary to reduce the economic dimensions of vulnerability in Africa. This would entail both an entrepreneurial state and a dynamic private sector. In a textbook model of the world, such investment flows would happen as a matter of course, including investment flows from advanced to less developed economies as investors face diminishing returns to capital investments in economically advanced regions. It is the idea that investments would flow downhill. However, in the real world, this does not happen. Although foreign direct investment to Africa has been flowing downhill in recent years, declining by 3 per cent in 2023 to $53 billion (UNCTAD, 2024d), private capital investment on the continent has been flowing uphill, reaching a high of $7.6 billion in 2022, before dropping to $5.9 billion in 2023, influenced by broader global economic uncertainty that has compelled many investors to exercise caution in their investment strategies (African Private Capital Association, 2024). Therefore, it is not just the opportunities for investment in a region such as Africa that matters, but the risk-adjusted return that investors face. Thus, many countries in Africa are considered by investors to be a risky investment (Gbohoui et al., 2023). The fundamental, deep-seated risk facing investors and traders in Africa is that it may fail to structurally transform and thus remain vulnerable to external shocks.

Based on the above, countries in Africa with a low level of economic development as measured by GDP per capita, with more vulnerable employment and inequalities, and with less access to foreign direct investment inflows, will be more vulnerable in the economic dimension towards external shocks. The most economically vulnerable countries in Africa are South Sudan, the Central African Republic, Burundi, Burkina Faso, the Niger and Chad (figure I.9).

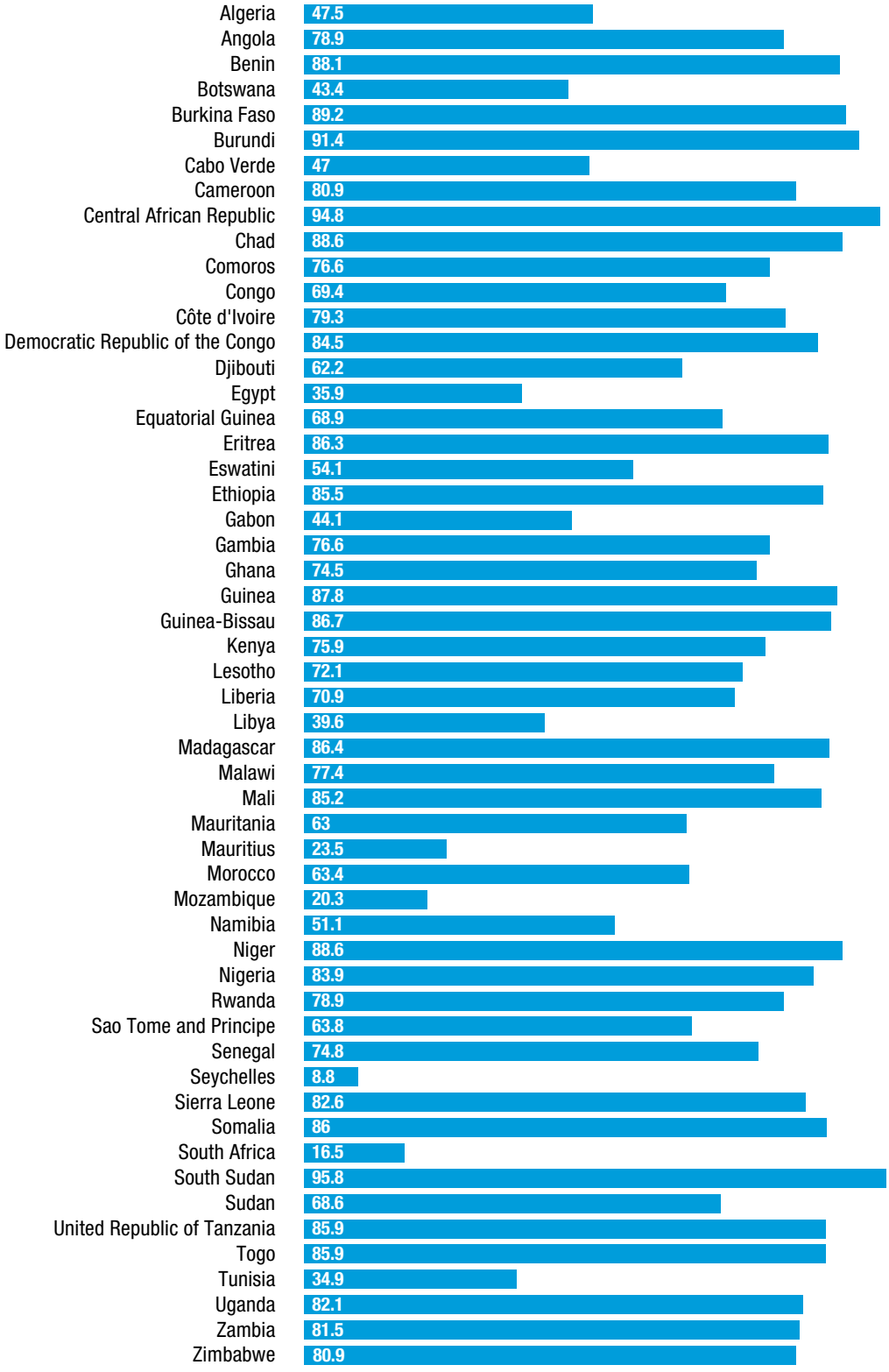
Governance vulnerability

According to Williamson (1998), governance "is the means by which order is accomplished in a relation in which potential conflict threatens to undo or upset opportunities to realize mutual gains". Lack of good governance is often perceived as one of the most serious sources of self-inflicted vulnerability to external shocks in Africa. Two notable country governance indicators that provide coverage for all African countries are the World Bank Worldwide Governance Indicators and the Ibrahim Index of African Governance. The Worldwide Governance Indicators database contains six indicators for over 200 countries and territories since 1996. These six indicators cover voice and accountability, political stability and the absence of violence and terrorism, government effectiveness, regulatory quality, rule of law and control of corruption. The Ibrahim Index of African Governance measures governance along four dimensions, namely security and the rule of law; participation, rights and inclusion; foundations for economic opportunity; and human development. Neither of these two measures of governance document significant improvements in the average scores of countries in Africa.

There are emerging opportunities to achieve effective structural change and build resilient economies on the continent

Lack of good governance is often perceived as one of the most serious sources of vulnerability to external shocks in Africa

Figure I. 9
Economic vulnerability to polycrisis shocks, by country



Source: UNCTAD calculations, based on data from the World Development Indicators database (World Bank).
Note: Measure of economic vulnerability based on GDP per capita, vulnerable employment and net inflows of foreign direct investment.

Those countries where governance is lacking in the aforementioned terms would be more vulnerable to suffer adversely in the face of external shocks.

Countries with the strongest governance, that is, countries scoring lowest on measures of governance vulnerability, are Mauritius, Cabo Verde, Botswana, Seychelles, South Africa, and Tunisia (figure I.10). These are countries in Africa that have made significant progress in strengthening their resilience to external shocks through improved macroeconomic policies, governance and stability.

Connectivity vulnerability

There are four dimensions in which the interconnectivity of countries in Africa and their connectivity to the rest of the world cause them to be vulnerable to shocks that can restrict the flow of goods and services, ideas and labour. These dimensions are trade and transport costs, logistical services, shipping and ICT and digital connectivity. Trade costs refer to "all costs incurred in getting a good to a final user other than the marginal cost of producing the good itself: transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, legal and regulatory costs and local distribution costs (wholesale and retail)" (Anderson and van Wincoop, 2004; see chapter III for intra-African trade costs).

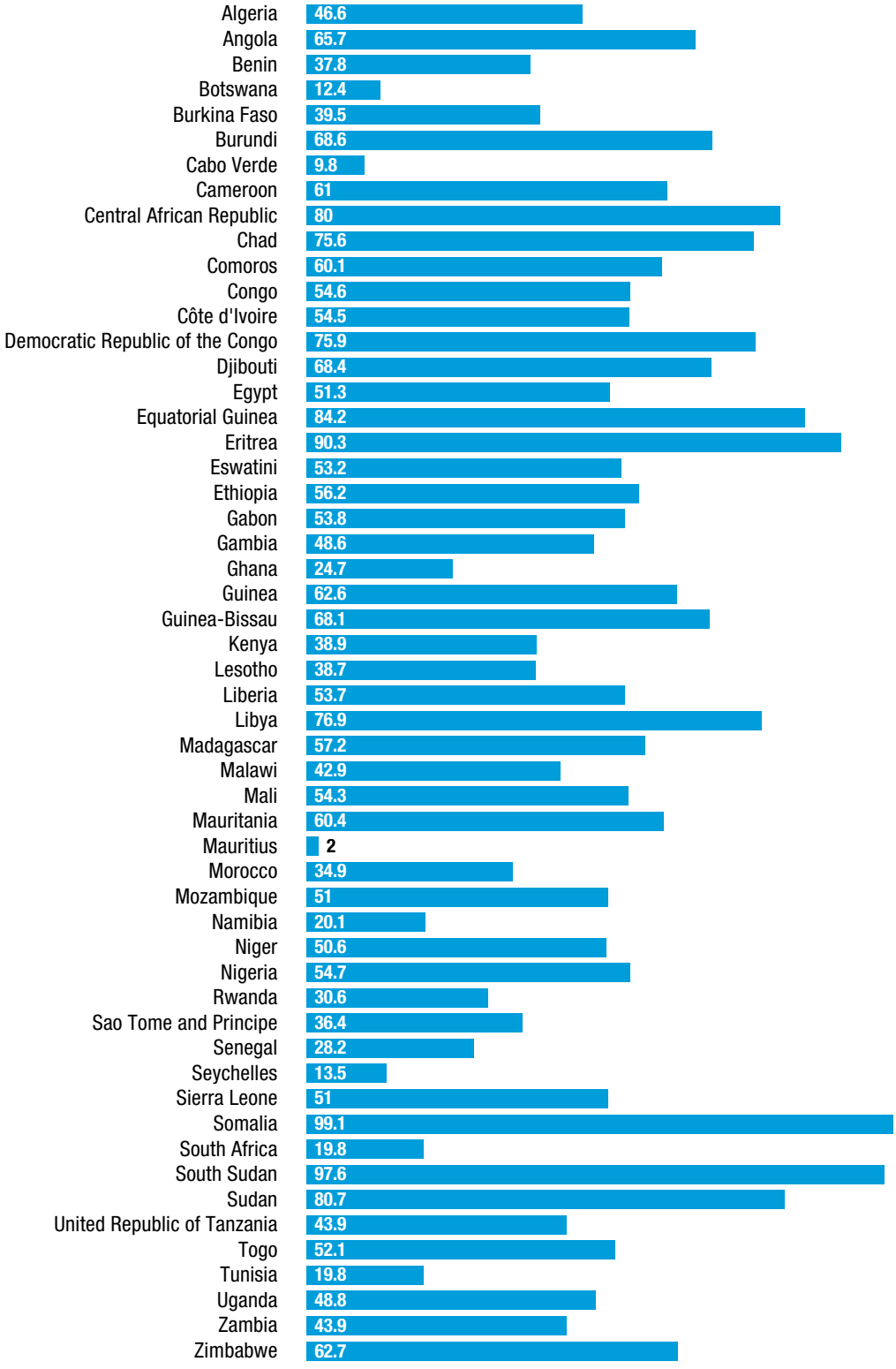
High trade costs create risks. The longer the distance, the more time is needed for exports, which in turn requires more inventory to be held, thus resulting in increased depreciation costs and possible adverse impacts on the perceived quality of the product (Hummels and Schaur, 2013). Inadequate infrastructure and logistics accentuate this downside of distance. Time-sensitive exports, such as fresh produce, are therefore less likely to be traded across great distances. Trade costs are a major source of risk and uncertainty, and of vulnerability to shocks. However, regional trade integration, through trade liberalization in goods and services and improved regional infrastructure and logistics, provides opportunities for lowering intra-African trade costs. For instance, the implementation of the Agreement Establishing the African Continental Free Trade Area is expected to increase intra-African freight by 28 per cent (primarily through rail, road and air transport) and demand for maritime freight by 62 per cent (UNCTAD, 2023c). Such improvements in intracontinental logistics networks will contribute to building the resilience of Africa to risks related to connectivity.

Logistical services, or trade logistics, refer to the services and infrastructure necessary to support and facilitate the movement of trade from point A to point B. The key logistical services and infrastructure consist of customs and border clearance facilities and services, the quality and appropriateness of trade and transport infrastructure, such as roads, ports and storage facilities; the accessibility and costs of international shipping; the quality of services provided by fourth-party logistical service firms; the infrastructure and ICT skills to track and trace shipments (digitalization of trade) and the reliability of transport services (World Bank, 2023a). Although shipping is included in logistical services, it is necessary to discuss it as a separate item or dimension of vulnerability in Africa. The bulk of its trade with the rest of the world depends largely on foreign-owned shipping companies. UNCTAD maritime transport indicators show that in 2021, ports in developing economies of Asia handled 59 per cent of world port container traffic, compared with 4 per cent of those in Africa (UNCTAD, 2024e).

The 2050 Africa's Integrated Maritime Strategy of the African Union recognizes these vulnerabilities in shipping and liner connectivity, and in 2012, set forth an agenda to extend the capabilities of Africa in shipping, recognizing the need for better ports and shipping to allow countries in the region to reap the potential benefits of the African Continental Free Trade Area.

High trade costs create risks. Trade costs are a major source of risk and uncertainty, and of vulnerability to shocks

Figure I. 10
Governance vulnerability to polycrisis shocks, by country



Source: UNCTAD calculations, based on data from the Worldwide Governance Indicators database (World Bank) and the Ibrahim Index of African Governance database (Mo Ibrahim Foundation).
Note: Measure of governance vulnerability based on average governance score, 2013-2022, selected from the Worldwide Governance Indicators and Governance weakness score, 2022, selected from the Ibrahim Index of African Governance.

In this regard, according to Konstantinus and Woxenius (2022), maritime transport has significant potential in Africa, given its large geographic area, projected freight volumes and customs and trade policies currently being pursued. However, such a system will require additional impetus in terms of strategy, policy and infrastructure. UNCTAD (2023c) reports that Africa will require close to 2 million additional trucks, over 100,000 rail wagons, 250 aircraft and more than 100 vessels by 2030, if the African Continental Free Trade Area is to be fully implemented.

Intraregional trade is, from this point of view, a bulwark against the risks of adverse global shipping changes in coming years (see chapter III). It will, however, need to be supported by the development of intraregional shipping infrastructure and services.

Significantly, the countries that are most vulnerable to shocks from the polycrisis are those that face high trade and transport costs, inadequate logistical services and poorly accessible and unreliable shipping, and that lag behind in terms of ICT and digital connectivity. Based on these determinants, the most vulnerable countries in Africa in terms of connectivity are Eritrea, Somalia, the Niger, Burundi, Madagascar and Sierra Leone (figure I.11). The least vulnerable countries are Seychelles, Egypt, South Africa, Mauritius and Morocco.

Social vulnerability

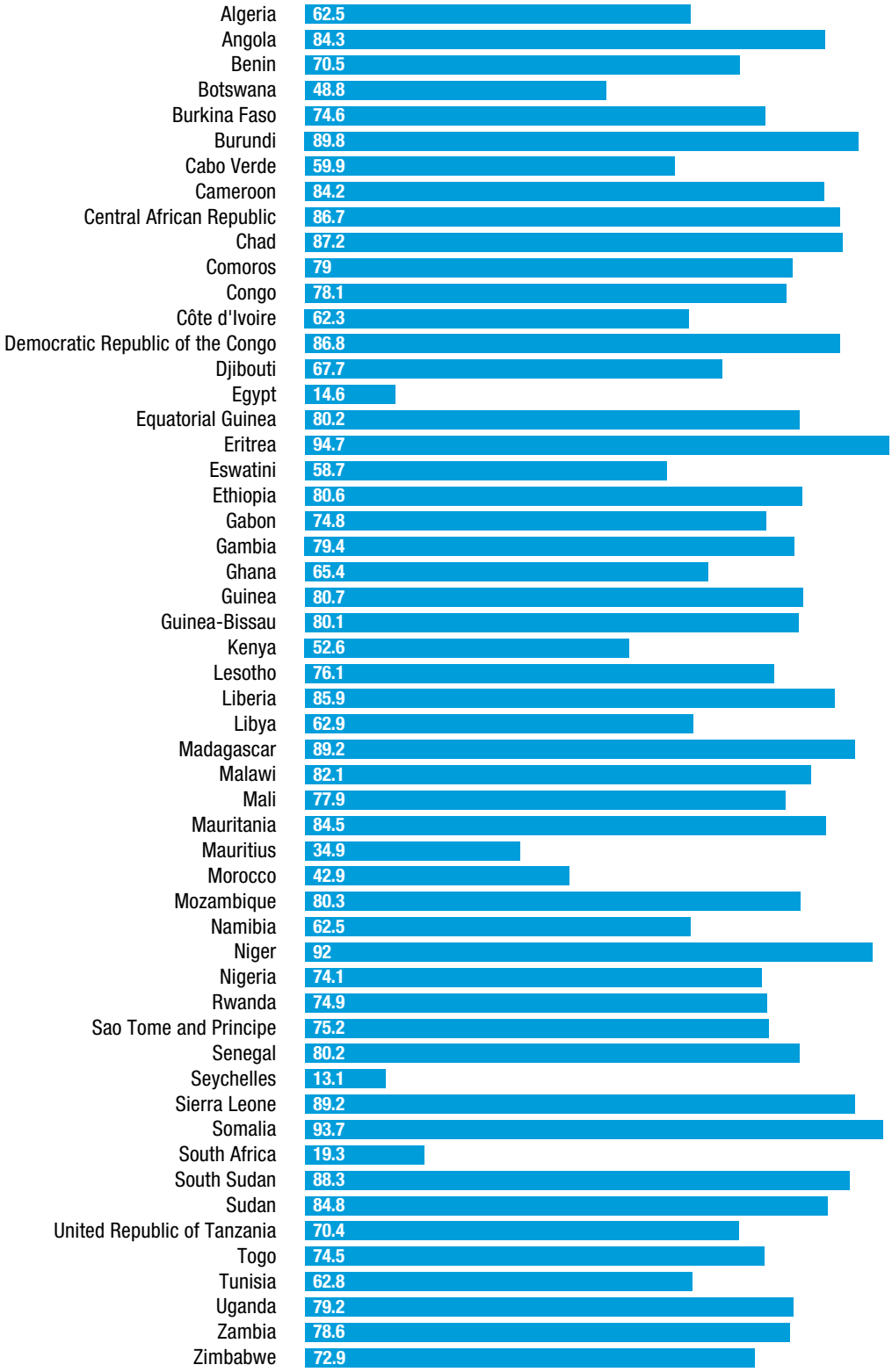
With regard to social vulnerability, the "broader conditions in which people are born, live, work and age can worsen an unfortunate event […] into a veritable disaster" (Mah et al., 2023). Therefore, a broad set of measures needs to be considered. Social vulnerability is also defined as the differential capacity of individuals or communities to cope with social and environmental shocks, including climate change, natural disasters and other societal risks (United Nations Development Programme, 2024). Perhaps the most comprehensive in this regard is the social progress index.[11] It measures the broader conditions of people's lives according to three pillars, namely, basic needs, foundations of well-being and opportunities. Each of these pillars consists of several indicators, spanning safety, access to water, nutrition, health care and housing, to the extent to which a society is inclusive and provides freedoms, rights and advanced education. Countries that score high on this index can reasonably be expected to have more robust social capital. Social capital is especially important for strong community governance, which complements the roles of markets and Governments, and can help decrease the number of market and governance failures. Allouche et al. (2023) discuss resilience during the polycrisis and stress that in times of crisis, communities need to develop their own responses according to their own needs and priorities.

It can thus be expected that countries in Africa with stronger social capital and hence better community governance, as reflected in their social progress index scores, will be less vulnerable to unfortunate external events during the polycrisis. While reducing social vulnerability can act as a bulwark against the global polycrisis, the polycrisis itself may negatively impact social capital and social progress. For instance, the COVID-19 pandemic and its unprecedented impact on global health and economic and financial systems has not spared African countries from economic contraction, with major setbacks with regard to poverty and inequality. The socioeconomic cost of the pandemic has been estimated at about 2.5 per cent of GDP, or about $65.7 billion per month (Economic Commission for Africa, 2021).

Countries in Africa with **stronger social capital will be less vulnerable** to unfortunate external events during the polycrisis

[11] See /www.socialprogress.org.

Figure I. 11
Connectivity vulnerability to polycrisis shocks, by country



Source: UNCTAD calculations, based on data from UNCTADstat, the logistical performance index (World Bank) and the infrastructure development index (African Development Bank).
Note: Measure of connectivity vulnerability based on liner shipping connectivity, logistics performance and transport and ICT infrastructure.

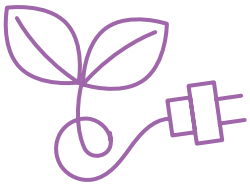
Figure I.12 depicts the vulnerability of countries in Africa across the social domain, based on the 2023 social progress index score, normalised and inverted. Countries with the highest levels of social vulnerability are South Sudan, the Central African Republic, Chad, Somalia and Eritrea. The countries with the lowest social vulnerability are Mauritius, Cabo Verde, South Africa, Tunisia and Algeria.

Energy vulnerability

Countries in Africa are exposed to energy shocks, given that the continent has access to and uses only a marginal share of global energy supply at present (see section "Energy shocks"). Moreover, much more energy use is needed to support economic growth and development, and energy poverty is high in Africa, with a significant share of the population not having access to electricity. As the world begins to transition away from fossil fuels, as agreed by the twenty-eighth Conference of the Parties to the United Nations Framework Convention on Climate Change, countries in Africa still have limited ability and access to reliable renewable energy sources such as solar, wind and hydropower. As energy prices increase, and the transition away from fossil fuels gains traction, and as the effects and impacts of climate change intensify, the countries in Africa that will be most vulnerable to shocks to global energy markets are those with a lack of access to renewable energy sources. Securing access to critical minerals and metals that are essential for the energy transition and the global shift to low-carbon and sustainable technological, industrial and economic progress has intensified competition among various countries, with the potential risks of creating additional environmental pressures and geopolitical and socioeconomic tensions associated with the production and trade of those minerals (UNCTAD, 2024c).

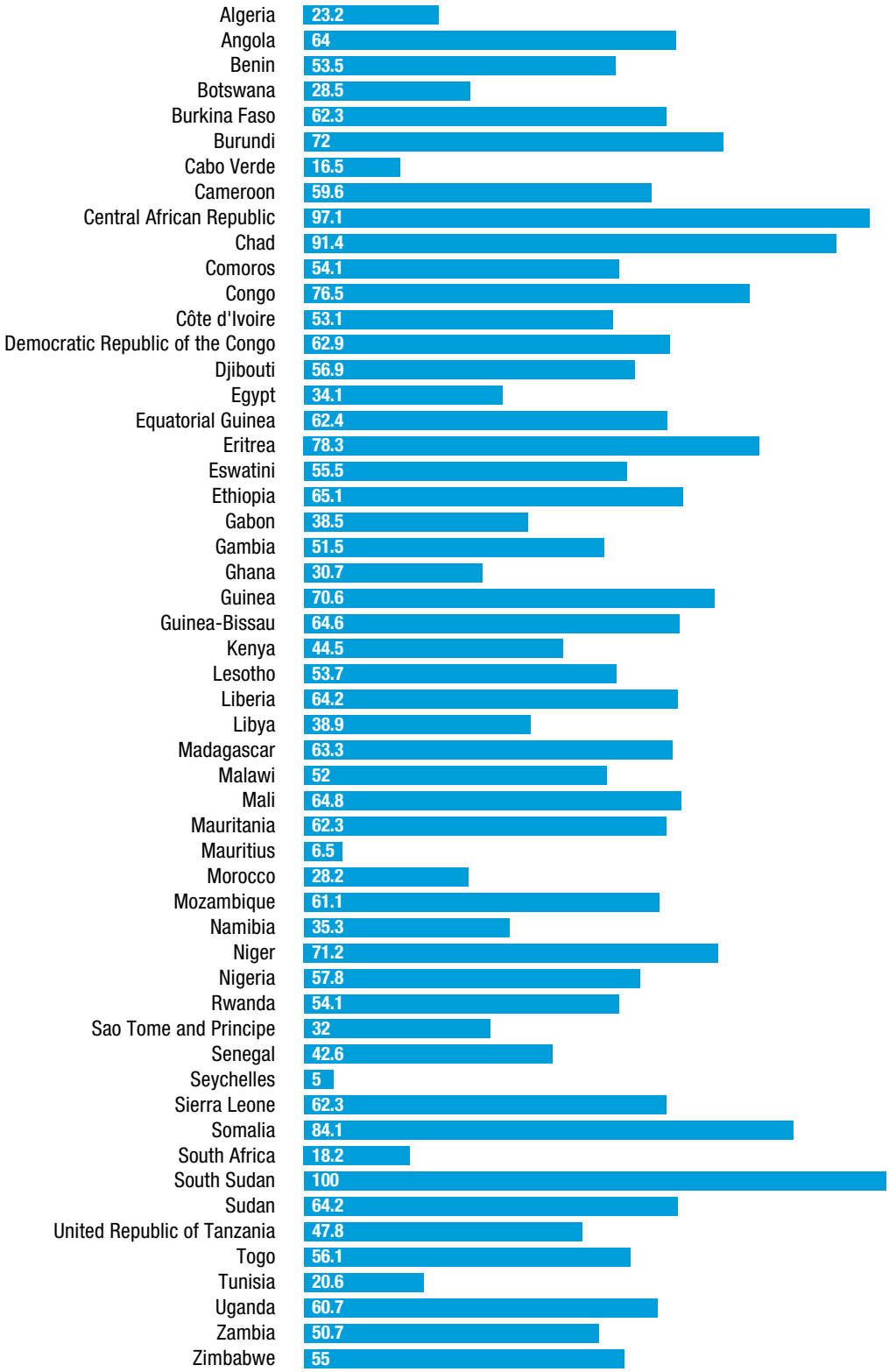
For access to renewable energy to be made more generally available, a challenge lies in building the appropriate energy infrastructure, including integrating renewable energy into the existing electricity grid, and upgrading this grid. Countries with existing infrastructure, which can be proxied by the access of the population to electricity, will be less vulnerable, in particular, because creating infrastructure requires energy in the first place. The risk to investment and trade in Africa in the current polycrisis is that if energy use is not handled properly, it will have significant negative implications on agricultural productivity, the competitiveness of agricultural exports and the viability of industrialization based on food production and agribusiness. Ultimately this may jeopardize food security, which may in turn lead to political instability and conflict, further deteriorating the investment and trade climate.

The countries in Africa most vulnerable to the adverse effects of shocks based on their low levels of access to electricity and low quality of electricity infrastructure are South Sudan, Burundi, Chad, Malawi and the Central African Republic (figure I.13).



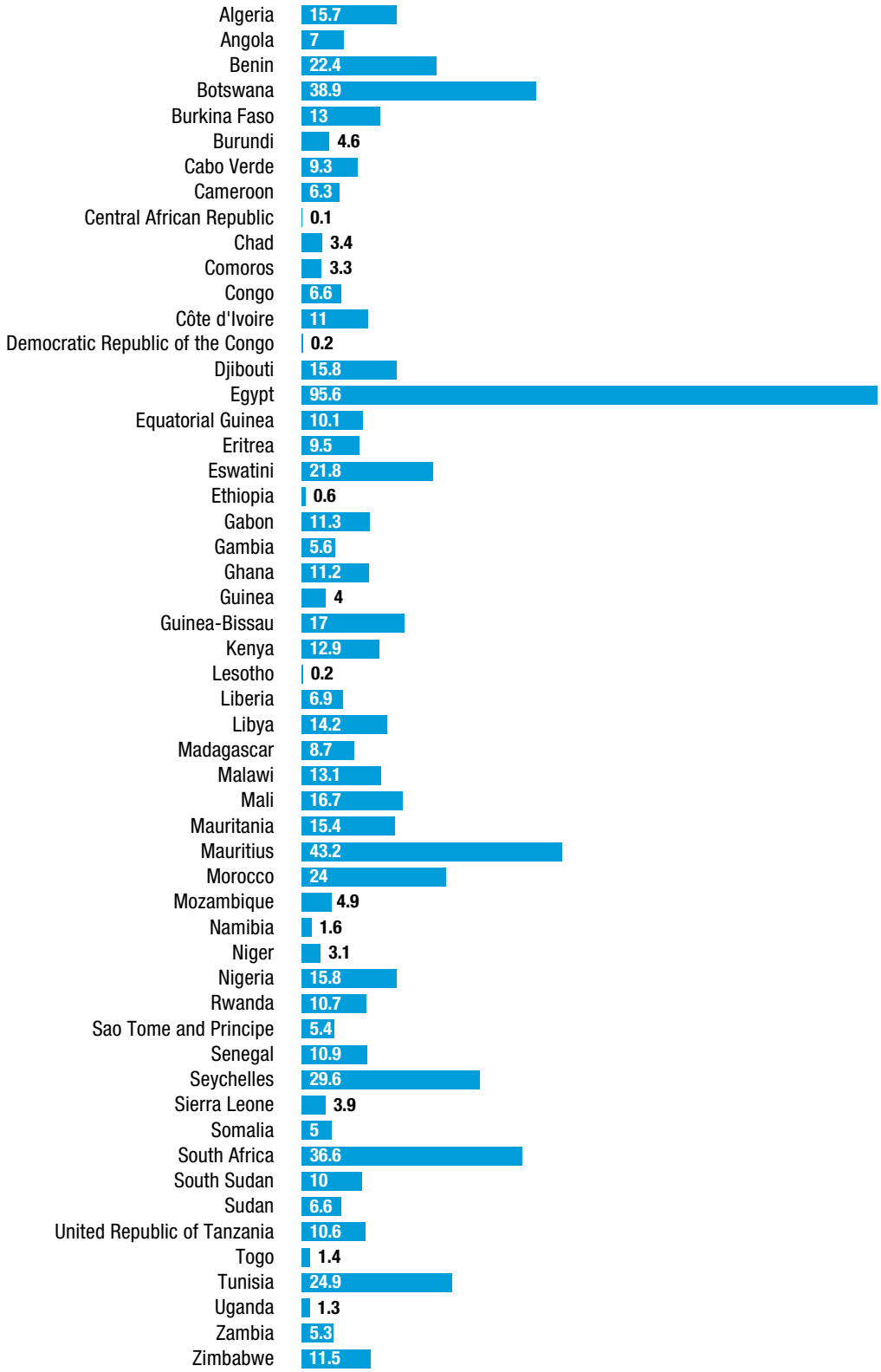
The countries in Africa that will be most vulnerable to shocks to global energy markets **are those with a lack of access to renewable energy sources**

Figure I. 12
Social vulnerability to polycrisis shocks, by country



Source: UNCTAD calculations, based on data from social progress index (Social Progress Imperative), normalized and inverted.
Note: Measure of social vulnerability based on the social progress index score inverted. The social progress index score for Seychelles is not available.

Figure I. 13
Energy vulnerability to polycrisis shocks, by country



Source: UNCTAD calculations, based on data from the World Development Indicators database (World Bank).
Note: Measure of energy vulnerability based on access to electricity (share of population), 2018-2022 average, normalised inverted.

Countries in Africa that are more dependent on fossil fuel energy and agriculture for livelihoods and exports **will be more exposed to adverse events from climate change**

Climate change vulnerability

Countries in Africa that are more dependent on fossil fuel energy and on agriculture for livelihoods and exports, that already have poorer environmental health and that are more subject to natural hazards will be more exposed to adverse events from climate change. How much they will be at risk also depends on their vulnerability or resilience. The degree of vulnerability or resilience is largely a function of policy choices. In the climate change domain, these would be the policies Governments have enacted to mitigate climate change impacts and adapt.

In terms of adaptation to climate change, the nature of the impacts of climate change is myriad, varied and heterogenous across countries. It is therefore necessary to take this into account when evaluating countries' responses. One source of heterogeneity is that some geographic areas are more subject to drought or constraining soil conditions. An example can be found among the smallholder farmers in the Sahel region and Southern and Eastern African regions, who are heavily dependent on rain-fed agriculture for food production, income generation and livelihoods, and are vulnerable to climate variability and frequent natural disasters (Simpson et al., 2023).

In countries that are more vulnerable to climate change, firms face rising costs of debt **as a result of restricted access to finance or low ESG investment**

Differences in financial systems can also help – or hinder – adaptation to climate change. For instance, using panel data covering 15,265 firms in 71 countries between 1999 and 2017, Kling et al. (2021) found that in countries that are more vulnerable to climate change, firms face rising costs of debt as a result of restricted access to finance. Partly, this is because climate change can negatively affect a firm's earnings and because "investors are increasingly considering environmental, social and governance performance of businesses before they make investment decisions" (Kling et al., 2021).

The most comprehensive measures of countries' climate change vulnerability that attempt to bring its multidimensional nature into perspective are the Global Data Lab vulnerability index, a "composite index designed to monitor and project socioeconomic vulnerability to climate change," and the Notre Dame Global Adaptation Initiative, country index of resilience or readiness to climate change (see table I.2). These two indices provide an overview of the responses of countries to their climate change exposures. The Notre Dame Global Adaptation Initiative index, for example, is calculated using 36 indicators covering sensitivity and adaptation to changes in food, water, health, ecosystem services, human habitat and infrastructure, considering climate change.

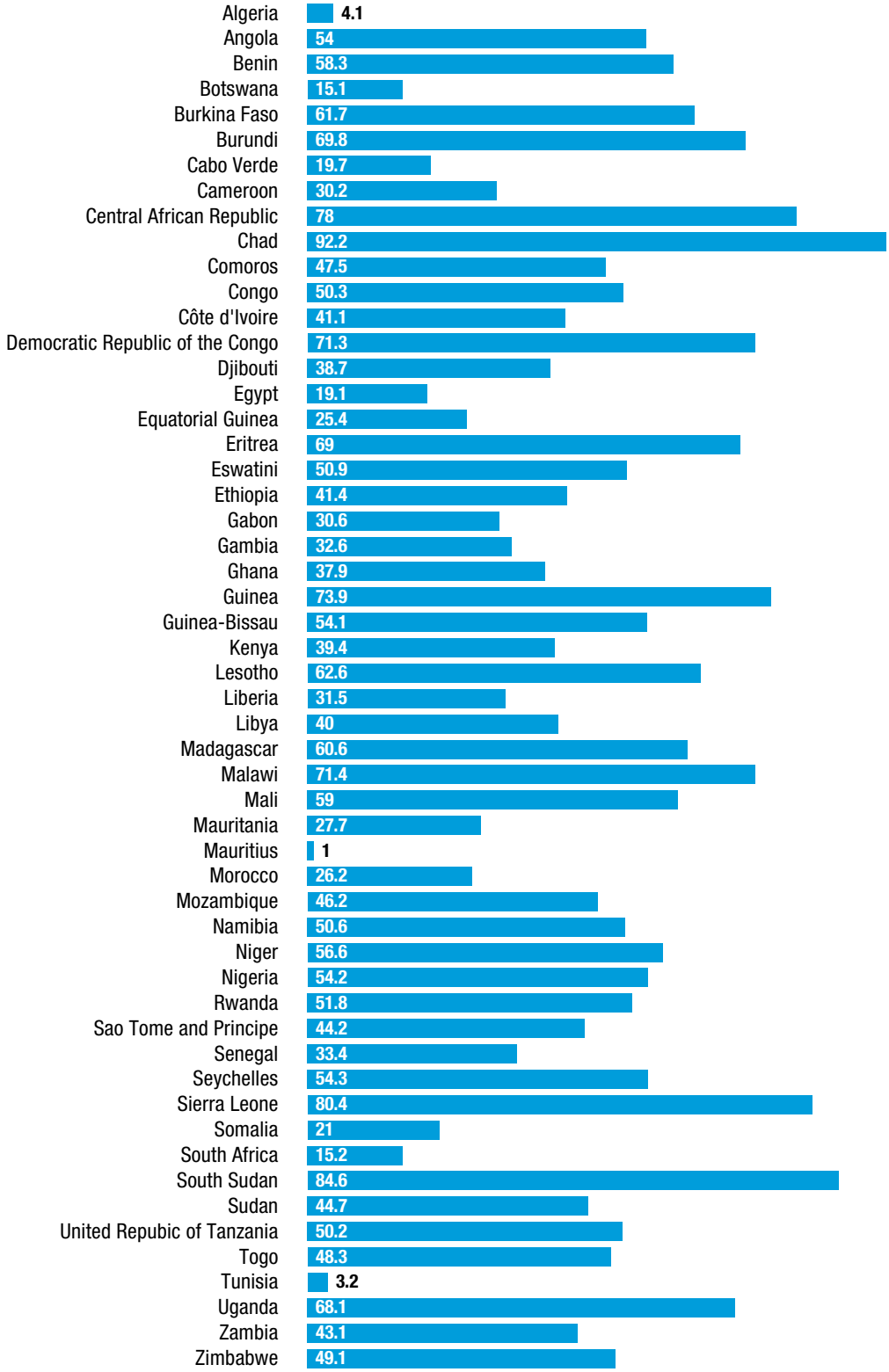
The countries in Africa most vulnerable to climate change impacts emanating from the global polycrisis shock are Chad, South Sudan, Sierra Leone, the Central African Republic, and Guinea (figure I.14). The low vulnerability of small island developing States across the climate change domain within the context of the polycrisis can be explained by good local coping, adaption and risk management abilities; sound institutional foundations; developed hard and soft infrastructure; and remoteness or insulation from the global shocks of the polycrisis. (see recent literature on remoteness (UNCTAD, 2024f)).

Priority areas for building bulwarks against risk

Table I.3 pinpoints the top two domains across which selected African countries are found to be most vulnerable to shocks emanating from the polycrisis. These are some of the key areas that could benefit from strengthened policy responses, to build resilience to overall risk in the economy.

This does not imply that a country should only address one source of vulnerability; it merely indicates that these are the components that show the highest value, that is, the domains in which the countries are most vulnerable. Table I.3 shows that the major domains where countries in Africa are vulnerable are either economic vulnerability or connectivity vulnerability.

Figure I. 14
Climate change vulnerability to polycrisis shocks, by country



Source: UNCTAD calculations, based on data from the global vulnerability index (Global Data Lab) and the Global Adaptation Initiative index (Notre Dame University).
Note: Measure of climate change vulnerability based on Global Data Lab global vulnerability index and Notre Dame Global Adaptation Initiative index.

It also indicates that some countries tend to be most vulnerable in the energy domain.

Considering the domains across which African countries are most vulnerable to shocks (as identified in table I.3) and the need to build bulwarks and resilience, the subsequent chapters of the report will delve into some of the underlying factors of vulnerability across some of the economic, connectivity and energy domains and the policy implications for reducing trade-related risks from the polycrisis in Africa.

Conclusion

In 2024, the world is in a polycrisis: a crisis that confronts humanity with mega-threats, which may be persistent. At the core of the polycrisis is the interconnectedness of economic, social, political and environmental systems. For countries in Africa, the polycrisis comes at a point when the project of economic development is incomplete. Trade and investment in these countries are, therefore, particularly at risk in the polycrisis.

While the internal factors determining the risk to trading and investment in Africa have been constantly known, the nature of external shocks, and hence the nature of exposure to adverse effects, has shifted significantly in the aftermath of the Second World War, when many countries in Africa achieved independence from colonial rule. In the 60 or so years after independence, the external crises affecting risks to investment and trade in Africa were limited to energy, debt and commodity price crises. In 2024, the polycrisis had come to affect the risk landscape of Africa. The external crises in energy, debt and commodity prices of previous decades are now compounded by crises or shocks that were unknown then, namely, technology shocks, demographic shocks, geopolitical shocks and climate shocks.

This chapter identifies six categories of entangled external shocks to which the polycrisis exposes countries in Africa. These are political, economic, demographic, energy, technology and climate change shocks. The extent to which these pose risks to trade and investment is argued to depend on a country's vulnerability to being harmed by such shocks if they occur. Less vulnerable, and hence more resilient, countries will be less harmed, and therefore, trade and investment will be less at risk. Six domains across which countries in Africa are particularly vulnerable were therefore identified. They are the economic, governance, connectivity, social, energy and climate change. These measures provide gauges of the areas where trade and investment (and, per implication, economic development) are ultimately most at risk, and across which domains, based on country-level heterogeneity.

As it was found that the major domains where countries in Africa are most vulnerable in the current context of the polycrisis shocks are either economic vulnerability or connectivity vulnerability, the remainder of this report will explore how they can best build bulwarks in these domains against risks to trade and capital flows to and across the continent.

When countries in Africa are less vulnerable, and hence more resilient, they will be less harmed by shocks from the polycrisis, and therefore, trade and investment in Africa will be less at risk

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Table I. 3
Major areas of vulnerability to polycrisis shocks, by country

	Top two vulnerability domains		Top two vulnerability domains
Algeria	Connectivity + Economic	**Libya**	Governance + Connectivity
Angola	Connectivity + Economic	**Madagascar**	Connectivity + Economic
Benin	Economic + Connectivity	**Malawi**	Energy + Connectivity
Burkina Faso	Economic + Energy	**Mali**	Economic + Connectivity
Burundi	Energy + Economic	**Mauritania**	Connectivity + Economic
Cabo Verde	Connectivity + Economic	**Mauritius**	Connectivity + Economic
Cameroon	Connectivity + Economic	**Morocco**	Economic + Connectivity
Central African Republic	Social + Economic	**Mozambique**	Connectivity + Energy
Chad	Energy + Social	**Namibia**	Connectivity + Economic
Comoros	Connectivity + Economic	**Niger**	Connectivity + Economic
Congo	Connectivity + Social	**Nigeria**	Economic + Connectivity
Côte d'Ivoire	Economic + Connectivity	**Rwanda**	Economic + Connectivity
Democratic Republic of the Congo	Connectivity + Energy	**Sao Tome and Principe**	Connectivity + Economic
Djibouti	Governance + Connectivity	**Senegal**	Connectivity + Economic
Egypt	Governance + Economic	**Seychelles**	Climate + Governance
Equatorial Guinea	Governance + Connectivity	**Sierra Leone**	Connectivity + Economic
Eritrea	Connectivity + Governance	**Somalia**	Governance + Connectivity
Eswatini	Connectivity + Social	**South Africa**	Governance + Connectivity
Ethiopia	Economic + Connectivity	**South Sudan**	Social + Energy
Gabon	Connectivity + Governance	**Sudan**	Connectivity + Governance
Gambia	Connectivity + Economic	**United Republic of Tanzania**	Economic + Connectivity
Ghana	Economic + Connectivity	**Togo**	Economic + Connectivity
Guinea	Economic + Connectivity	**Tunisia**	Connectivity + Economic
Guinea-Bissau	Economic + Connectivity	**Uganda**	Economic + Connectivity
Kenya	Economic + Connectivity	**Zambia**	Economic + Connectivity
Lesotho	Connectivity + Economic	**Zimbabwe**	Economic + Connectivity
Liberia	Connectivity + Energy		

Source: UNCTAD calculations.
Note: As the 2023 Social Progress Index score used to measure the vulnerability of African countries to polycrisis shocks in the social domain is not available for Seychelles, vulnerability to polycrisis shocks is measured and analysed in this chapter with respect to the economic, governance, connectivity, energy and climate change domains (see table I.2).