



Sub-Saharan Africa

| Regional Assessment |

November 9, 2023

Introduction

Even if sub-Saharan Africa did not possess some of the world's largest energy and food commodity supplies, it would still be a premier investment locale. Outside of India, most of the world fastest-growing populations lie in sub-Saharan Africa led by Sudan, the Democratic Republic of Congo (DRC), and Tanzania. Five of the 10 fastest-growing economies also lie within the region: Rwanda, Mozambique, Ethiopia, Kenya, and Cote d'Ivoire. The bulk of this population remains cut off from the technological expansion seen elsewhere in the world. While there are key infrastructure and financial reasons for this, many investors cannot justify the upfront costs to invest in a market where the customers have few financial resources, and their primary issue remains the difficult operating environment.

Insecurity is among one of the leading problems in the area. The Sahel and West African region has seen a spate of coups in recent years that have allowed al-Qaeda and Islamic State to spread across the region. This violence risks spreading further into key economies led by Nigeria, Cote d'Ivoire, Ghana, and Senegal. Sudan and DRC are also key growing economies wrecked by insecurity. These countries have ample rare-earth metals needed in the energy transition, as well as fossil fuels needed today.

Poor governance also threatens business operations, which is best demonstrated by South Africa. While it is normally the best operating environment on the continent, South Africa has been beset by debilitating power cuts and high levels of crime attributable to decades of poor governance. The political issues ravaging South Africa are also evident in its southern neighbors, which are ruled by political parties that have become increasingly corrupt in the years following independence.

A lack of trade infrastructure is also slowing Africa's growth. There is hardly any trade between African states, and many companies that sell to Africa find it cheaper and easier to source commodities that Africa possesses elsewhere. For example, Nigeria imports oil, despite possessing some of the world's largest oil reserves. A continent-wide free trade agreement would go some way towards alleviating these problems but has been delayed due to logistical and infrastructure issues. Similar dichotomies exist in the food and rare-earth metals trade. Sub-Saharan Africa is going to need more infrastructure investment in ports, roads, and rail networks, as well as investments in clean energy technology, to take advantage of its potential. All of these anticipated investments will have physical and cybersecurity risks, as demonstrated by Africa's growing mobile money and online banking sector. Sub-Saharan Africa has some of the highest usage of mobile money transfers in the world but also some of highest rates of cyberattacks on those platforms. Similar risks will threaten nascent energy and mining companies.

Key Threats



Physical security remains a risk across all sectors but particularly for mining and energy companies.



Financially-motivated threat actors could target commodities industries.



Cybercrime targeting mobile money and online banking is rampant.



Islamic terrorism is growing in Africa after declining in most other parts of the world.



Political instability will threaten mining and energy businesses.



Many of the fastest-growing economies have the highest risk for social unrest.

Key Findings

- The United States and Europe are planning new public-private investments across the continent.
- A continent-wide free trade agreement from 2021 could alleviate many of Africa's supply chain challenges if fully implemented.
- Some East African states have the highest proportion of mobile money transactions in the world.
- Cyber protections have not developed alongside mobile money and online banking advancements.
- Billions in new investments will likely target building new trade infrastructure, as well as extracting minerals needed in the energy transition
- Africa's youthful and growing population will likely be targeted by sectors that have maximized their growth elsewhere.



Sahel Coups Create Risks

A series of coups in the Sahel, most recently one in Niger in late July, have raised fears in neighboring countries—in particular the more developed West African littoral states of Nigeria, Benin, Togo, Ghana, and Cote d'Ivoire. These coups could be harbingers of broader regional democratic backsliding, may affect trading relationships, and raise major questions about the capacity of new regimes to secure their own borders and prevent violent spillover.

The effects of the Sahel coups are already being felt in the region's trade linkages. The coup in Niger was followed immediately by border closures from Nigeria and Benin, and Burkina Faso's land borders remain closed nearly two years after its most recent coup in January 2022.[1] These closures reduce economic cooperation between the countries and add to difficulties to shipping goods; for example, many of the shortest routes between Senegal and Cote d'Ivoire, Ghana, and Nigeria would pass through Mali. When the Economic Community of West African States (ECOWAS) imposed sanctions (including border closures on Mali) as a response to the military junta announcing an unacceptably far-off date for elections, local merchants were unable to access the products they typically sell. Merchants whose goods come from neighboring countries such as Senegal or Nigeria had their livelihoods impacted.[2]

For all three of the Sahel coup states, mineral exploitation is one of the few major industries. Burkina Faso and Mali are both large exporters of gold, whereas Niger's most valuable product is uranium. Gold mining alone constitutes 80 percent of Mali's exports by value.[3] These industries are key sources of local employment and foreign currency, which is otherwise in short supply for these underdeveloped countries. African states possess most of the world's gold, cobalt, uranium, and platinum, as well as untapped resources of copper and lithium—all of which are needed in the energy transition.[4]

Additional cross-border economic effects involve power supply. Immediately following Niger's coup, Nigeria stopped providing the country with electricity. Given that 90 percent of Niger's power supply came from Nigeria, this plunged the country into widespread blackouts, further hurting an already-weak economy.

Politicians in the littoral states have taken notice of the coups and sounded the alarm as a defense against a recurrence in their own nations. Most countries in West Africa have experienced at least one coup in their history; with a cost-of-living crisis bringing widespread dissatisfaction, there are real concerns over the prospect of another military-led overthrow. Authoritarian states are known to confiscate private operations for the benefit of their leaders or cronies, which presents an omnipresent risk for those operating a business in these environments. Bribery becomes a requirement of doing business, and lucrative business enterprises are held hostage to the whims of the leader.

The coup in Niger, like those in Mali and Burkina Faso, stems from the dangerous security situation in the Sahel. In Burkina and Mali, army colonels seized power with the promise that they could fight off terrorist attacks more effectively than the civilian governments they replaced. In Niger, the inciting incident was more personal—the head of the Presidential Guard was to be replaced and led a coup—but, once in power, the new president proclaimed similar things about maintaining internal security.

These proclamations, however, are harder to fulfill in reality. Sahelian countries are facing a tremendous security threat from terrorist groups fueled by ethnic tensions between more settled people in southern cities and nomadic migrants from northern deserts. Over the previous decade, local militaries have struggled to address the threat, and their governments have had to rely on international assistance, in particular from France, to make up the gap.

Now, all three countries (Burkina, Mali, and Niger) have taken strong anti-French positions. They have expelled not only cultural liaisons like news organizations but also French diplomatic staff and military forces that had heretofore assisted them in combating jihad. As a replacement, these nations have forged close ties with Russia and its Wagner Group, but, with Russian forces stretched thin by the war in Ukraine, it is unclear if they can serve as an equivalent stand-in for French capability.

If the combined efforts of local governments and Wagner forces are unable to curb jihadist attacks, the violence could spill over dramatically into neighboring countries. Nigeria, for example, already has a major issue with Islamic violence from Boko Haram in its northeast and would be hard-pressed to respond to increased incursions in its north or northwest, which could occur if Niger loses control of important territory.

Despite the obvious risks to operations in the region, it also has tremendous growth potential. Cote d'Ivoire is predicted to have one of the 10 fastest-growing economies worldwide in 2024, while Ghana was on the list in 2021 and 2022 and its telecommunications industry will grow 35 percent in 2024.[5]

Assessment:

- Democratic backsliding could bring leaders to power with strong opposition to certain countries; this has been seen particularly with France and the United States.
- If local militaries are unable to secure their own territories, violence could spill over into more developed littoral states and force greater resource expenditures to maintain security.
- Sanctions, border closings, and the like reduce the accessible market size in West Africa and cause additional business friction.
- Despite the risks, the region has some of the fastest-growing economies in the world.

FOOTNOTES

[1] <https://www.dfa.gov/travel/travel-advice/a-z-list-of-countries/burkina-faso/>
[2] <https://www.voanews.com/a/ecowas-lifts-sanctions-on-mali-burkina-faso-/6644141.html>
[3] <https://www.trade.gov/country-commercial-guides/mali-mining>
[4] <https://www.unep.org/regions/africa/our-work-africa>
[5] <https://www.bloomberg.com/opinion/articles/2023-10-30/africa-s-economies-exit-the-pandemic-era-second-to-none>



Nigeria Economic Reforms

Though Nigeria has been the largest economy in Africa since overtaking South Africa in 2018, many observers believe the country of more than 200 million inhabitants is still far from reaching its potential. Newly-elected President Bola Tinubu has embarked on an ambitious program of reform aimed at tapping that unreached potential, which could have dramatic positive or negative consequences.

The highlight of Tinubu's reforms is the removal of fuel subsidies. Nigeria is Africa's second-largest producer of oil (after Angola) but has little in the way of local refining capability. Most of its crude oil is sold to foreign refineries, from whom Nigerian businesses import finished products like fuel. The government formerly provided a subsidy to these importers, allowing them to maintain lower consumer prices in places like petrol stations. However, this subsidy ate away at much of the profit gained from crude oil sales, with the country spending as much as USD 500 million per month on this benefit. Upon his swearing-in, Tinubu declared an end to the subsidies, proclaiming that the money freed up would be "instead rechannel[ed]... into better investment in public infrastructure, education, health care and jobs that will materially improve the lives of millions."^[6]

However, the reforms (which also include freeing the exchange rate from an unsustainable peg and removal of the Central Bank Governor) have had immediate adverse effects on everyday Nigerians. Fuel prices rose due to the end of the subsidy, stressing household budgets as transit costs doubled—or worse. The exchange rate float has thus far backfired, with the naira not only dropping precipitously but also decoupling even further from the black-market rate. That makes it difficult for locals to import goods and also prevents needed foreign investment. Companies cannot use the official exchange rate due to the government's lack of dollars, leaving billions of dollars in naira-denominated earnings trapped in the country, unable to be exchanged.

> Assessment:

- Nigeria's economy has long been hamstrung by popular but costly policies. Despite this, it has been the largest economy in Africa for the last five years.
- President Bola Tinubu's attempts at reform aimed at unlocking Nigeria's additional promise seem to be stalling without having achieved their desired outcomes of fixing the broken system and making Nigeria more attractive to international investment.
- Businesses and investors should be cognizant of the difficulties in converting funds received in Nigeria to usable currencies like dollars.

African Continental Free Trade Agreement (AfCFTA)

The African Continental Free Trade Area (AfCFTA), a free trade zone covering the entire African continent, officially (but mostly symbolically) entered into force on January 1, 2021. Despite logistical barriers, states are working to implement the deal due to its promise of prosperity. If the zone can unite 1.2 billion Africans into a common market by reducing trade barriers, that market would be worth an estimated USD 3 trillion.^[7]

The deal's terms are that tariffs on 90 percent of goods will be phased out, with each country allowed to exempt 3 percent of goods. Tariff removals are done in stages over five, 10, or 13 years, depending on the countries and types of goods; thus, the agreement may not take on its full form until closer to 2035.^[8] Despite this potentially lengthy timeline, some improvements have already been implemented. The Pan-African Payment and Settlement System (PAPSS) is a method to allow deals to use any African local currency, removing the currency-exchange barrier that can serve as an impediment to trade. Facilitating this currency exchange could effectively make the entire continent a single market, much like Europe's Eurozone, without actually creating a unified currency.^[9]

If properly enforced, AfCFTA could ameliorate Africa's overreliance on goods imported from other continents, which are prompted by its high local tariffs. From 2016–2017, just 2 percent of trade in Africa was intra-African, compared to 47 percent in the Americas, 61 percent in Asia, 67 percent in Europe, and 7 percent in Oceania.^[10] The dependence on food and energy imports from outside the continent, despite local production being sufficient, has both worsened the cost-of-living crisis and stifled local economic growth.

Integrating economies via trade deals could have a major positive effect on Africa's growth. However, many other obstacles remain—including poor physical infrastructure such as road and railway networks, customs systems, security issues, and communication barriers.

> Assessment:

- AfCFTA enforcement is one of the key areas that could help African states unlock their potential. Africa has adequate amounts of food and energy commodities, as well as rare-earth metals needed in the energy transition.
- A lack of trade and technology infrastructure is holding back Africa's trade potential but presents an obvious place for foreign investment.

FOOTNOTES

^[6] <https://www.cnn.com/2023/06/01/energy/nigeria-ends-fuel-subsidy-intl-igs/index.html>

^[7] <https://www.bbc.com/news/world-africa-55334345>

^[8] <https://www.un.org/africarenewal/magazine/may-2023/afcfta-seizing-opportunities-prosperous-africa>

^[9] <https://papsf.com/>

^[10] <https://www.bbc.com/news/world-africa-55334345>



Kenya-led Regional Economic Growth

Countries in sub-Saharan Africa are recovering from the COVID-19 pandemic, climate shocks, the Russia-Ukraine War, and high inflation rates, which caused significant disruptions to global trade in recent years. African economies rely heavily on global trade to export goods, and regional trade is not common due to associated costs and a lack of necessary infrastructure to facilitate the ease of trade between neighboring countries. Inadequate cross-country railways, roads, energy facilities, and other infrastructure are among some of challenges hindering regional trade for African countries. However, recent global trade shocks have highlighted many economies' vulnerability to disruptions in global supply chains and the need of many countries to diversify their methods of trade.^[11, 12] East Africa is expected to be the fastest-growing region in the coming years, and many economies in the region have shifted to promoting regional growth—especially Kenya.

Many East African economies rely on agricultural exports for revenue, and more efficient farming methods have resulted in growth in the region. Despite the aforementioned challenges, African countries like Kenya and the DRC have experienced economic growth. Kenya is expected to grow by 5 percent in 2023—one of the fastest rates globally.^[13] Despite the aforementioned challenges, five of the 10 fastest-growing countries in the world are in Africa, led by the neighboring East African states of Kenya, Rwanda, and Uganda and the West African states of Ghana and Cote d'Ivoire. Further growth will continue to be facilitated by major infrastructural developments implemented by Kenya, such as the Karimenu II Dam Water Supply Project and Standard Gauge Railway, to allow for more regional trade.^[14]

Assessment:

- East Africa is set to experience the most growth in sub-Saharan Africa in the coming years, as evinced by Kenya; the region hosts promising investment opportunities.
- The results of the 2024 South African elections could signal a major shift in the country's foreign policy amid increasing discontent with the ruling party.
- All the nations of Southern Africa have been led by one party since independence. While those parties change leaders, they otherwise resemble dictatorships and are facing their biggest electoral challenges since independence. They also possess some of the biggest deposits of rare-earth metals needed in the energy transition.

Southern African Elections

The African National Congress (ANC) has maintained a majority rule in South Africa's National Assembly since 1994, but many observers believe that the ANC party will lose its majority in the upcoming 2024 general elections. This is part of a wider trend in the region where post-independence parties are facing the first genuine challenges. Support for the ANC Party has steadily waned in recent years.^[15] ZANU-PF in Zimbabwe and FRELIMO in Mozambique both held largely-fraudulent elections to maintain control in 2023, which led to widespread protests. Elections in Angola in 2023 saw the fiercest challenge for the ruling MPLA party since independence. Citizens have become disillusioned with the ruling parties amid high inflation rates, unemployment, and corruption scandals. Both South Africa and Mozambique have elections in 2024, which could destabilize the region.

The ANC Party secured over 70 percent of the popular vote in 2004, compared to about 58 percent in the last general election in 2019. Recent polls suggest that the party may receive even less than 50 percent of the vote for the National Assembly in 2024. South Africa's main opposition parties, the Democratic Alliance (DA) and the Economic Freedom Front (EFF), have received more support in recent elections; however, no major parties have secured enough popularity to dethrone the ruling ANC Party.^[16] The ANC is likely to win the most seats but not a majority, which could lead to a fractured government unable to deal with the infrastructure crisis that has debilitated South Africa's economy. South Africa's declining economy is largely a result of poor ANC governance that has debilitated its electricity, rail, and port networks, which are important for its export-dependent economy.

In the event that the ANC loses a majority in the 2024 elections, the DA or EFF party coalitions could shift South Africa's national politics.^[17] This includes South Africa's international relations with other countries and trade relations. If the ANC must form a coalition with other parties, such as the far left-leaning EFF, in response to losing a majority, South Africa may become friendlier with Russia or China as opposed to developing its established relationship with the United States. This could affect trade benefits for U.S. or Western-based companies. As one of Africa's largest economies, South Africa's internal politics have the potential to affect business operations on the continent.^[18]

Mozambique also holds general elections in 2024. In late 2023, it held municipal elections, which prompted weeks of protests after credible allegations of widespread fraud. The ruling FRELIMO party won all but one of Mozambique's 65 municipalities—despite evidence that they lost all of the major cities, including the capital of Maputo.^[19] Continued FRELIMO rule against the popular will will disrupt Mozambique's growing economy, which is predicted to be Africa's second biggest in 2024 on the back of natural gas and graphite production.

FOOTNOTES

[11] <https://www.brookings.edu/articles/trade-in-uncertain-times-prioritizing-regional-over-global-value-chains-to-accelerate-economic-development-in-east-africa/>
 [12] <https://www.worldbank.org/en/region/atr/eastern-and-southern-africa>
 [13] <https://www.reuters.com/world/africa/kenya-economic-growth-edge-up-this-year-world-bank-says-2023-06-07/>
 [14] <https://www.euromonitorj.com/article/east-africa---the-rising-economic-jewel-of-sub-saharan-africa>

[15] <https://www.fprl.org/article/2023/08/upcoming-national-elections-complicate-efforts-to-reset-us-south-africa-relations>
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 [19] <https://www.zitamar.com/national-elections-commission-announcement/frel-zitamar-daily-briefing-newsletter>



Cyberattacks

Africa's internet access is growing at a faster rate than many countries' ability to develop sound security infrastructure for their developing technologies. Governments, businesses, and individuals conducting business in sub-Saharan Africa are at a high risk of becoming a victim of a cyberattack due to these heightened vulnerabilities. An estimated 100,000 additional cybersecurity personnel are needed in sub-Saharan Africa's technology sector to close the current gap between security and technology. Backdoor, spyware, and exploitation attacks were among the most commonly-cited attacks throughout the continent.[20] The number of cyberattacks in Africa has increased exponentially in recent years, with Kenya reporting an 82 percent increase in attacks in 2022 compared with the previous year. Nigeria, South Africa, and Kenya are allegedly the biggest targets of cyberattacks in Africa.[21]

Mobile Money Transfers

Some of these vulnerabilities include a heavy reliance on online banking and mobile money transfer services, as compared to other banking methods. Many consumers in Africa rely on online banking and money transfers, buying cheap phone credits due to a lack of broadband access throughout Africa. This method requires users to use mobile applications to access financial services, which are at a significant risk of a cyberattack. According to a research study conducted by the Approov software company and Cylab-Africa initiative, cryptocurrency applications in Africa have the highest risk of leaking the personal information of their users due to low levels of security. However, most finance and payment/transfer apps were at least a medium risk of leaking information, as only around 5 percent of the more than 220 applications investigated *did not* reveal personal or sensitive information. Businesses that must rely on these applications to conduct operations in Africa are at a significant risk of compromising data.[22]

Potential for Growth

The lack of security infrastructure in Africa's growing technology industry will be costly—halting its digital economy, which is expected to surpass USD 150 billion in 2025.[23] High levels of investment in cybersecurity are needed in Africa to ensure sustainable growth in the continent's technology sector, as it currently incurs about USD 4 billion in annual losses. Additionally, sub-Saharan Africa's young population has the ability to fulfill the gap in meeting the need to supply cybersecurity professionals, if initiatives to enhance the continent's cybersecurity sector are successful.[24] Cyberattacks have the ability to impact the functioning of critical infrastructure, disrupt supply chains and websites, and leak private information, along with a whole host of other devastating consequences. A growing security infrastructure is necessary to minimize the risk to Africa's cybersecurity sector.[25]

Kenya

Since 2022, Kenya has experienced more than 880 million cyberattacks. In July 2023, the hacktivist group Anonymous Sudan claimed responsibility for a cyberattack targeting 5,000 government services in Kenya that caused significant disruptions, such as the temporary halting of visa and passport services.[26] Kenyan citizens also primarily access the internet through mobile services via the M-PESA mobile app for daily transactions. The Kenyan-based app processes about USD 633 million daily and spans about seven countries. As previously mentioned, mobile access to banking, money, and other financial services increases the cybersecurity risk for those operating in that environment. The government continues to roll out initiatives to develop the country technologically by increasingly public WiFi access and digitized government services. Increased internet penetration also increases the country's overall vulnerability to cyberattacks, as Kenyans become increasingly reliant on the internet.[27] Kenya's fast-developing technology sphere and lack of security parameters has made it one of the most attractive targets for threat actors in Africa.

South Africa

South African officials reported a 62 percent increase in cyberattacks over the past year. The country also suffered a major ransomware attack in 2021 on the state-owned Transnet company that heavily disrupted major ports, including the ports of Durban, Ngqura, Elizabeth, and Cape Town.[28] South Africa's lack of investment in security infrastructure to protect its technological sphere, lack of cybersecurity education, outdated legislation, and its position as an economic hub of Africa make it susceptible to cyber attacks. However, South Africa is working toward strengthening its cybersecurity sector through multiple programs, such as education initiatives and regulation.

> Assessment:

- Sub-Saharan Africa's security infrastructure is inadequate for the size of its technology industry, making a majority of its businesses vulnerable to cyberattacks.
- Nigeria, South Africa, and Kenya are among the biggest targets of cyberattacks in Africa.

> Recommendations:

- Businesses should utilize reliable third-party vendors to ensure their online presence and platforms are secure.

FOOTNOTES

[20] [hXXps://cybermagazine.com/cyber-security/cyber-attack-increase-across-africa-threatens-digital-growth](https://cybermagazine.com/cyber-security/cyber-attack-increase-across-africa-threatens-digital-growth)
 [21] [hXXps://www.darkreading.com/dr-global/bolstering-africa-cybersecurity](https://www.darkreading.com/dr-global/bolstering-africa-cybersecurity)
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[26] [hXXps://www.africanews.com/2023/10/03/kenya-hit-by-record-880m-cyber-attacks-in-a-year/](https://www.africanews.com/2023/10/03/kenya-hit-by-record-880m-cyber-attacks-in-a-year/)
 [27] [hXXps://carnegiendowment.org/2023/10/12/when-rubber-meets-road-cybersecurity-and-kenya-s-digital-superhighway-pub-90766](https://carnegiendowment.org/2023/10/12/when-rubber-meets-road-cybersecurity-and-kenya-s-digital-superhighway-pub-90766)
 [28] [hXXps://www.osac.gov/Content/Report/686e23b4-8881-4cb7-825f-1c598469bc7a](https://www.osac.gov/Content/Report/686e23b4-8881-4cb7-825f-1c598469bc7a)



Technology and Income Inequality

For the fourth year in a row, Africa is projected to have half of the 10 fastest-growing countries in the world. Projections for 2024 anticipate Rwanda again leading with 6.8 percent growth, followed by Mozambique at 6.4 percent, Cote d'Ivoire at 6.2 percent, and Ethiopia and Uganda at 5.5 percent. In 2020, it was Uganda, Cote d'Ivoire, Egypt, Ghana, Rwanda, and Kenya. The same countries made the list 2021-2022, except Egypt.[29]

The best-performing sector will be telecommunications. The top 15 telecom companies are expecting growth of 18 percent in 2023, followed by 9 percent growth in the next two years. Continent-wide, telecom's annual growth is projected at 11 percent, compared to 3 percent globally. Other industries will also grow. Financial services are expected to grow by 14 percent and consumer goods by 10 percent.[30]

Part of this growth is due to the late development cycle. Telecommunications and financial services firms largely avoided Africa while they developed markets elsewhere, but now those places have reached saturation. This is promising for firms seeking to operate in Africa, where the young and growing population is still largely underserved, and growth can be expected for years to come. Telecommunications and financial services firms have shown so much growth because they allow underserved Africans to make up for a lack of other services. For example, mobile payments and online banking are popular because they can be done via a mobile phone, which is a necessity since the continent largely lacks physical bank branches and fiber internet connections. Cheap mobile internet allows mobile apps to replace many of these services.

APPENDIX A:

ZeroFox Intelligence Probability Scale

All ZeroFox Intelligence products leverage probabilistic assessment language in analytic judgments. Qualitative statements used in these judgments refer to associated probability ranges, which state the likelihood of the occurrence of an event or development. Ranges are used to avoid a false impression of accuracy. This scale is a standard that aligns how readers should interpret such terms.

Almost No Chance	Very Unlikely	Unlikely	Roughly Even Chance	Likely	Very Likely	Almost Certain
1-5%	5-20%	20-45%	45-55%	55-80%	80-95%	95-99%

APPENDIX B:

Traffic Light Protocol for Information Dissemination

TLP: RED

HOW IT IS USED

Sources may use TLP: RED when information cannot be effectively acted upon by additional parties and could lead to impacts on a party's privacy, reputation, or operations if misused.

HOW IT IS SHARED

Recipients may NOT share TLP: RED with any parties outside of the specific exchange, meeting, or conversation in which it is originally disclosed.

TLP: AMBER

HOW IT IS USED

Sources may use TLP: AMBER when information requires support to be effectively acted upon but carries risks to privacy, reputation, or operations if shared outside of the organizations involved.

HOW IT IS SHARED

Recipients may ONLY share TLP: AMBER information with members of their own organization and its clients, but only on a need-to-know basis to protect their organization and its clients and prevent further harm.
Note that
TLP: AMBER+STRICT restricts sharing to the organization only.

TLP: GREEN

HOW IT IS USED

Sources may use TLP: GREEN when information is useful for the awareness of all participating organizations, as well as with peers within the broader community or sector.

HOW IT IS SHARED

Recipients may share TLP: GREEN information with peers and partner organizations within their sector or community but not via publicly accessible channels.

TLP: CLEAR

HOW IT IS USED

Sources may use TLP: CLEAR when information carries minimal or no risk of misuse in accordance with applicable rules and procedures for public release.

HOW IT IS SHARED

Recipients may share TLP: CLEAR information without restriction, subject to copyright controls.

About ZeroFox

ZeroFox (Nasdaq: ZFOX), an enterprise software-as-a-service leader in external cybersecurity, has redefined security outside the corporate perimeter on the internet, where businesses operate and threat actors thrive. The ZeroFox platform combines advanced AI analytics, digital risk and privacy protection, full-spectrum threat intelligence, and a robust portfolio of breach, incident, and takedown response capabilities to expose and disrupt phishing and fraud campaigns, botnet exposures, credential theft, impersonations, data breaches, and physical threats that target your brands, domains, people, and assets. Join thousands of customers—including some of the largest public-sector organizations, as well as finance, media, technology, and retail companies—to stay ahead of adversaries and address the entire lifecycle of external cyber risks.

See ZeroFox in action

zerofox.com/demo | zerofox.com

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sales@zerofox.com | 855.736.1400

FOOTNOTES

[29] <https://www.bloomberg.com/opinion/articles/2023-10-30/africa-s-economies-exit-the-pandemic-era-second-to-none>

[30] *Ibid.*