

Development prospects for the Horn of Africa countries to 2040

Special Report

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Last updated 07 June 2023 using IFs v7.63

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Summary

- The Horn is one of the main regions producing refugees and internally displaced people globally. [Jump to Introduction](#)
- Governance failure, political exclusion and ethnic and religious-based discrimination hinder stability and development. [Jump to Governance and security in the Horn](#)
- Widespread insecurity, frequent droughts and limited livelihood opportunities keep many in conditions of poverty and vulnerability. [Jump to Poverty and income inequality](#)
- On the current trajectory, no Horn countries are on track to achieve the Sustainable Development Goal of eliminating extreme poverty by 2030. [Jump to Poverty and income inequality](#)
- The region has an extraordinarily young population, with nearly 60% of these youth in Ethiopia. Low schooling, a dysfunctional health system and poor infrastructure hinder human development. [Jump to Demographics](#)
- Most economic activities are in Sudan and Ethiopia, which account for 89% of the region's total GDP. [Jump to Economy](#)
- Agriculture and pastoralism are the main sources of livelihood. The region is highly food insecure, owing to recurrent droughts, natural disasters and conflicts. [Jump to Agriculture and climate change](#)
- Exports from the Horn are poorly diversified. China and the Gulf countries are the region's key trade partners. [Jump to International trade](#)
- Aid is the largest source of external finance, particularly aid and investment from the Gulf countries. [Jump to Foreign direct investment, aid and remittances](#)
- Despite its manifold challenges, the Horn is one of the world's most important geostrategic sites. [Jump to Background](#)

Recommendations [Jump to Conclusion](#)

At the regional level, Horn leaders should:

- address border disputes, such as that over the Nile River, to create a favourable environment for development.
- speed up regional integration and refrain from interfering in neighbours' internal disputes.
- collectively address cross-border environmental risks.

At the national level, Horn governments should:

- improve security through better governance and inclusion.
- tackle corruption, strengthen the judiciary and provide wider access to justice.

- integrate border communities into welfare and service delivery programmes and combat ethnic- and religious-based discrimination.
- take into account the role of the diaspora in peacebuilding and state-building.
- scale up agricultural production and food access to reduce poverty and malnutrition.
- increase expenditure on health, education, water and sanitation, and rural development.
- work with religious leaders to advocate for family planning and improve female education to reduce fertility and accelerate the demographic transition.
- Harness the huge renewable energy potential to accelerate electrification, especially in rural areas.
- enhance connectivity by expanding road infrastructure and opening the information and communications technology sector to foreign investors and competition.
- speed up economic diversification to create employment and livelihood opportunities, and a dynamic private sector.

The Intergovernmental Authority on Development and the African Union should:

- coordinate efforts to audit border disputes and develop an operational mechanism to address them.
- engage in political dialogue with all stakeholders to help them define their goals, programmes and cooperative strategies.

Introduction

The Horn of Africa, which for the purpose of this study is defined as the region comprising Djibouti, Eritrea, Ethiopia, Somalia, Sudan and South Sudan, covers about 4.3 million square kilometres. It has a population of about 190 million people.

These countries are socially, economically and ecologically diverse and, at the same time, are related geographically, historically and demographically.[1] They are also all members of the Intergovernmental Authority on Development (IGAD), an eight-country regional bloc in Africa with ambitions to embark on regional integration.

The Horn of Africa is known for its long history of armed conflict, large influxes of refugees, and poor state capacity and governance. It is also one of the world's poorest regions, where weak infrastructure, widespread insecurity, frequent droughts and limited livelihood opportunities condemn many people to poverty and vulnerability.

Although growth rates in the region have, overall, been robust in recent years, countries face numerous major development challenges. They rank near the bottom on the Human Development Index—a summary measure of human development in three basic dimensions: health, education and a decent standard of living. According to the 2019 Human Development Report, the Horn nations rank from 168th for Sudan to 189th for South Sudan.[2]

The livelihood of the majority of the population in the region highly depends on rain-fed agriculture and pastoralism. However, farming opportunities are only available to a small part of the region, as 70% of the area is made up of arid and semi-arid lands.[3] Competition to access these limited natural resources is thus a major factor fuelling conflicts and insecurity in the region.

Some progress has been made in socio-economic terms, especially in Ethiopia, which has a track record of high economic growth, major improvements in infrastructure and poverty reduction. But the Horn of Africa faces many development challenges that necessitate bold action from all stakeholders.

This report uses the International Futures (IFs) modelling platform to analyse the current state of development and the most likely development pathway of the Horn countries to 2040. The presentation of the Current Path forecast (see Chart 1) is followed by the development of scenario components. These are then combined into a comprehensive scenario where the countries and the region are able to get on a sustainable and peaceful development trajectory.

Chart 1: Comparison groups

To create comparisons across countries and regions, the report uses the World Bank's 2020/21 classification of economies into low-income, lower-middle-income, upper-middle-income and high-income groups.[4] With the exception of Djibouti, which is lower-middle, the rest of the Horn countries are classified as low-income.

Where Horn countries are compared to the averages for low- and lower-middle-income Africa or globally, they are excluded from these groups.

Background

The Horn of Africa has experienced many social, political and economic transformations since independence, resulting in military coups, inter-state and civil wars, revolutions, ethnic and religious disputes, and complex humanitarian crises, among others. Every country in the region has faced at least one civil war during the postcolonial era.

The Horn of Africa has also experienced more inter-state wars than any other region in Africa, most significantly Ethiopia-Somalia, 1977–78 and 2006–2009; Ethiopia-Eritrea, 1998–2000; and Eritrea-Djibouti, 2008.[5]

These inter-state wars were fought mostly over territorial and border disputes. The poorly demarcated borders between competing pre-colonial empires, and subsequently defined by colonialists, have played a major role in these conflicts. And they continue to resonate—e.g. the Kenya-Somalia dispute on their maritime border in the Indian Ocean, thought to be rich in oil and gas reserves,[6] and the Sudan-Ethiopia al-Fashaga triangle farming dispute.

The region is not only plagued by inter-state tensions but also intra-state conflicts and other local and national grievances. There is also a host of identity politics such as the crisis in Darfur, between clans in Somalia, within South Sudan, and among various ethnic groups in Ethiopia.

Violent conflicts and military coups are political tactics that many leaders in the region have used to come to power and weaken their opponents. Countries in the Horn of Africa frequently interfere in their neighbours' disputes either by sending troops directly or by supporting rebel groups. Some of these disputes have resulted in national borders being redrawn in the region,[7] such as Eritrea in 1993, South Sudan in 2011, and Somaliland's ongoing attempts to separate from Somalia.[8]

There are also ethnic overlaps and affinities that transcend national borders (e.g. the Afars in Djibouti-Eritrea-Ethiopia, Somalis in Somalia and Ethiopia and other transnational ethnicities in the region). Such overlaps serve as a conduit for a significant amount of informal trade and are often seen as a potential source of insecurity by state authorities.

The borderland populations in each of these nations are also generally economically and politically marginalised. Consequently, this ethnic overlap in poorly governed spaces is often used by neighbouring countries as an entry point for cross-border destabilisation.[9]

War, conflict and insecurity, famine, environmental factors such as droughts, governance failures, and lack of economic conditions cause substantial displacement within countries and across borders. This makes the Horn one of the main regions producing refugees and internally displaced people globally.

Specific border areas such as the Sudan-Ethiopia, South Sudan-Uganda and Somalia-Ethiopia borders have been in an intermittent state of crisis with the back-and-forth movements of refugees for the past 40 years.[10] About 8.5 million forcibly displaced people, including over six million internally displaced people and around 2.5 million refugees and asylum seekers, are currently hosted within the Horn of Africa.[11] Ethiopia, for example, is the second largest refugee-hosting country in Africa, after Uganda, while Sudan is the third largest country of asylum in Africa.[12]

The current unrest in Ethiopia's Tigray region is, for example, causing substantial numbers of refugees to cross into Sudan, further increasing the economic and demographic pressure on the host communities. The COVID-19 pandemic has further compounded the pre-existing difficulties in the region, including food insecurity, extreme poverty, social unrest, security concerns and political instability.[12]

Despite its manifold challenges, the Horn of Africa is one of the most important geostrategic sites in the world given its proximity to the trade artery that runs from the Indian Ocean to Europe via the Red Sea and the Suez Canal, passing through the Strait of Bab el-Mandeb between Djibouti and Yemen.[13]

The combination of economic, political and security interests of foreign powers in the region has led to a proliferation of foreign military bases, often accompanied by the provision of military and development assistance.[14] Thus the United States (US) installed a military base in Djibouti after the 9/11 attacks to prosecute its war against terrorism (al-Qaeda and al-Shabaab). The first overseas military base of China since the Second World War is also in Djibouti as the country has moved to protect its growing investments in Africa.

Together with a French military base (that includes troops from Germany), tiny Djibouti with a population of less than a million people is also home to military bases from Italy, Japan and Spain. The country relies heavily on the associated rents. And in December 2020, Russia signed a deal with Sudan to establish a military base in Port Sudan on the Red Sea coast.

The Horn of Africa seems to have ‘become a laboratory where different foreign policy approaches and aid modalities meet.’[15] Middle East countries, particularly the Gulf countries (Saudi Arabia, United Arab Emirates (UAE), Kuwait and Qatar), and Turkey have a long history in the Horn of Africa. Turkey’s presence in the region dates back to the Ottoman Empire. But in the modern era its engagement in the region dates to 2011, with Somalia as the entry point.

Gulf and Turkish assistance, including direct budgetary support, humanitarian aid, infrastructure development, and funding for Somali security forces, has been critical for the Somali people. Turkey has established its largest overseas military facility in Mogadishu to assist with training for the Somali National Army. The country has also significantly increased trade, investment and aid in Sudan and Ethiopia. For instance Ethiopia’s trade with Turkey increased by a hundredfold, from US\$40 million in 2003 to about US\$4 billion in 2013.[16]

The Arab Gulf states have also in recent years increased their influence in the Horn of Africa. From 2000 to 2017, they collectively made investments worth approximately US\$13 billion and provided official development assistance (ODA) amounting to US\$6.6 billion[17] (see Chart 2).

The challenge is that the Horn governments face constant pressure to pick sides in geopolitical rivalries often between the Gulf Arabs and Iran or among the Gulf states. For instance Eritrea, which used to support Qatar, has switched its orientation to the UAE, and now hosts a military base that is used to prosecute the war in Yemen. The European Union (EU) and Russia also have a critical influence on a number of Horn countries such as Ethiopia and Sudan, among others.

This external involvement in the region means that the Horn countries are often instrumentalised against each other instead of in pursuit of collective security. They politically back different Gulf states or serve foreign interests, undermining the prospects for regional economic integration and development. In the process, the rivalries among the Gulf powers—particularly between the UAE on the one hand and Qatar and, by extension, Turkey on the other—have fuelled instability in Somalia.[18]

Chart 2: Summary of Gulf interests and policy instruments in the Horn of Africa

	Saudi Arabia	United Arab Emirates	Qatar	Kuwait
Main partners in the Horn of Africa	Sudan, Ethiopia	Eritrea, Somaliland, Ethiopia	Sudan, Somalia, Ethiopia	Sudan

Main political interest	Isolating Iran	Isolating Iran, pushing back against political Islam	Leverage relating to Saudi Arabia	Regional stability
Main economic interest	Food production	Regional trade, port expansion	Financial diversification	Food production
Key policy instruments	Budgetary support Multilateral funds	Budgetary support	Central Bank of Qatar, Qatar Foundation	Bilateral and multilateral development funds

Source: Adapted from J Meester et al, *Riyal Politik, The political economy of Gulf investments in the Horn of Africa, CRU Report, Netherlands Institute of International Relations, Clingendael, 2018.*

Governance and Security in the Horn

Good governance and security are key to economic progress and poverty reduction. Greater security at the national level creates an enabling environment for investment, economic activity and social stability. It also creates conditions in which governments can pursue effective sustainable development strategies.

In the IFs system, governance is conceptualised along three dimensions—security, capacity and inclusion—reflecting the traditional sequencing of the state-formation process. The security dimension measures the probability of intra-state conflict and the general level of risk.

The second dimension, capacity, is related to government revenue, corruption, regulatory quality, economic freedom, and government effectiveness. The third dimension, inclusiveness, measures the level of democracy and gender empowerment. Chart 3 shows the position of each Horn country along these three dimensions.

What is evident from Chart 3 is that Djibouti does best in each dimension of governance compared to its peers. It is followed by Ethiopia in terms of security and governance capacity. Somalia is the most challenged country in the region in terms of security while Sudan performs worst in inclusion.

Despite significant progress, bad governance and an increasingly unstable security situation are characteristic of most Horn of Africa countries. For many years the fragility and violence of South Sudan and Somalia coexisted alongside the apparent stability and rapid development of Ethiopia until that too descended into violence. Sudan is now on a rocky political transition while the isolationist approach of Eritrea continues.

According to the 2020 Ibrahim Index of African Governance, there is an overall decline in civic and democratic space and rights in the Horn of Africa that appears to have been exacerbated by the COVID-19 outbreak. Among other effects, Ethiopia postponed parliamentary elections that were supposed to take place in 2020 to June 2021.

At the country level, this index shows that Ethiopia is the only country to have improved in all 16 sub-categories of

governance over the period 2010–2019, while Somalia remains bottom for the 10th consecutive year with a score of 19.2 out of 100.[19] Somalia, South Sudan and Eritrea have the worst governance in Africa.

Since the fall of the Siad Barre regime and the complete collapse of state institutions in 1991, Somalia has been without a viable functioning central government and represents one of the modern world's most protracted cases of statelessness.[20] Despite many domestic initiatives and the efforts of the international community, Somalia is still deeply affected by decades of internal conflict, which has largely destroyed the country's security and judiciary institutions. Since 2012, Somalia has had an internationally recognised government but with limited capacity to provide security throughout the country.

The federal government, which depends on 20 000 troops of the African Union Mission to Somalia and other international powers to provide law and order and exercise territorial control, faces numerous challenges both internally and externally. Al-Shabaab effectively controls many rural areas and the supply routes to many towns.

In a country dominated by the management of community affairs through clan and sub-clan arrangements, efforts by neighbours and the international community to introduce elections (and democracy) as a solution to its intractable lack of central authority have repeatedly been thwarted. Elections were originally to occur in November 2020, but Somali political leaders at federal and state level have struggled to agree on a timetable and the process and composition of the electoral body. This despite the fact that President Mohamed Abdullahi Mohamed's term expired in February 2021.

On 12 April 2021, the Somalia Lower House of Parliament declared a two-year extension—but the move was met by serious opposition from key regions of Somalia and the international community. Factional tensions and violence ensued before the president agreed, in April 2021, to return to a commitment made in September 2020 to initiate dialogue and begin preparations for elections without further delay.

The rampant corruption and the absence of the rule of law have weakened state authority in Somalia. The country is ranked as the world's most corrupt globally by Transparency International. Corruption, clan-based patronage, and misappropriation of public funds continue unabated and are particularly pronounced in government procurement.[21] Building inclusive political structure at the federal and state levels and addressing the security threat posed by al-Shabaab are essential for Somalia's progress towards political stability, good governance, economic progress and poverty alleviation. At the time of writing, presidential elections are scheduled for October 2021.

Born a decade ago after years of strife, South Sudan experienced a devastating civil war between 2013 and 2018. Thanks to a peace treaty negotiated in 2018, the war has subsided. The main protagonists, Salva Kiir Mayardit and Riek Machar, agreed to form a unity government, but the situation remains fragile as the pact could again crumble as it has previously.[22] Aside from a recent ceasefire, little else has been achieved, and mistrust among the various parties persists. The governance and security situation in South Sudan is not much different from its neighbour Somalia.

South Sudan has the second worst governance in Africa after Somalia, according to the Ibrahim Index of African Governance, and rates similarly regarding corruption. For example, one year after independence in 2012, the ruling elites stole an estimated US\$4 billion of public money.[23] The officials were never prosecuted, as legal and anti-corruption systems are weak.[24] A mix of political, economic and military dominance makes it difficult to investigate corruption and prosecute influential players.[25]

Insecurity is widespread as the South Sudanese state's monopoly over power is challenged with only a semblance of government control evident in small parts of the country. The country's political space is dominated by the military due to

its long history of armed liberation struggle.[26] In addition to its limited capacity, the government is unable to protect the civilian population since its national police, security forces and other armed actors are themselves involved in infighting and large-scale abuses of human rights.

Overall, South Sudan's governance institutions are dysfunctional. The lack of consensus among the national and local elites (political and military), who prioritise their own interests instead of the needs of the population, continues to threaten the country's stability, security and development.

Eritrea lacks functional democratic institutions. It has not had a national election since it gained independence from neighbouring Ethiopia in 1991, and it is governed by an authoritarian regime that is frequently condemned by the United Nations (UN) for human rights violations. The country is considered a 'gulag' state where civil rights and freedom of expression and assembly are non-existent.

Human Rights Watch reports that: 'Eritreans are subject to arbitrary arrest and harsh treatment in detention. Eritrea has had no national elections, no legislature, no independent media and no independent non-governmental organisations (NGOs). Religious freedom remains severely curtailed.[27]

The ruling People's Front for Democracy and Justice is the only political party allowed to exist in the country, and the president and a small ruling elite appear to steer political and economic affairs according to their specific interests. These realities, including the mandatory military training and national service, have depopulated the country as young people seek to emigrate.

Eritrea has become the African country with the highest number of migrants. There is also no separation of powers or checks and balances as Eritrea has not implemented its constitution and its National Assembly does not meet in a country fully dominated by President Isaias Afwerki. This has led to massive corruption, especially in civil administration and the military.[28] The concentration of power around the president and his dominance of all aspects have weakened the country, as there is no certainty as to how the state will sustain itself in case of his eventual exit. In sum, the lack of democratic transformation and militarisation of Eritrean society constitute a significant hindrance to inclusive development.

Compared to its peers in the Horn of Africa, Djibouti, which hosts a multitude of foreign military bases, enjoys relative peace and stability and regularly goes through the motions of elections. Despite some latent clan-level grievances, there are no separatist or insurgent movements, and the authority of the government is established nationwide.

However, graft is widespread and public officials are rarely held accountable for their actions. The judiciary is inefficient and corrupt and lacks independence; only individuals deemed disloyal or acting against the president's political and economic interests are prosecuted for corruption.[29]

Although the separation of powers is enshrined in the constitution, the president has concentrated all the decision-making power in his hands. Recent calls from al-Shabaab for attacks on 'American and French interests' in Djibouti do, however, indicate that the country may not be insulated from trends elsewhere in the region. The last attack, in 2014, targeted a restaurant frequented by foreigners.[30]

Under former president Omar al-Bashir, political and economic corruption as well as US sanctions prevented Sudan from optimally benefiting from its abundant oil resources. Graft undermined the government's capacity to maintain its strategic priorities and to implement its policies.[31] Poor governance, US sanctions, civil war and the loss of revenue from oil due

to the independence of South Sudan led to economic woes such as galloping inflation and currency depreciation, among others. In reaction to the economic hardships, nationwide anti-government public protests led to the removal of al-Bashir in April 2019 and ushered in change.

The current transitional government is tasked mainly with improving governance by repealing laws restricting freedom, establishing the judiciary's independence and rule of law, reforming government structures to ensure its equity, combating corruption and achieving lasting peace with armed groups.[32] Since 2003, violence in Darfur, its most unstable region, has left at least 300 000 people dead and 2.5 million displaced, according to the UN.

Following the Juba Peace Agreement that was signed on 3 October 2020, the new government includes ministers from former rebel groups. This augurs well for security and stability as well as inclusive governance in Sudan, but the ravages of COVID-19 severely constrain progress. Sudan has subsequently also been removed from the US list of State Sponsors of Terrorism, leading to the lifting of sanctions on the country; and a new cabinet based on the peace agreement now includes most of the former armed movements. The Declaration of Principles calls for freedom of religion and cultural identity in Sudan, removing another source of exclusion.

Overall, the brief summary above explains why the Horn region scores lowest among African regions in terms of political participation, security and stability, and rights indicators. The poor management of diversity (political views, gender and identity) constitutes a major source of popular grievance and instability.

Improving governance and building an inclusive national political system that reflects the diversity in each country and effective management of the various intra-state conflicts is crucial for peace, stability and development, as are efforts to ensure that national conflicts do not engulf the region. These include the filling of the Grand Ethiopian Renaissance Dam and the challenges that reduced downstream water flows in the Nile River present to Sudan and Egypt. They also include the regionalisation of Ethiopia's war in Tigray, clashes around al-Fashaga, between Sudan's eastern province of Al-Qadarif and Ethiopia's Amhara regional state, and unresolved border issues between Djibouti and Eritrea. The disagreement between Sudan and South Sudan on Abyei and the maritime boundary dispute in the Indian Ocean between Somalia and Kenya also feature.

Demographics

Djibouti, Eritrea, Ethiopia, Somalia, Sudan and South Sudan were home to about 190 million people in 2020—less than half the population of Western Africa, which is estimated at slightly under 400 million. With its population of roughly 206 million, Nigeria alone is significantly larger. From a more global perspective, the world's two largest populations—China and India—each have populations that are more than seven times larger than that of the Horn. Nearly two-thirds (60%) of the region's population is in Ethiopia, the second most populous country on the continent. Home to an estimated 115 million people, Ethiopia's population is larger than the other five countries combined. Sudan's population of roughly 44.3 million follows as the next largest in the region, trailed by Somalia (15.3 million), South Sudan (10.2 million), Eritrea (3.5 million) and Djibouti. Djibouti's tiny population of approximately one million in 2020 was less than a quarter of the size of Addis Ababa (4.8 million in the city proper).[33] Chart 4 illustrates the population sizes of each country.

Over the next 10 years, the populations of Ethiopia, Somalia and Sudan will increase by 33.4 million, 3.8 million and 13.5 million people respectively, reaching 241.3 million for the region by 2030.

Over the longer term, Ethiopia's population is set to grow the fastest, although rates differ sharply between urban and rural areas. After growing on average 2.75% between 2010 and 2020, Ethiopia's population growth rate is expected to rise moderately to average 2.8% growth between 2020 and 2030. By mid-century, Ethiopia's population is expected to be more than 200 million people.

From 2020 to 2030, the total population of the Horn of Africa is expected to grow at an average rate of 2.6% per year. This is significantly slower than Central Africa (3.16%) and Western Africa (2.96%), slightly lower than the whole Eastern African region (2.8%), and more rapidly than Southern Africa (2.3%).

Djibouti, being at a later stage in the demographic transition than the other five Horn of Africa countries, has the lowest total fertility rate, estimated at 2.8 children per woman in 2020. Somalia's total fertility rate of 6.1, meanwhile, is the second highest in the world (Niger, recorded at 6.8, has the highest). This means that the average Djiboutian woman will have about three children in her lifetime. In Eritrea and Ethiopia, meanwhile, the average woman has four. South Sudan recorded a total fertility rate of 4.8.[34]

The Horn of Africa has an extraordinarily young population. Even in Djibouti, half of the population is younger than 25 years of age. The median ages of the populations of Eritrea, Ethiopia, Somalia, Sudan and South Sudan range from 19 (Ethiopia and Sudan) to 16 (Somalia). In fact, Niger, with a median age of 15, is the only country in the world with a younger population than Somalia.

With the exception of Djibouti, the region's youthful age structure constrains economic growth. There are few people of working age (between 15 and 65) relative to child dependants (that is, children younger than 15). It will therefore continue to be difficult for countries like Ethiopia, Eritrea, South Sudan and Somalia to benefit from a demographic dividend and the potential for more rapid economic growth over the next 20 years.

Historically, nations that have achieved rapid economic growth, such as South Korea and Taiwan, did so partly because they had large labour forces relative to dependants. When the working-age population far outnumbers the dependant population, the opportunity for a 'demographic dividend', or an economic bonus, arises. But this is provided the growing labour force acquires the needed skills and is productively employed in the formal economy. Broadly speaking, a nation must reach at least 1.7 people of working age for each dependant to potentially experience a demographic dividend.[35]

Chart 6 shows that of the six Horn of Africa countries, only Djibouti has reached this ratio, recording an estimated 1.9 people of working age for each dependant. This ratio is set to stagnate until 2030 before gradually resuming its upward trajectory to peak at 2.2 working-age people for each dependant by mid-century. Ethiopia and Eritrea are projected to reach 1.7 working-age people for each dependant after 2040, at which point the ratios of Sudan and South Sudan are expected to reach roughly 1.5 and 1.4, and Somalia, 1.2. Somalia is expected to reach the important ratio of 1.7:1 only by 2070. Eritrea, Sudan and South Sudan, meanwhile, are projected to reach this ratio in the 2050s.

But achieving the demographic dividend is not a given. To boost economic growth, people need meaningful employment and access to their rights of a quality education, clean water and sanitation facilities, and freedom from violence and conflict.

Studies show that a youth bulge (defined as the portion of the population 15 to 29 years of age relative to the total adult

population) increases the potential for socio-political instability if there are no job prospects. In general, countries have a higher risk of political instability when 40% of the adult population is between 15 and 29 years old. And that risk is compounded when opportunities for young people are severely restricted in the forms of low access to participation in governance, limited education, and failing economic development.[36]

The youthful population structure and limited socio-economic opportunities, among other challenges, contribute to the social instability experienced in the region.

The Horn of Africa is the most rural African region. On average, only 27% of its population lives in urban areas. The region has only three cities/urban agglomerations with at least one million inhabitants: Addis Ababa, Khartoum and Mogadishu. In Western, Central and Southern Africa, nearly half of all inhabitants are urban. Across sub-Saharan Africa, two out of every five people live in urban areas.

Djibouti, however, is an important exception. Although Ethiopia is the most densely populated country in the Horn, Djibouti is by far the most urbanised. Here, an estimated four out of every five people live in the cities, mostly in Djibouti City—a feature that reflects Djibouti's extremely small population and land area. Eritrea is the second most urbanised in the group.

Somalia and Sudan lie in the middle. About 48% and 34% of their respective populations reside in an urban area compared to one out of every five Ethiopians. Nearly half of all Somalis live in urban areas, while in Sudan, only about one in three.[37] Meanwhile, fewer than one out of every four South Sudanese live in an urban area, making the country the 13th most rural in the world, and the second most rural state in the Horn of Africa after Ethiopia.

In urban areas, it is often easier for governments to provide services and for people to access the basic resources they need. For example, in Somalia, an exhaustive World Bank survey held in 2017 found that: 'Cities consistently provide better access to services and more stable income sources than rural areas except for land and housing.[38]' Rather than viewing urbanisation as a challenge, it offers an opportunity to accelerate the provision of a range of services including education.

Economy

GDP growth and sectoral contribution

Since the second half of the 1990s, average GDP growth rates have been high across the Horn, especially in Ethiopia, which has become one of the fastest-growing economies in the world. Ethiopia is followed by Djibouti, although it experienced its first economic contraction in two decades in 2020 as a result of the global health pandemic.

Over the period 2000–2010, Sudan experienced an average growth rate of 7% induced mainly by oil extraction. However, this decade of high economic growth ended abruptly in 2011 following South Sudan's secession when Sudan lost 75% of its oil resources.[39]

On average, Ethiopia, Djibouti and Eritrea have recorded between 5% and 9% GDP growth per annum over the past decade. However, conflict and political instability have led to the South Sudanese economy shrinking while the Somalian economy is now growing slowly.

The region had a total GDP of about US\$160 billion in 2019, and most economic activities are concentrated in Sudan and Ethiopia, which account for 89% of the total GDP of the Horn. With the exception of Djibouti, which was recently classified

as lower middle-income, the rest are all categorised as low-income by the World Bank. The average GDP per capita of the region (adjusted for purchasing power parity, or PPP) was about US\$2 070 in 2019. It is projected to be US\$3 030 in 2030 and US\$4 685 in 2040, above the projected average of US\$2 725 for other low-income countries in Africa in the same year (Chart 7).

GDP per capita for Djibouti is below the average for its African lower middle-income peers, but has recently overtaken that for Sudan, which is above the average of other low-income countries in Africa. Currently all the countries except Somalia have their GDP per capita (in PPP) above the average for low-income Africa.

Somalia currently has the lowest GDP per capita in the Horn of Africa and, on the Current Path, will still have the lowest per capita income in the region by 2040. The slow pace of GDP growth in Somalia is not enough to keep pace with population growth, and hence constrains improvements in income per capita.

The economies of the Horn of Africa countries have experienced some structural change but, like many other African countries, this transformation is mainly between subsistence agriculture and low-end services. The share of the agriculture sector in total regional GDP declined from 46.7% in 1997 to 28.9% in 2019. The contribution of the manufacturing sector increased slightly from 7.8% to 11.3% over the same period. The service sector has become the dominant economic activity in the Horn, with its contribution to total regional GDP increasing from 35.9% in 1997 to 48.4% in 2019. However, this regional picture masks large differences between countries (see Chart 8).

Djibouti's economy relies heavily on the service sector as it accounts for nearly 87% of GDP. The country's geographical location, its political and economic stability and dynamic port sector offer the opportunity to strengthen its position as a regional hub for various financial, information and communications technology (ICT), and logistics services.

Recognising the need for economic transformation, the government of Djibouti has initiated, through its Vision 2035, a programme to boost economic transformation and diversification. Through this development plan, Djibouti aims to develop a digital technology hub, promote light manufacturing, create more than 200 000 jobs and triple its GDP per capita by 2035^[40]. Djibouti also has enormous tourism potential that remains untapped due to obstacles such as insufficient tourism-related infrastructure.^[41]

Mining and agriculture constitute the main drivers of economic growth in Eritrea. These sectors are highly dependent on commodity prices and hazards associated with climatic change, and hence create significant volatility in the growth performance of the country. Economic opportunities in the country are mainly in mining, tourism and agriculture. However, agriculture, which accounts for 17% of GDP, is still very rudimentary and subject to recurrent droughts.

The dependence of two-thirds of the population on subsistence agriculture coupled with indefinite military service make the labour market almost non-existent.^[42] Increased investment in mining is expected to drive growth. However, Eritrea is already at high risk of debt distress. Although the large share of this debt is domestic, external debt represents 64.4% of GDP.^[43] This difficult macroeconomic situation limits the country's growth prospects.

Years of conflicts and political division have destroyed much of the Somalian economy. The country's exposure to recurrent shocks and crises, including drought and insecurity, locust infestation, and more recently the COVID-19 pandemic, pose many challenges for the economy.

Agriculture/livestock remains the backbone of the economy, accounting for around 60% of GDP and employing around 65% of the labour force.[44] The economy is however slowly transitioning from traditional rural pastoralism to urban trade and services. This offers several opportunities for investment and job creation. Most economic activities are centred around Mogadishu, the capital city, and security concerns continue to dominate business in the country.

Somalia's economy is also highly dollarized. According to the International Monetary Fund (IMF), about 90% of currency in circulation in the economy is US\$, and this makes it difficult for the Central Bank of Somalia to conduct effective monetary policy. Also, the country is in debt distress, with external debt estimated at 99.5% of GDP in 2019. However, Somalia is in a debt relief process through the Heavily Indebted Poor Countries initiative, and this could free up vital financial resources to support growth and reduce poverty.

The Sudanese economy, which was suffering from US sanctions, received a huge blow with South Sudan's secession, losing two-thirds of its export earnings and over half the fiscal revenues, resulting in high macroeconomic imbalances.[45] The service sector accounts for about 60% of GDP while agriculture contributes a quarter of GDP and employs 80% of the workforce.

A year after former president al-Bashir was overthrown, Sudan is still trapped in economic mire; with currency depreciation, rising inflation and food shortages. According to Jonas Horner of the International Crisis Group, 'economic recovery in Sudan will be a long road and will require sustained and coordinated technical and financial support of its traditional donors such as EU, US, UK and the Gulf states.'[46] Prime Minister Abdalla Hamdok has noted that the country needs up to US\$8 billion in support over the next two years to rebuild the economy given its high levels of external debt estimated at 88% of GDP.[47]

The removal of Sudan from the US State Sponsors of Terrorism list, reportedly in exchange for its recognition of Israel, opens the door for aid, debt relief, trade and investment. These are badly needed to pull the country out of its severe economic crisis compounded by COVID-19.

As for South Sudan, oil extraction continues to be the backbone of its economy, accounting for nearly 90% of government revenue and more than 30% of its GDP.[48] The country's production potential has been drastically reduced by ongoing conflicts and economic mismanagement, and the economy is highly vulnerable to weather, oil conflicts and related shocks. Outside the oil sector, economic activities are concentrated in rudimentary agriculture and pastoral work.

The average inflation rate peaked at almost 380% in 2016 before declining to an estimated 27% in 2020.[49] Sustainable economic recovery in South Sudan will require long-term peace and comprehensive macroeconomic reforms to combat inflation, addressing foreign exchange distortions, and policies to diversify the economy away from oil.

With the exception of Ethiopia, which has determinedly pursued policies to attract investment in its manufacturing sector, the contribution of manufacturing to GDP in the Horn of Africa countries is marginal. For example, over the period 2005–2017, on average, output in Ethiopia's manufacturing sector grew by 11% annually. However, the sector is still at the embryonic stage and its contribution to job creation and output is far from being an engine for growth and economic transformation.

The agriculture sector has historically been the backbone of the Ethiopian economy, although it has recently been overtaken by the service sector. Agriculture's share in GDP has been falling, but it still employs more than 70% of the country's workforce.[50] Manufacturing contributes to less than 10% of Ethiopia's GDP. However, the ongoing conflict in the Tigray region will probably reduce investors' appetite for Ethiopian destinations, and this could slow the growth in the manufacturing sector as it is mainly driven by foreign direct investment.

Agriculture and climate change

Agriculture is the backbone of the economies of the Horn and the source of livelihoods for the majority of the population. The sector is, however, poorly developed and faces numerous challenges as well as climatic and conflict impediments. The region is highly food insecure, owing to recurrent droughts, natural disasters and poor governance that hamper crop and livestock production.

Out of Djibouti's 23 200 km² of land, only 1 000 km² are arable, and the country receives an average annual rainfall of only 130 mm. Djibouti has the biggest food deficit in the Horn of Africa and imports up to 90% of foodstuffs. As a result, the country is highly dependent on international market prices. Any variation in international prices has a considerable impact on the poorest segment of the population, who spend 77% of their household budget on food.[51]

Agriculture contributes about 4% of GDP. Approximately 30% of Djibouti's rural population depends on this sector, and because most of the country is semi-arid to arid and water resources are limited, pastoralism is the main form of agriculture.[52]

In Eritrea, nearly 75% of the population depends on agriculture. Out of the 26% arable land, only 4% is actually under cultivation. The country is highly dependent on rainfall thus frequent droughts make crop farming even more difficult.[53] In fact, 70% of Eritrea's land is hot and arid and it receives less than 350 mm of rainfall annually. As an acknowledgment of the situation, the Eritrean government has agreed to reserve US\$17 million to administer solutions for drought effects in rural communities.[54]

Between 80% and 85% of Ethiopians are engaged in agriculture and account for about 33% of GDP.[55] In Somalia, crop and livestock farming remain the main source of economic activity, constitute about 75% of GDP and represent 93% of exports.[56]

Somalia is a fragile state but has huge agriculture and livestock potential. The country's arable land is estimated at 8.5 million hectares with only 2.3 million hectares under rain-fed agriculture and 630 000 hectares under irrigation.[57] Somalia also exports more than 50 million livestock and about 1.8 million tons of fish annually.[58] In the current Somalia National Development Plan (2020–2024), agriculture is at the centre of the strategies to promote growth and reduce poverty.

South Sudan also has huge agricultural potential. Favourable soil, water and climatic conditions make 75% of its total land area suitable for agriculture. However, only 4% of the total land area is cultivated continually.[59] Limited use of productivity-enhancing technologies, capacity constraints, poor infrastructure and protracted conflict have constrained agriculture production and the country continues to face recurrent episodes of acute food insecurity. In South Sudan, over 80% of the rural population depend on agriculture.[60]

In Sudan, agriculture is the main economic sector, contributing 25% to the GDP and employing about 80% of the workforce.[61] It has vast areas of agricultural land (about 200 million acres of arable land) and adequate water resources (25% share of Nile water resources under regional agreements). In fact, due to Sudan's loss of access to most of its oil revenue with South Sudan's secession, and Sudanese authorities' desperate need for revenue, a new focus on agriculture has resurrected its long-standing dream of becoming an agricultural powerhouse.[62]

Because of harsh climatic conditions, dependence on rain-fed agriculture, lack of infrastructure and investment in agriculture, poor governance, and persistent violent conflicts, agricultural yields and thus productivity are quite low in the Horn countries. As a result, many people suffer from food insecurity and malnutrition.

The combination of poor domestic crop production and increased domestic food demand, driven by rapid population growth and urbanisation, has led to a massive increase in food imports. From a food-security perspective, the Horn countries are in a precarious situation due to volatile international prices. It is therefore no surprise that the region is one of the most food-insecure regions in the world.[63]

IFs forecasts import dependence on crops to be about 10.6%, and that by 2040 it will have increased to roughly 25.8%, an increase of more than 15 percentage points in 20 years. Djibouti has a very high import dependence that has increased during the COVID-19 pandemic.

The situation is probably worse in South Sudan, where an unprecedented economic crisis, drop in oil prices and conflict have even made it difficult for the country to export, leaving many in need of humanitarian assistance. Prior to 2016, the country imported virtually everything. However, given the range of challenges in the country, the government is urging its citizens to turn to agriculture as an extreme poverty-alleviation strategy.[64]

Despite the poor performance in the agriculture sector, there is considerable scope for expansion and improvement. For example, in its National Development Plan, Djibouti hopes to increase domestic production, including seafood, and encourage value addition with the aim of exporting to Gulf countries. By 2035, Djibouti aims to have its agriculture sector contributing 5% of GDP.[65]

Irrigation could ensure that more land is used for crop farming, although water access is an obvious constraint. Some projects have identified interventions that could moderate this challenge through improved collection, storage and use of surface water for drinking, agriculture and livestock farming. Efforts at sustainable agriculture have also attracted ideas to access and save water, such as importing palm trees for the production of dates, and to provide shade for other produce to be farmed. Djibouti, for example, is also experimenting with drip irrigation.[66]

Improving agricultural productivity is possible. In Ethiopia, the agriculture sector has seen the fastest expansion of land under irrigation of any African country by nearly 52% between 2004 and 2014. This is due to the Ethiopian government's prioritisation of agriculture.[67] To complement irrigation, other factors to consider in the development of agriculture include reform of land ownership, better farming practices, efficient use of fertilisers and less reliance on seasonal variability of production.[68]

Aside from crop farming, the Horn region has the largest population of nomadic pastoralists in the world. The pastoralists in the region are shifting to more commercial systems as populations grow and markets change. This trend is not uniform across the region and will probably create a mix of long-term challenges given the economic, environmental and demographic dilemmas faced in the region. As such, policies that support pastoralists opting out of the lifestyle as a means of earning their livelihood and those venturing into commercial systems need to be supported.[69]

The agriculture sector also faces risks associated with climate change that will likely affect crop and livestock production. Aside from affecting agricultural production, the International Food Policy Research Institute highlights the relationship between global warming and conflict in East Africa. The research finds that higher temperatures greatly affect the risk of conflict due to livestock price shocks and the stress on water and feed sources. It is projected that without intervention, the risk of conflict could increase by up to 30% in Sudan and South Sudan, and up to 50% in Somalia by 2030 as temperatures continue to rise.[70]

Natural resources

Natural resources such as oil, gas and minerals have significant potential to contribute to economic growth and development, provided the necessary regulatory frameworks and policies are in place, coupled with visionary and accountable leadership. Experiences in countries such as Norway, Canada and Botswana corroborate the view that natural resources can boost development.

The Horn of Africa region has not been known for huge natural resources endowment, especially extractives. For example, Djibouti's natural resources are very limited. The country has no proven oil or natural gas reserves, and only 1% of the territory is forest. Djibouti's main natural asset is probably its strategic location.

However, in recent years, some countries in the region have shown a mineral boom. With a significant discovery of gold, copper and silver, Eritrea is one example. With a new Chinese majority shareholder, the country's largest mine (the Bisha mine) is expected to continue operation at least until 2024. Two other major mining projects, the Asmara mining project and the Colluli potash mine, will enter production in 2021/2022.[71]

Ethiopia on the other hand has operational gold mines and the potential for the discovery of oil and huge natural gas as well as salt and potash. The Adola gold mine in southern Ethiopia, currently owned by a private company (MIDROC) through a concession from the Ethiopian Mineral Resources Development Corporation, is the largest gold mine in Ethiopia with an average annual production of 4.5 tons of gold.[72]

However, there are concerns on the part of local government authorities, members of the opposition and the local community that the right to mine gold has been granted to MIDROC without clearly stipulating corporate social responsibility guidelines. There are also other concerns such as corruption and clientelism. In addition, the company's mining activities have seen the dumping of toxic chemicals and, given the lack of compensation and engagement with the local community, this could lead to instability.[73]

Promising test wells, seismic and gravimetric surveys, actual oil seeps and the geological resemblance to oil-rich Yemen strongly indicate the presence of oil in commercial quantities in Somalia.[74] Somalia is significantly underexplored and the Horn is considered by many as one of the last remaining oil frontiers in Africa.[75] However in the immediate future security concerns limit oil exploration activities in the country as clan militias frequently ambush oil exploration teams.

Prior to the secession of South Sudan, Sudan as a whole was estimated to have six billion barrels of oil and three trillion cubic feet of natural gas reserves. As most oil blocks are in the territory of South Sudan, the oil-producing capacity of Sudan was heavily diminished by the secession. Crude oil production declined from about 130 000 barrels per day (bpd) in 2013 to 72 000 bpd in 2019. According to the BP Statistical Review of World Energy for 2019, Sudan's oil reserves stand at 1 500 million barrels only.

In 2012, South Sudan shut down all its oil production for 15 months in response to the action by Khartoum, which confiscated the oil as it flowed through the pipeline to Port Sudan. This was in an effort to recover unpaid fees related to oil transportation through the pipeline on its territory.[76] At the end of 2019, South Sudan owed Sudan US\$574 million for the transfer of oil.[77]

According to experts' assessment, oil production in Sudan could get to 100 000 barrels a day by investing in primary oil recovery techniques. However most foreign investors chose to leave Sudan by 2020 after their contracts ended. There was no interest by international investors in exploring the market when the authorities offered 15 oil blocks to international investors after the US eased economic sanctions in 2017.[78]

This lack of interest in the Sudanese offer reflects low expectations of large new oil finds in the country, governance and policy weaknesses as well as ongoing concerns about the threat of a resumption of conflict. Due to resource constraints, it will be very difficult for the Sudanese government to develop the oil sector without foreign investment.

Aside from the poor governance that continues to plague the extractive sector in the Horn of Africa, a large part of the resources is found in peripheral and border areas of the region where political marginalisation is compounded by conflicts and economic deprivation of local communities. Here literacy rates are among the lowest and poverty rates the highest.[79] This existing pattern of resource extraction characterised by local communities' exclusion and absence of positive trickle-down effects is likely to be confrontational unless appropriate policy frameworks are put in place and genuinely implemented by Horn governments.

International trade

The trade pattern of countries in the Horn of Africa is similar to that of many other African countries that rely on a few key commodity exports while importing higher-value manufactured goods, consumer items and foodstuffs.

Historically in deficit, the trade balance of the Horn of Africa region partially depends on weather phenomena, which sometimes forces the countries to import grains during drought. For instance, in the IFS database, the total exports and imports of the region amounted to respectively 13.3% and 24.6% of the regional total GDP, resulting in a trade deficit of about 11% of the regional total GDP in 2019.

The region is relatively open to trade with a foreign trade-to-GDP ratio of 38% in 2019, and Middle East countries, especially the Gulf countries, are among the key trading partners for most of the Horn nations.

Overall, China is the main destination of Horn export mainly due to fossil fuels from South Sudan, and the Gulf states are the main trading partner for goods (excluding fossil fuels) from Djibouti, Somali, South Sudan and Sudan.

Djibouti mainly exports cattle to the Gulf states and re-exports vehicles, machinery, food and cement. According to the latest UN Conference on Trade and Development (UNCTAD) data,[80] the top five major export destinations of Djibouti in 2019 were Yemen, Ethiopia, Saudi Arabia, Egypt and the US. The country imports mainly petroleum products, food, vehicles and other capital goods from the EU, UAE, Japan and Ethiopia.

The economies of Ethiopia and Djibouti are highly interdependent since the Port of Djibouti constitutes the only maritime outlet for the landlocked territory of Ethiopia. However, the recent peace between Ethiopia and Eritrea, with the resulting opportunity for Ethiopia to use Eritrea's ports, may change this situation.

Coffee is the main export product of Ethiopia. In 2018, the share of coffee in the country's export was 29.5%, followed by oilseeds (14.9%), pulses (9.5%), cut flowers (8%) and gold (3.5%). Manufacturing accounts for less than 8% of Ethiopia's total exports but this is likely to increase in the near future as the country is doing relatively well in developing its manufacturing sector. The top five major destinations for Ethiopia's exports in 2019 were China, the US, Sudan, Switzerland and Saudi Arabia. Imports mainly come from Asia (64.2%, of which China accounts for 39.3%) followed by Europe (19.3%), the US (9.4%) and Africa (7%).[81]

Eritrea's export basket is made up of livestock, coffee, cotton and leather, which makes it very dependent on variable weather conditions given its underdeveloped irrigation systems, textile products and limited minerals (copper and gold). The country imports virtually all of its capital goods, oil/petroleum and food products. About 90% of its consumption of food is imported. Eritrea's main trading partners are China, the Republic of Korea, India, the UAE and Myanmar.

The peace deal signed with Ethiopia in July 2018 will probably improve Eritrea's trade relations with Ethiopia. However, the government maintains strict control on foreign exchange reserves, and this severely limits the freedom of trade and undermines the country's economic progress.[81] At the time of writing this report, it is unclear as to the impact of the security alliance between Ethiopia and Eritrea that saw the latter provide substantial military resources in support of Ethiopia in the subjugation of Tigray.

Before South Sudan's secession, especially during the period 2000–2011, Sudan was highly dependent on the revenues from oil exports. The loss of oil following secession eventually forced the government to boost non-oil exports to compensate for the loss of oil export revenue. Certain commodities such as sugar, cotton, wheat, edible oil, livestock and gum arabic, among others, were targeted for export and import substitution. As a result, exports in agriculture raw materials increased from 9% of total exports in 2011 to 57% in 2018.[82]

Despite this improvement, government policies did not materialise in diversifying exports from agriculture raw material and natural resources to manufactured goods. The US sanctions also had negative impacts on promoting manufacturing in Sudan since it complicated cross-border payments, and the recent lifting should allow the country to increase exports.[83]

Sudan mainly exports fuels, gold, oilseeds, live animals and cotton, and imports capital goods and foodstuffs. Sudan's main export partners are the UAE (40% of total exports), China, Saudi Arabia, India, Egypt and Ethiopia (4%), while imports are from China (22% of total imports), the UAE, Saudi Arabia, India, Japan and Egypt (5%).[84]

Since its independence in 2011, the government of South Sudan has been struggling to integrate the young country into the international trade network. The country has gradually moved closer to the East African Community, becoming its latest member in 2016.

South Sudan is one of the most oil-dependent countries in the world; oil exports accounted for 98% of total exports in 2019. The top five major export destinations in 2019 were China, the US, India, UAE and Spain. South Sudan mainly imports vehicles, machinery, electrical appliances, pharmaceuticals, plastics and food and beverages. The peace agreement signed in September 2018 aimed at ending the civil war has led South Sudan and Sudan to open four border crossings, which is likely to increase formal trade between the two.

Somalia has a systemic and large trade deficit which is estimated at over 70% of GDP per annum. This external deficit is the result of the country's high dependence on food imports, which is the result of a chronic food crop deficit. It is also as a result of the import of construction materials, fuel and manufactured goods.

Livestock, bananas, skins, fish, charcoal, frankincense and scrap metal constitute Somalia's main exports. According to UNCTAD data, in 2019 Somalia's top five export destinations were Yemen, India, Japan, Bulgaria and Turkey, while imports were from China, India, Turkey, Malaysia, Indonesia, Brazil, Pakistan and the US. The absence of a stable customs authority, the poor quality of road and port infrastructure, as well as high levels of insecurity are some of the main factors that impede Somalia's participation in international trade.[85]

Somalia's prospects for expanding trade, both within the region and internationally, are contingent upon its accession to the World Trade Organization (WTO). Somalia has submitted its accession application but WTO membership has not yet been granted.

Accession could boost trade for the country and increase its participation in the global value chains provided the country undertakes the necessary structural and institutional reforms required to liberalise trade and build strong economic institutions. However, this is highly unlikely to happen soon because Somalia not only lacks a manufacturing base, but also

the political capacity to implement the necessary reforms.

The official cross-border trade within the Horn region is low. Over 95% of cross-border trade within the region is informal, carried out by pastoralists trading livestock. For instance, the unofficial trade of live cattle, camels, sheep and goats from Ethiopia to other countries in the Horn is estimated to be between US\$250 million and US\$300 million annually. This is 100 times more than the official figure.[86] The formalisation of this trade could bring important additional tax revenue to the governments of the region but would require significant improvements in border control and management.

Overall, the exports of the Horn of Africa nations are poorly diversified. The share of manufacturing exports is very low. IFS estimated the value of total manufacturing exports at about 4% of the regional GDP in 2019. This overreliance on exports of low-value raw materials puts the economies at the mercy of fluctuating international markets and makes macroeconomic and budgetary planning difficult. The Africa Continental Free Trade Area agreement, once implemented, offers an opportunity to promote regional trade and manufacturing in particular, and hence diversify their economies away from commodity exports.

Foreign direct investment, aid and remittances

Access to international finance offers a possibility for countries to augment domestic savings for investment. Particularly, foreign direct investment (FDI) can be an important catalyst for growth and development as it brings much-needed capital and technology into the recipient economies.

Chart 11 shows the trends in external financial flows in the Horn of Africa countries from official data. In percentage of GDP, Djibouti and Ethiopia are the highest recipients of FDI inflows in the region while South Sudan and Eritrea are the lowest. In percentage of GDP, Somalia is by far the largest recipient of aid and remittances followed by South Sudan while Ethiopia receives the least remittances.

However, in absolute terms, most FDI and ODA into the region goes to Ethiopia. For example, in 2018, FDI inflows and ODA to Ethiopia were respectively US\$3.3 billion (64% of regional total FDI inflows) and US\$4.9 billion (50% of regional total aid). Official remittance flows to Ethiopia reached US\$5 billion in 2018, a large increase from only US\$140 million in 2002/3. The actual amount is likely much larger as informal remittances are not captured in official data.

Due to scarce domestic resource availability, Somalia remains highly dependent on aid and remittances. As a share of GDP, ODA in 2018 was 26.6% while the domestic revenue represents 2.5% of GDP. ODA combined with remittances represented more than 50% of Somalia's GDP in 2017. Aid to Somalia has increased fourfold from US\$26.9 million in 2015 to US\$124.6 million in 2018. Turkey, the World Bank and the EU are the major source of grants for the country.[87]

Overall, aid is the largest source of external finance in the Horn of Africa, and most Horn states rely heavily on investment and aid from the Gulf countries. From 2000 to 2017, for example, the Gulf states' investment and ODA in the Horn region amounted respectively to US\$13 billion and US\$6.6 billion. The substantial deposits in hard currency by Gulf countries are crucial for Horn governments' economic solvability and currency stability.[88]

Future prospects are less certain, however. COVID-19 has dramatically reduced Gulf states' oil revenues, and budgets for foreign assistance will probably shrink. Reduced Gulf spending requires Horn states to look for other ways to plug the gaps in their budget or may lead to dramatic rises in prices of staple foods and place additional pressures on government

budgets to increase subsidies.

The Gulf states' investments are uneven across the Horn region. Ethiopia and Sudan are the main destinations of Arab countries' investments in the Horn of Africa. These two countries accounted for about 95% of total investment by the Gulf states (Saudi Arabia, the UAE, Kuwait and Qatar) in the Horn between 2000 and 2017.[89] This reflects the importance of these two countries for the Gulf countries' geopolitical strategy.

However the Horn of Africa nations have not been able to attract sufficient FDI that could be a game-changer for their development, probably due to the high levels of instability in the region. In 2019, FDI flows to the Horn region accounted for about 3% of the regional total GDP, below the average of 4.2% for low-income Africa in the same year.

FDI is key to increasing their capital stock and level of technology that would help to boost growth and development.

The poor business climate and the recurrent political instability and military conflicts deter investment as these countries rank near the bottom in terms of rankings on business and investment climate. For instance, in the 2020 Doing Business report by the World Bank, Djibouti has the best business environment in the region, but it only ranked 110 out of 190 countries. It was followed by Ethiopia (159/190), Sudan (171/190), South Sudan (185/190), Eritrea (189/190) and Somalia (190/190).[90] The business environment remains particularly poor in Somalia, South Sudan and Eritrea.

Recent attacks in Mozambique's northern Cabo Delgado province brought the largest FDI in Africa to a standstill, despite much of the investment being off-shore. This should indicate that huge FDIs in potential conflict zones, such as the Horn, are unlikely to materialise in the future.

Poverty and income inequality

Poverty is a broad concept; it goes beyond income to individuals' access to basic nutrition, health and education, among others. For example, the Multidimensional Poverty Index complements monetary measures of poverty by taking into account the multiple deprivations faced by people in a country.[91]

According to the latest data, about 92% of the South Sudanese population is multidimensionally poor, with 74.3% of them in severe multidimensional poverty—the highest in the Horn of Africa. Djibouti has the lowest multidimensional poverty rate (34.6%) in the region while more than 80% of the population in Ethiopia and Somalia are multidimensionally poor.[92] The high levels of multidimensional poverty in the Horn states reveal the extent to which people in the region do not have basic social services such as healthcare, education and housing, among others.

On the current development trajectory, the Horn of Africa countries will not be able to achieve the headline goal of the 2030 Sustainable Development Goals (SDGs) concerning the eradication of extreme poverty, using the World Bank measure.

IFs forecast the average poverty rate of the region at about 33.6% (about 60 million people) in 2019, below the average poverty rate of 56.7% for other low-income African countries. However, the aggregated picture masks large disparities between countries. The poverty rate is particularly high in South Sudan, Somalia and Eritrea. Chart 12 shows the trends in income poverty in the Horn of Africa.

Using US\$1.90 per day as the poverty line, Sudan and Djibouti have the lowest poverty rates in the Horn region (below 26%) while Somalia, Eritrea and South Sudan, with their poverty rate above 60% in 2019, are the poorest countries in the Horn of Africa. However, as Djibouti has recently become a lower middle-income country, the appropriate poverty line is US\$3.20 per day according to the World Bank. At this poverty line, 42% of Djibouti's population live in extreme poverty.[93]

The harsh dry climate has exacerbated poverty in Djibouti, especially in rural areas where the majority of the population practise nomadic farming. Long droughts coupled with high unemployment rates keep many people in extreme poverty.[94] Cognisant of this situation, the National Development Plan (Vision Djibouti 2035) adopted in 2014 intends to diversify the economy and speed up job creation to help Djiboutians find gainful employment and reduce extreme poverty.

Currently, South Sudan has the highest poverty rate (78%) in the Horn of Africa, but due to its high population, Ethiopia still has the largest number of poor people. It has however made significant progress in reducing extreme poverty, from 67% in 1995 to about 28% in 2019.

Despite this progress, Ethiopia remains among the poorest countries in the world, where nearly 30 million people live in extreme poverty, and the conflict in the Tigray region is likely to exacerbate this situation. Rapid growth and low levels of inequality should, over time, reduce extreme poverty to 4.8% by 2040 while Somalia will have the highest poverty rate (48%). The average poverty rate in the region is projected to be 25% by 2030 and 12% by 2040, below the projected averages for other low-income and lower middle-income countries in Africa in the same year.

The incidence of poverty is, however, highly uneven. For example, in Sudan, the northern states and the districts of Khartoum City have the lowest poverty rate while poverty remains severe in the southern and western states. The poverty rate in the Darfur states is more than 60%[95] while the overall poverty rate in the country is 26%. Rampant government corruption and unemployment are major causes of poverty in Sudan. While individuals living in households with unemployed heads represent only 2.4% of the total population, they account for 50% of the population living in extreme poverty.[96]

Poverty is not only widespread and deep in Somalia and Eritrea, but is also highly gendered, as female-headed households tend to be the poorest.[97] In these countries, women are generally excluded from economic participation and have no access to capital. This has led to high levels of unemployment and lower incomes.

Poverty in Somalia is concentrated among nomadic pastoralists and agro-pastoralists. Estimates by the World Bank show that the average poverty gap in Somalia is 29%, which implies that the average income level of a poor Somali household is 71% of the international poverty line.[98] The leading causes of the persistently high poverty in Somalia are weak governance and insecurity, absence of the rule of law, and conflict and political instability.[99] Without effective control of its territory, Somalia's Ninth National Development Plan, which seeks to promote inclusive growth and poverty reduction, has limited impact.

Like in Somalia, conflicts and political instability have led to widespread poverty in South Sudan. Economic growth is not inclusive as it is mainly driven by oil rather than agriculture, which provides livelihoods for most of the population. Many people survive on livestock and farms, which are often killed or damaged during the clashes. This is worsening the already dire levels of poverty, with many people having no access to social safety nets, at a time when the economic impact of COVID-19 has devastated livelihoods.

South Sudan invests less in sectors that could have a significant impact on poverty alleviation. Government expenditures emphasise defence and security at the expense of basic service delivery. For example, military expenditure increased from

about 6% of GDP in 2011 to nearly 21% in 2018 and the security payroll represents 58% of South Sudan's total government expenditure.[100] The government of South Sudan should rather invest in its people by allocating its income from oil into schools, hospitals, roads and agriculture to ensure sustainable inclusive growth and poverty reduction.

Generally the Horn could benefit from its relatively low levels of average income inequality, which implies that economic growth more rapidly translates into poverty reduction than in a region like Southern Africa, which has much higher levels of inequality. IFs estimated the average score of the region on the Gini index at 0.36 or 36% in 2019 against an average of 41.8% for other low-income countries in Africa in the same year.

At the country level, the Gini index ranges from 33.5% in Sudan to 46.3% in South Sudan. Sudan and Ethiopia have the lowest levels of income inequality in the Horn of Africa.

Health

Prolonged armed conflict, insecurity, drought and low development among the six countries have exacerbated their generally poor health systems. An estimated eight million people in the Horn are internally displaced and 3.5 million have fled to become refugees in neighbouring countries.[101] Health needs and status are thus varied by the country and situation at hand. Health needs are further categorised into visible and invisible needs.

Visible needs consist of issues like malnutrition, infectious diseases, lack of vaccination etc. For example, in early 2020, an estimated seven million South Sudanese were severely food insecure; over one million children were acutely malnourished; and almost 300 000 severely malnourished.[102] Invisible needs are the less reported and recorded but with significant impact, like mental health and gender-based violence.

To examine the efficacy of the health system, this report condenses the assessment to main indicators, such as infant mortality, maternal mortality, life expectancy and deaths by three main categories—communicable diseases, non-communicable diseases and injuries.

Child mortality rates have declined in the Horn, but the countries are not on track to achieve the SDG target on eliminating child deaths by 2030. In fact, the COVID-19 pandemic could reverse a lot of the gains made. Data by the UN Children's Fund (UNICEF) shows that in 2019, children in the Horn still faced the steepest chance of survival in Africa and globally.[103]

The pandemic has also interrupted routine immunisation programmes in almost 70 countries globally, most being in developing regions.[104] For a country like Somalia, routine immunisation was already among the lowest in the world and effectively non-existent in some areas since 2009. In addition, the acute food security and nutrition crisis has led to widespread malnutrition, which is also associated with deaths of children under five. According to the Famine Early Warning Systems Network (FEWS NET),[105] serious food security is a persistent concern in the eastern region, where the six Horn countries are situated.

Chart 14: Food insecurity in the Horn of Africa

Source: FEWS NET

About 75% of neonatal deaths happen in the first week of life, and many newborns die within the first 24 hours. In 2017, preterm birth, intrapartum-related complications (birth asphyxia or lack of breathing at birth), infections and birth defects caused most neonatal deaths. After the neonatal period and through the first five years of life, the main causes of death are pneumonia, diarrhoea, birth defects and malaria. Malnutrition is the underlying contributing factor, making children more vulnerable to severe diseases.[106]

In Djibouti, about 68% of children born are likely to die before their fifth (U5) birthday and it is estimated that 35% of these deaths are directly or indirectly linked to malnutrition.[107] There is no recent data for malnutrition for Eritrea but publications by major NGOs indicate that it could be worsening[108] from the 53% reported in 2005,[109] and this is reflected in the estimated 52.5% stunting rate of children U5.[110]

In Ethiopia, 23.6% of children U5 are underweight, 28% of child deaths are associated with undernutrition and 38% of U5 children are stunted, a reduction from about 58% in 2000.[111]

In Somalia, malnutrition has persisted due to unending conflict, drought and famine, and the breakdown of basic services like water and sanitation. An estimated 1.2 million children suffered malnutrition in 2018,[112] and about 25.3% of children U5 suffer from malnutrition and 14.3% from wasting.[113]

In addition to insecurity, the 2020/21 locust invasion has left thousands in South Sudan food insecure. In 2018, 43% of the population were severely food insecure and more than one million children were acutely malnourished.[114] UNICEF also warned that in 2020, about 1.3 million children U5 faced the risk of acute malnutrition.

Malnutrition increased from 13% in 2018 to 16% in 2019, a three percentage-point annual increase—exceeding the emergency threshold of 15%.[115] In Sudan, an estimated 2.7 million children suffer malnutrition annually with roughly 522 000 of this total suffering severe acute malnourishment.[116] More than one in three children U5 are stunted, making Sudan one of the 14 countries where 80% of the world's stunted children live.[117]

Stunting is associated with life-long impairments to children and not only affects their cognitive and learning capabilities but makes them susceptible to opportunistic diseases that affect the quality of their lives and ability to be productive members of their society.

Survival of newborns and children U5 in these countries can be improved through greater coverage of quality ante-natal care, having skilled healthcare workers, and good postnatal care for mother and baby. Given the fragility and numerous challenges to provide healthcare access to this region, engagement to attempt to address these challenges must account for the unique humanitarian situation and tailor programmes with the help and participation of local communities.

None of the countries is on track to achieve the SDG target for maternal mortality rate (MMR) of less than 70 per 100 000 live births, although maternal deaths declined from 1 250 in 1990 to 353 in 2015[118] and 412 in 2016[119] in Ethiopia. This figure is still very high and far from the SDG target.

In Djibouti, the MMR was estimated at 248 per 100 000 live births in 2017.[120] In Eritrea, about 80% of deliveries take place without a physician or trained midwife. In 2017, the country recorded an estimated MMR of 480.[121] The MMR in Somalia is among the highest in the world, and in 2018 it was estimated that the MMR was 732 per 100 000 live births.[122] In South Sudan, MMR was estimated at 1 250 per 100 000 live births in 2017.[123] Finally, in Sudan, MMR was estimated at 295 in 2017.[124]

Many of these countries have limited access to medical facilities, personnel and capacity to deal with the complications

that may arise during childbirth. Poor infrastructure and other development issues like poverty, instability and lack of education also exacerbate the timeliness with which women are brought to medical facilities.

Many NGOs and national health ministries are cognisant of this issue and have taken steps to introduce medical facilities. This is especially in rural areas where fixed and mobile clinics have been introduced and programmes around pre- and post-natal care and childcare are being run. These are to sensitise communities on safe practices to ensure good maternal and child health.[125]

The average life expectancy of the six Horn countries was estimated at 65.9 years in 2020. This is an almost 16-year increase from 1990 levels and on par with Africa's current average life expectancy. By 2040 Somalia and South Sudan will, however, have a life expectancy of around 65—roughly six percentage points below the regional and continental average at the time.

Djibouti's life expectancy ranks 143rd out of 186 countries in IFs. Life expectancy is therefore relatively high by comparative standards. Ethiopia's life expectancy took a hit in the 1980s due to famine, which was also the cause of a million deaths in the country. Overall, life expectancy has been on an upward trend and the country has improved its life expectancy at birth by nearly 43% from the 1990 level that stood at 46.5 years.

Dropping malnutrition rates, infant mortality and non-communicable diseases—although still huge challenges for the country—have aided improvement of life expectancy in the country.[126] Although still lower than the continental and global average, life expectancy in Somalia has been increasing over the past five decades. Undernutrition, maternal and prenatal and communicable diseases such as diarrhoea are the leading causes of death in the country.[127]

Communicable diseases are prevalent among children U5 and older cohorts of the population. By disease subtypes, diarrhoea and 'other communicable' diseases (such as tuberculosis) are most prevalent among children U5 and the older cohorts who also suffer from (mostly lower) respiratory infections.

IFs shows that this region is also suffering a non-communicable disease burden along with the challenge of fighting communicable diseases. Although communicable diseases are projected to decline, it will be a gradual fall and communicable diseases will still be a challenge for the region. Non-communicable diseases will remain steady and will be the prevalent cause of death and disability. Deaths through injuries such as road accidents and other conflict events will also remain steady throughout the forecast horizon.

Education

Before colonisation and the range of crises faced in the region, most of the countries in the Horn offered education through sheikhs and priests. After colonisation, the Horn countries all emphasised the role of education in nation building, and this has been embedded in their policies and national plans as a driver of strategic development.

Despite being a top priority for governments, many challenges persist in accessing education in the region. The annexation of Eritrea by Ethiopia in 1962 and subsequent armed struggle, for example, disrupted the education systems of both

countries—particularly Eritrea. The latter’s educational development was pegged to that of Addis Ababa at the time. Beyond this dilemma, Eritrea is still faced with illiteracy, geographical and climatic challenges, gender inequality, poor infrastructure and inadequately qualified teachers.[128]

Although the situation has improved over the years, the Horn countries still have one of the lowest educational attainments in the world. Owing to a complex socio-political system in the region, the six Horn countries have one of the highest rates of education exclusion. According to IFs, in 2020 over 63 million adults aged 15 years and over had no education or had not attained primary education.

Apart from 2000 when the literacy rate hit a 61% mark, the rates have often fluctuated below that due to conflict and other humanitarian crises that hinder formal education. In 2018, the average literacy rate was at 56.5%, but it is estimated to have declined to about 53.7% in 2020.

When it comes to school enrolment, the rates are much lower than in most parts of sub-Saharan Africa. This is due to displacement of children (which affects access to schooling), disruption of teacher incentives (which affects continuity and teacher retention) and lack of funding for emergency education. This is due to recurrent droughts, conflicts and the pastoralist lifestyle of some of the communities. Additionally, children get recruited into the armed forces from schools to fight on the front lines.[129]

As a result of these challenges, the average period of education for adults aged 15 years and over, according to 2015 data, is only about 3.7 years. When disaggregated by gender, males have about four years and females 3.3 years of schooling. The average years of education are a good indicator of the stock of education in a society, and this means that most adults in the six Horn countries have barely completed primary education.

By 2040, the average years of education for adults 15+ will only be about 5.7 years, nearly 30% lower (1.6 years) than the African average and 72% (4.1 years) lower than the average for the rest of the world, i.e. the world without Africa.

The education system can be conceived as a pipeline where completion or attainment of one level affords one eligibility to the next. From the average years of education, it is clear that most learners do not proceed to the next educational level in the system. That is, the more learners one can enrol and get to complete primary school, the greater a pool of students are available to proceed to secondary and tertiary education.

Chart 19 below shows the performance of various education indicators from one level to another for the six countries. The table is colour-coded to show country and group performance ranging from good (green) to bad (red).

Note: Gross enrolment is the number of learners enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education. Rates can therefore be above 100%. Completion rate is the number of people in the relevant age group who have completed the last grade of the given level of education, as a percentage of the population at the theoretical graduation age for the given level of education.

With the exception of Ethiopia, which has made substantial progress, all the other countries in the Horn still have a

bottleneck at the primary enrolment stage. This means that to begin with, there are not enough children entering the school system to proceed to subsequent educational attainment levels. The more learners a country can get into and through primary school, the greater the pool available for secondary and tertiary. Consequently, educational outcomes for secondary and tertiary levels are very poor.

Poor education environment, i.e. poor education infrastructure, water and sanitation facilities, violence and little child protection, are some of the key impeding factors. Outdated curricula, lack of skilled and adequate teaching staff and management and few mobile educational facilities to meet the nomadic lifestyle of some of the communities continue to affect the quality of education.

Gender imbalance in the education sector also affects the enrolment and educational outcomes of females in particular. These often vary by region—i.e. rural and urban areas. Nonetheless, the female enrolment numbers are often low, partly due to stereotyped gender roles in society. And when they do enrol, as they get older they drop out faster than boys. A significant portion of females who drop out leave to get married, and another portion are forced to leave to stay home and take care of siblings and house chores.

In addition to societal norms, issues like distance and transportation to and from school also contribute to the gender gap. Children from rural areas often have to travel long distances to school, which causes them to be tired and promotes absenteeism.

Coupled with the role that children are expected to play in terms of chores and helping their families earn a living, the long distances to access schools affect girls more than boys as the burden of chores lies with them. Girls also often feel insecure travelling long distances on their own.^[130]

The significance of female education is well documented. It is in the interest of all countries to ensure that girls and women do not miss out on educational opportunities that carry real potential for overall human development and economic productivity.

Studies have shown that secondary education in particular enables women to make meaningful life decisions, like the number of children to have, apart from also delaying their first year of marriage. As a result, they are also able to better take care of their health and nutrition and that of their children and pursue economic activities that promote community and country cohesion and development.^[131] Chart 21 shows how female education has historically affected the total fertility rate for the Horn countries and how that could develop into 2040.

Education empowers girls and women to have a voice and to participate in decision-making. It improves their capacity to address conflict, broker peace and build sustainable communities.

Given the large number of adults without formal education in the Horn, adult education and vocational training are some of the ways that regional governments can meaningfully contribute to the economy and possibly promote greater peace and development in the region.

Basic Infrastructure

Infrastructure, whether in transportation, telecommunications, electricity or water and sanitation, is severely lacking across the Horn region. Most Horn nations ranked near the bottom in infrastructure development as measured by the Africa Infrastructure Development Index (AIDI) produced by the African Development Bank.[132]

The AIDI is made up of four composite indexes for electricity, transport, ICT and water and sanitation. Based on the overall Infrastructure Development Index, Djibouti has the highest infrastructure development score in the Horn region while South Sudan and Somalia have the lowest level of infrastructure development in the region and Africa as a whole (Chart 22).

Energy and electricity

Energy plays a significant role in improving people's livelihoods. When low-cost and reliable electricity is available, it has a positive effect on productivity, industrialisation and poverty reduction. Access to reliable and affordable energy, particularly electricity, is crucial to any modern economy, especially in this era of the digital revolution.

Despite this, only 45% of the population in the Horn region had access to electricity in 2019. This access rate is, however, above the average for low-income Africa, which was about 25.4% in the same year. Chart 23 shows the trend in electricity access in the Horn of Africa. On the Current Path, 56% of the population in the Horn of Africa will have access to electricity by 2030, and about 71% in 2040. This is above the projected average for low-income Africa (49.2%) but below the projected average for lower middle-income Africa (79.3%) in 2040.

At the country level, electricity access ranges from 63% (highest) in Djibouti to 21.3% (lowest) in South Sudan. On the Current Path, Djibouti will have the highest electricity access rate (about 80%) by 2040, on par with lower middle-income Africa, while South Sudan will record the lowest access rate (24%).

The energy needs of Djibouti are met almost entirely through the import of fossil fuels, and it also imports most of its electricity. The main energy sources of the population are electricity, liquid petroleum gas and kerosene.[133]

Djibouti before 2011 was 100% dependent on heavy fuel oil and diesel thermal power plants for energy that exposed the country to fluctuating oil prices. Now, 65% of the country's electricity needs are provided through an interconnection with the Ethiopian grid.[134] Local power production, now accounting for around 35% of the energy supply, continues to be generated through local heavy fuel oil or diesel thermal power plants, with a total power generation capacity of 126 MW.

Cognisant of the strategic importance of a reliable and stable energy supply, the government of Djibouti has taken steps to increase energy security by putting more emphasis on renewable energy. The country's National Development Plan, Vision 2035, plans a transition from fossil thermal to 100% renewable energy. In this vein, legislation has been passed to open electricity generation to private sector involvement. The law provides a tax exemption for all renewable energy equipment.[135] This is a critical step towards the exploration of the country's untapped renewable energy resources (geothermal, wind and solar resources).

Ethiopia has abundant renewable energy resources and has the potential to generate over 60 000 MW of electric power from hydroelectric, wind, solar and geothermal sources.[136] Despite this energy potential, Ethiopia is experiencing energy

shortages. Over the past decade, the Ethiopian government has managed to expand the electricity grid to nearly 60% of the country—from only 667 towns and villages to approximately 6 000. has managed to expand the electricity grid to nearly 60% of the country—from only 667 towns and villages to approximately 6 000.[137]

However only 45% of the population has access to electricity. This means that more than 60 million people are still without access to electricity in Ethiopia. On the Current Path, access to electricity in the country is projected to be 74.5% by 2040, but the target is universal energy access by 2025, with 35% being off-grid and 65% grid.

Ethiopia currently has about 4 500 MW of installed electricity generation with 89% of the installed generation capacity from hydropower, while 8% and 3% are from wind and thermal sources respectively. The government aims to increase generating capacity to 25 000 MW by 2030 (22 000 MW of hydro; 1 000 MW of geothermal; and 2 000 MW of wind).[138]

The Grand Ethiopian Renaissance Dam (GERD), with a projected installed capacity of 5 600 MW, will contribute significantly to achieve this target. However, the GERD is the subject of a regional dispute as Sudan and Egypt are concerned that the rapid filling of the dam will undermine their water supplies, which come almost entirely from the Nile. A mutually agreed solution would help Ethiopia boost its industrialisation and economic development and earn hard currency through the export of electricity.

Eritrea's electric power is provided through fossil

fuels. Electricity is available only at a limited part of the country through the Eritrean Electricity Authority. Electricity access remains low for rural villagers. About 90% of the current installed generation capacity of 160 MW is from diesel generators (Hirgigo 132 MW and Beleza 17 MW).[139] The existing electricity distribution network is outdated and prone to failures. In 2019, IFs forecast the national electrification rate in Eritrea at 57% (33% in rural areas, 74% in urban areas).

Somalia's energy sector faces significant challenges due to a weak regulatory environment, lack of sufficiently trained labour, weak infrastructure, insecurity and political instability, among others. The country's national electricity grid collapsed during the civil war in 1991 and is now provided by private firms. Despite the recent progress made by the private sector in increasing electricity production and distribution, annual electricity consumption per capita in Somalia is among the lowest in Africa. Consumers pay a high rate of 50-125 cents/kWh compared to 0.6 cents/kWh in Ethiopia.[140]

To date, there is an installed generation capacity of 106 MW (diesel 100 MW; solar/wind: 6 MW). A recent African Development Bank report reveals that Somalia has the highest potential of wind energy resources of any African nation. It could generate 30 000 to 45 000 MW of electricity from wind. As of 2019, only 31% of the population has access to electricity. On the Current Path, access to electricity in Somalia is projected to reach 45.8% by 2040.

The government of Sudan has invested extensively in the production and distribution of thermal and hydroelectric power over the past decade. Power generation capacity has doubled, rising from around 8 455 MW in 2011 to 17 064 MW in 2018.[141] Sudan also imports Ethiopian electricity. Despite this growth, the power demand exceeds the available supply regularly, resulting in frequent power outages. Fifty-one per cent of the population had access to electricity as of 2019, and by 2040, it is projected to be 61%.

Traditional biomass (firewood and charcoal) still provides most of the population's energy needs, with environmental and health issues associated with it. Wind energy is not yet developed, although Sudan has the potential, with average wind speeds of 4.5 meters per second across 50% of the country.

Since its average sunshine duration ranges from 8.5 to 11 hours a day, Sudan is also considered one of the best countries for exploiting solar energy. To date Sudan's solar energy achievements are however very poor. It has no solar capacity attached to the grid and total installed photovoltaic capacity only comes to about 2 MW.[142] Improving the energy sector,

which is vital for increasing production and reducing poverty in Sudan, still requires considerable investment.

In South Sudan, access to electricity is very limited. There has never been a backbone for electricity transmission since the colonial era and none was developed during rule from Khartoum.[143] Three isolated distribution networks situated in the three urban centres of Juba, Wau and Malakal constitute the only accessible network. Generation sources connected to the grid consist solely of thermal generators (diesel and heavy fuel oil).

Total installed capacity for the entire country is 30 MW. As of 2019, only 21% of the population had access to electricity, and suffer from routine power outages and lack of reliability.[144] The rest of the population relies, among others, on firewood, solar, petroleum, and individual generators. By 2040, access to electricity is estimated to be 24%, well below the average for low-income Africa. Overall, South Sudan and Somalia have the lowest per capita electricity usage in Africa.

Transport and ICT infrastructure

The level of economic development in a country can be tracked by looking at its infrastructure in the transport and communication sectors. Chart 24 presents selected transport and communication indicators for the Horn of Africa countries. With a few exceptions, transport and communication infrastructures in the Horn are generally underdeveloped, although those of Sudan and Djibouti are relatively developed compared to Eritrea, Somalia and South Sudan.

The share of paved roads in the total road network ranges from 47% in Djibouti to 0.3% in South Sudan, while the number of Internet users ranges from 56% of the population in Djibouti to 1.3% in Eritrea. Sudan has the longest railway network and the highest number of mobile phone subscribers per 100 people in the Horn of Africa.

Due to a lack of proper maintenance and repairs caused by conflicts and political instability, transport infrastructures are in particularly poor condition in Somalia and South Sudan. For example South Sudan ranked 54th of 54 on the 2020 African Development Bank's Transport Composite Index.

The total length of South Sudan's road network is approximately 90 200 km, with only 300 km paved, and much of the rest in disrepair. During the rainy season, large parts of the country become inaccessible while bridges for crossing rivers are lacking in other areas. As a landlocked country, South Sudan depends on its neighbours for access to the sea, including connectivity with an undersea fibre-optic cable.[145]

Weak transport conditions constitute a significant impediment to South Sudan's economic and social activity. Around 60% of South Sudanese firms consider transport as a serious obstacle to doing business.[146] Somalia, on the other hand, has no railways and almost all its main roads are highly dilapidated.

Ethiopia and Sudan have made significant progress in expanding their road network. For instance, Ethiopia's road network increased from 19 000 km in 1990 to 120 171 km in 2018 with 16% paved. The country has spent about US\$11 billion on road building over the past 20 years that now accounts for about 25% of the federal government's annual infrastructure spending.[147]

Ethiopia uses the neighbouring Djibouti as the main access to the sea for its import-export business. Initially this occurred via a paved road until the completion of an electrified railway line of 750 km connecting Addis Ababa with Djibouti at a cost of US\$4 billion. Peaceful relations with Eritrea open up new opportunities such as a planned railway line between Addis Ababa and the Eritrean port of Assab, as well as two new roads linking the two countries.[148]

Like Ethiopia, Sudan has invested heavily in road infrastructure in recent years. Some 3 477 km of road, representing 33% of the network in 2011, were added to the road network during the period 2011–2018, taking the total paved road network to 10 595 km or 34% of the total road network in 2018.[149] Despite the significant increase in the length of the road network over the past decade, large portions of the country still lack roads.

Darfur remains the most disadvantaged region in terms of transport linkages to the rest of the country. Sudan needs considerable investment in its roads connecting remote regions to exploit its agricultural potential, and to use its strategic location to link four landlocked neighbours (South Sudan, Chad, Central Africa and Ethiopia) to Port Sudan on the Red Sea. Overall, the poor transport infrastructure delays or entirely restricts the movement of goods from one place to another in the Horn of Africa.

In terms of ICT, Ethiopia, Djibouti and Eritrea are the only three countries in the world that have maintained state monopoly on all telecommunication services, including fixed lines, mobile, Internet and broadband. As a consequence, penetration rates have remained low despite the progress made in recent years. For instance, only about 1% of the population in Eritrea and 19% in Ethiopia are Internet users.

The lack of competition prevents the market from living up to its potential. Opening the sector to competition and foreign investment would make quality telecommunication services available at affordable prices for the population. It would also allow these countries to have a vibrant digital economy while pushing innovations such as mobile money services.

Things are moving in this direction, especially in Ethiopia and Djibouti. As part of its ambitious plan to modernise the economy, the Ethiopian government has taken major steps to move from a state-oriented development model and liberalise key sectors, including telecommunications. In 2019, the Ethiopian Parliament passed a new telecommunications law that led to the establishment of an independent regulator, the Ethiopian Communications Authority.

Efforts to partially privatise the public operator Ethio Telecom and open the market to new licences are also under way.[150] In May 2021, the Ethiopian government granted telecoms operating licences worth US\$850 million to Kenya's Safaricom-led consortium.[151] Similarly, in line with the Djibouti Vision 2035 policy objectives, the government has put in place a specific strategy for ICT intending to develop the sector and generalise access to telecommunications services.

The expansion of digital access does come with some risks to governments. It provides the means for social mobilisation and greater access to information that could, if combined with a youth bulge, expanding education and limited opportunities, prove destabilising.

During the civil war, the public telecom infrastructure in Somalia was almost entirely dismantled. The mobile sector currently has seven private networks (Golis Telecom, Hormuud Telecom, NationLink Telecom, Somtel, Telcom, Telesom and Amtel) that boost the ICT sector along with submarine cables. This ends Somalia's dependence on costly satellite connectivity for internet access.[152]

A new telecommunications regulatory body has also been established with a mandate to address the problems with frequency spectrum coordination and interconnection between networks.[153] Mobile phone subscription (per 100 people) is 49 while users of the Internet as a percentage of the population stand at only 2%.[154]

Despite some improvements, the ICT sector in South Sudan is one of the world's least developed, while future growth of the sector is hindered by instability, insecurity, widespread poverty and low literacy rates. For these reasons the few private companies on the market have limited the areas in which they provide services.[155]

Sudan has one of the most liberalised ICT sectors in Africa. Zain, MTN, Sudatel and Canar are four licensed

telecommunications operators in Sudan, all wholly owned by foreign firms, with the exception of Sudatel, in which the state owns a 22% share.[156] Recent connection to an undersea fibre-optic cable has led to access extensions, efficiency upgrades and reduced telecommunications costs.[157] In 2019, the number of cellphone subscribers stood at 77 per 100 individuals and mobile phone coverage reached around 80% of the country. Sudan has a high mobile subscription rate per 100 people relative to its peers. Thirty-one per cent of the population are Internet users, placing Sudan at a far higher pace relative to all the Horn nations (except Djibouti).

Water and sanitation

Access to safe water and sanitation is uncertain for millions of people in the Horn of Africa. Higher temperatures, prolonged droughts, high population growth and increasing migration place a strain on water resources.[158] In recent history, the region has experienced recurrent drought due to global climate change and related environmental shocks, which contribute to poverty, population displacement, biodiversity loss and increased conflict.

The Nile is a key source of fresh water in the region. As such, it has been a recurrent source of social and political tensions between Nile Basin countries, especially with the recent GERD construction, which Egypt sees as a threat to its water security. Djibouti, for example, does not have a permanent source of surface water such as rivers or freshwater lakes. It depends on deep underground water tables, where they exist, fed by rainwater infiltration. The country has been adversely affected by recurring droughts since 2009.[159]

Many herders and rural dwellers have lost their livelihoods, and countless families have seen their incomes dramatically reduced and are forced to seek shelter in urban centres.[160] As a result of climate change, the Horn region is projected to experience significant variations in rainfall and temperatures, and this is likely to exacerbate water insecurity in the region.

As of 2019, about 38.3% of the population in the Horn region had access to piped water, and 19.8% to improved sanitation (Chart 25). The regional average of piped water access is above that of low-income Africa while the region remains below the average for low-income Africa in terms of access to improved sanitation. On the Current Path, access to piped water is projected to be about 73% by 2040, above the projected average of 52% for low-income Africa in the same year.

As shown in Chart 25, access to safe water and sanitation is not homogenous across the Horn region. Djibouti has the highest access rates of improved water and sanitation in the region and is above the average for its peers (lower middle-income Africa), due to its tiny population and small size. However, major disparities exist between urban and rural areas in Djibouti. While about 70% of urban residents have access to sanitation facilities, only 16.4% have access to latrines in rural communities.[161]

In Ethiopia, about 33 million people do not have access to an improved source of water while 89 million people remain without access to improved sanitation. In rural Ethiopia, many women and children walk several hours to collect water, often from shallow wells or unprotected ponds that they share with animals.[162]

Nearly 90% of South Sudan's population has no access to improved sanitation, making it the country with the lowest access rates in the region, although slightly better than for Ethiopia. In South Sudan, only 17% of schools have suitable latrines. The chance of contracting waterborne diseases such as diarrhoea, cholera, hepatitis, typhoid or Guinea worm disease in the country is one of the world's highest.[163] Continuing conflicts, instability and bad governance have made access to clean water scarce and often lead to tensions between communities.

Access to safe water and sanitation is also a major problem in Eritrea and Somalia. According to UNICEF, diarrhoeal

disease, which is often caused by contaminated water sources, is the leading cause of death for children under the age of five in Eritrea. Around half of Somalia's population does not have access to a basic source of water. Restricted control of private suppliers of water also leads to high costs, requiring families to retrieve water from remote and dangerous open wells; open defecation is a common occurrence, with 28% of the population defecating outdoors.[164]

Water scarcity is a significant cause of conflict in Somalia's nomadic pastoralist societies. According to a study commissioned by Somalia's Ministry of Planning in partnership with development partners, scarcity of drinking water along with food insecurity contribute significantly to rural conflict, child malnutrition and waterborne disease in the country.[165]

The Jubba and Shabelle rivers are Somalia's main sources of water, and both sources flow from Ethiopia. A national water policy to regulate and manage internal water resources and a Somalia-Ethiopia bilateral agreement on the mutual waters of the two rivers are indispensable to improve water security in Somalia.

As for Sudan, access to improved sources of water and sanitation has experienced some improvement in recent years, although the water and sanitation sector is facing several key constraints. These include weak sector coordination capacities and a lack of resources for investment in the provision of water facilities.[166] About 60% of the population in Sudan is still without access to improved sanitation.

Overall, the Horn of Africa performs poorly in the water and sanitation sector. This increases the prevalence of preventable diseases, including cholera, measles and acute respiratory infections, among others. Also, girls and women are often responsible for water collection, especially in the rural areas, and this limits their time and possibility to go to school and work. In Somalia, for instance, a single trip to fetch water can, on average, take more than an hour.[167]

Several actions are being taken in collaboration with international organisations and NGOs to improve the population's drinking water and sanitation issues. These include UNICEF, the World Bank, EU, US Agency for International Development and Water.org, among others. To date, for example, Water.org has reached more than 256 000 people with access to safe water and sanitation in Ethiopia. And the Djibouti National Water and Sanitation Office has embarked on a major sanitation programme with the financial support of the EU.[168]

In sum, increasing access to basic infrastructure such as electricity, transport and communication as well as safe water and improved sanitation in the Horn region could produce major benefits in terms of people's living conditions. This could help to achieve the SDGs.

Scenario Development

The preceding Current Path analysis has revealed that the Horn of Africa is one of the world's most challenging regions for security and development. Political instability, widespread insecurity, conflict and bad governance impede human and economic development. Can these countries perform better than the Current Path forecast? Are they at risk of regressing below the Current Path forecast?

The futures of these countries will be shaped by the policy choices that their leaders make and the dedication with which those policies are implemented. We evaluate the impact of the scenarios against the Current Path forecast presented in the previous sections.

It is not difficult to see how a combination of developments could launch the region on a positive trajectory. The

rapprochement between Eritrea and Ethiopia that started in 2018 was unthinkable under the leadership of Ethiopia's long-standing prime minister Meles Zenawi. Yet within a few weeks, Prime Minister Abiy Ahmed ended competition and conflict between the neighbours that had cost thousands of lives.

The end of the border conflict was followed by a series of trilateral meetings between the leaders of Eritrea, Ethiopia and Somalia who proposed a new regional bloc, the Horn of Africa Cooperation. Critics pointed to the fact that the proposed arrangement appeared primarily aimed at providing landlocked Ethiopia with alternative access to the sea (beyond only Djibouti) and as a ploy to return Eritrea to the international fold.

Yet the potential for closer collaboration between the three countries was followed by the chain of events in Sudan that saw the departure of its long-standing dictator to eventually be replaced by Hamdok, a respected international economist.

There are numerous other developments that, taken collectively, could launch the region on an entirely new trajectory. Externally, it would require a common approach among the Gulf states that peace, stability and development in the Horn would be in their interest. When the Gulf states cease to instrumentalise countries in the Horn for their domestic interests and work together, their considerable financial muscle, including that of countries such as Turkey, could positively impact the entire region.

Positive engagement from the Horn's large diaspora community would similarly have positive effects. As would the realisation that the region needs to embrace a collaborative vision on the use of key natural resources—the Nile River in particular. The acrimony and competition that has swirled around the GERD, as one example, demands an approach premised on the shared management and use of key natural resources.

Yet the region is unlikely to find a positive footing without domestic reform, particularly to unlock the potential of the informal sector and small and medium enterprises in providing employment opportunities for its large youth bulge.

The scenarios components presented in Chart 26 constitute the combined impact of such a positive scenario. It consists of efforts to improve governance, agricultural production, human capital, and basic infrastructure. The components are subsequently combined into an Integrated Development Push scenario that is compared with the Current Path.

In line with the second 10-year implementation plan for Agenda 2063, the interventions within each cluster commence in 2024 and present a subsequent 10-year push to 2033 with the improvements subsequently maintained out to 2040. This period coincides with the second 10-year implementation plan of the African Union's (AU) Agenda 2063 long-term vision for the future of Africa.

We argue that the Horn nations should first focus on the fundamentals. The interventions are all benchmarked with aggressive but reasonable targets that have been achieved by countries that are at similar levels of development or had the same challenges as the Horn of Africa countries (see annexure).

Chart 26: Intervention clusters

Source: Authors

It would be easy to craft and describe a negative scenario (bleak future) for the Horn given the current situation in the region characterised by myriad political, security and social crises. These include events in Tigray that have inserted Eritrean military forces into the territory of Ethiopia, with subsequent clashes between the Oromo and Amhara ethnic

groupings, and between Ethiopia and Sudan over the al-Fashaga triangle.

Other problems include military action by Egypt to destroy or damage the GERD, increased terrorism in Somalia, and further escalation of the war of words between Somalia and neighbouring Kenya on their maritime boundary. The possibility of harsh drought causing a significant decline in crop yield and rising food prices across the region also contributes to this negative scenario. As does the disintegration of the South Sudanese unity government and the failure of the transitional government associated with severe economic woes in Sudan.

There is, however, little policy value in modelling such a scenario. It would require large-scale humanitarian action by the international community and lead to the reversal and destruction of the progress achieved, most prominently in Ethiopia. We prefer to be optimistic about the future of the region and hence focus on how to improve the countries' long-term development prospects.

Improved Governance component

In this component, we proceed on the premise that the Horn nations are able to make progress towards greater stability, which is crucial to improving the well-being of millions of people plagued by famine and severe multidimensional poverty in the region.

Keeping the region stable will allow the Horn nations to focus on their domestic goals. Thus we assume that the AU Border Programme, the Horn governments and the various borderland communities have agreed on the demarcation of the Horn nations' borders. And that there is a clear and strong commitment—including from the Gulf countries—that they do not interfere in their neighbours' internal affairs.

With the support of the international community and countries such as China, the EU and the US, the sum impact would result in a de-escalation of the ongoing rivalries that have caused so much instability in the Horn of Africa.

Furthermore, we proceed on the premise that with visionary leadership and sincere political will, the Horn governments promote national unity and pursue settlements that distribute power more widely and desist from ethnic and religious mobilisation for political purposes. In other words, they foster a democratic culture based on respect for the rule of law, consensus building, fair policymaking, and equitable division of power and resources. This would lead to more political freedom and civil rights, gender empowerment and a sense of unity in the Horn nations. We recognise that change would be difficult, particularly in Eritrea, Somalia and South Sudan.

The support of the international community would be important as the Horn governments work at improving governance institutions and strengthening state capacity, particularly in Somalia and South Sudan in the aftermath of elections. All parties would need to commit to dialogue and reconciliation.

Fighting rampant corruption in the Horn countries is a prerequisite for good governance and the rule of law, which are the foundation for sustainable development. Progress will only happen if the Horn's authorities set up effective and efficient anti-corruption agencies, and if leadership commits and demonstrates no tolerance of this endemic cancer that permeates all levels of administration.

Also, the economies of the Horn of Africa countries are among the most closed in Africa, resulting in poor scores in the World Bank's ease of doing business index. Progress with this component implies that the governments implement the necessary policies and reforms to improve business regulation, reduce bureaucratic difficulties and improve economic freedom to promote an environment that is attractive to domestic and foreign investments.

In this scenario component, the regional GDP increases by about US\$98 billion (15%) relative to the Current Path in 2040.

The average income increases by about 10% while the total number of poor people in the region is eight million fewer than on the Current Path in the same year.

At the country level, the size of the Ethiopian economy increases by nearly US\$72 billion (16%) as compared to the Current Path in 2040, while the GDP per capita is US\$571 larger than on the Current Path. The number of people living in extreme poverty in Ethiopia is about three million fewer than the projected value on the Current Path in 2040

In Sudan, the Improved Governance scenario component respectively increases the GDP and GDP per capita by about 12% (US\$19.9 billion) and 7.6% (US\$420.7) relative to the Current Path in 2040. The poverty rate also declines by nearly three percentage points which translates to about two million fewer poor people compared to the Current Path in the same year.

As for South Sudan, the size of its economy and average income increase respectively by US\$1.7 billion (about 12%) and US\$191 (8%), relative to the projected values in 2040 on the Current Path. The scenario also reduces the size of the population of South Sudan living in extreme poverty. The poverty rate declines to 36.6% by 2040 against 41.6% on the Current Path. This is equivalent to a five percentage-point decline in extreme poverty rate or 632 000 fewer poor people than on the Current Path.

In this scenario component, the size of the Somalian economy increases by US\$1.8 billion (about 15%) as compared to the Current Path in 2040 while the GDP per capita is US\$130 (11%) larger than on the Current Path. The number of people living in extreme poverty is about two million fewer than the projected 12.3 million on the Current Path in 2040.

In Eritrea, the size of the economy and the average income respectively improve by about 16% (US\$1.2 billion) and 10.6% (US\$330) relative to the Current Path in 2040. The poverty rate also declines by nearly 6.5 percentage points which translates to about 331 000 fewer poor people relative to the 2.1 million projected on the Current Path in 2040.

As for Djibouti, the size of its tiny economy and GDP per capita increase by US\$0.9 billion (about 16.9%) and US\$724.8 (nearly 11%), relative to the projected 2040 Current Path values. The scenario also reduces the number of people living in extreme poverty. The poverty rate declines by 4.6 percentage points compared to the Current Path in 2040 (60 000 fewer poor people).

Improving governance is an important vector to promote inclusive growth in the Horn nations. In absolute terms, the most significant impact of this scenario is found in the two largest economies of the region, namely Ethiopia and Sudan. However, in percentage change, the scenario causes the most significant improvement in GDP and GDP per capita respectively in Djibouti and Ethiopia, while Somalia achieves the largest decline in extreme poverty rate.

Chart 27 shows the impact of the Improved Governance component on FDI flows to the Horn of Africa countries. In absolute terms, Ethiopia and Sudan receive the bulk of additional FDI inflows while Djibouti, Sudan and Eritrea are the major recipients when measured as a percentage of GDP. This finding is in line with the idea that political stability is one of the key determinants of FDI in much of Africa.

Given its strategic location, improvement in governance, security and stability in the Horn region could attract more FDI, especially to manufacturing and services sectors. This investment could contribute to building a dynamic private sector, which is crucial for economic diversification, job creation and poverty reduction. This is particularly important for Ethiopia, which seeks to build a strong manufacturing sector. If the conflict in Tigray drags on, it will be hard for the country to attract foreign investors into its manufacturing sector, which relies heavily on foreign investment.

Agricultural component

Agriculture is a crucial lifeline for most of the population in the Horn of Africa. About 70% of the labour force in the Horn works directly in the agriculture sector. However, limited arable land, low productivity, conflicts, water scarcity and poor infrastructure along with droughts and other climate-related shocks hinder agricultural production.

Millions of people experience hunger and undernutrition in the region, which relies heavily on imported foodstuffs. Djibouti, for instance, imports 90% of its food. This makes the Horn countries vulnerable to international price volatility and erodes their current account balances.

In this scenario component, we proceed on the premise that international development partners, Gulf states and countries like China work closely with the Horn governments. Together they address the challenges faced by agriculture production by providing financial, technical and logistical assistance. Thus, the constraints posed by the limited available arable land and the recurrent droughts are circumvented by investing in improved irrigation techniques, climate-smart technologies and drought risk management for climate-resilient agriculture.

Also, efforts are made to improve access for poor farmers to productive resources such as credit, agricultural inputs (fertilisers, high-yielding seeds, pesticides and herbicides), farm and off-farm extension services and technology. Agricultural science and research are promoted by enhancing the capacity of local universities and research institutions specialised in agricultural science and technology.

Governments of the Horn states also engage in broad land reform and strengthen land tenure for all the population, including vulnerable and minority communities. The rollout of well-designed land reform allows farmers to access credit and to invest in their land. The amount of land under cultivation increases where this is possible. These policies and actions raise agricultural productivity and production in the Horn countries.

To ensure that the food produced makes it to the domestic markets, governments improve rural infrastructure to reduce agricultural losses along the supply chain from producer to consumer. They also enhance the functioning of food markets to facilitate the connection between food surplus and food deficit areas. To improve food access for the chronically food insecure people, Horn governments design social protection programmes using in-kind support such as free food banks for the vulnerable, with the support of development partners and international NGOs.

In sum, this scenario component improves food production and availability by increasing land under cultivation, irrigation facilities, crop yields, the provision of rural infrastructure such as storage facilities and reducing other inefficiencies in the production system.

Making this scenario component a reality would increase the average crop yield to 5.1 tons per hectare, which is above the projected average for low-income Africa but far below the levels of Rwanda in 2040. The average agricultural production is about 254.6 million metric tons by 2040, 65% higher than the Current Path forecast for the same year.

Agricultural imports decline by 57.8% relative to the Current Path by 2040 while the average number of malnourished people in the region decline by about 22% compared with the Current Path. This translates to 8.1 million fewer malnourished people than the Current Path forecast in 2040.

The size of the regional economy is US\$67.5 billion (10.3%) larger than the Current Path forecast in 2040 while the GDP per capita increases by US\$322.6 (about 7%) compared to the Current Path. The average number of people living in extreme poverty (less than US\$1.90 per day) in the Horn region is nearly eight million fewer than the projected 36.9 million on the

Current Path in 2040. This is equivalent to a 2.6 percentage-point decline in the poverty rate relative to the Current Path.

At the country level, the agricultural component increases Ethiopia's GDP by US\$41.4 billion (9.3%) compared to the Current Path in 2040, while the GDP per capita is US\$260 (about 5.6%) larger than the Current Path forecast. The number of people living in extreme poverty is about four million fewer than the projected value on the Current Path in 2040, a two percentage-point decrease in the poverty rate.

For Sudan, the agriculture scenario component respectively increases the GDP and GDP per capita by about US\$21.9 billion and US\$535.2 relative to the Current Path in 2040. The extreme poverty rate also declines by three percentage points which translates to more than two million fewer poor people compared to the Current Path.

In the agriculture scenario component, the size of the Somali economy increases by US\$1.4 billion (about 11%) as compared to the Current Path in 2040 while the GDP per capita is US\$98 billion (7.5%) larger than on the Current Path. The poverty rate declines by about 4.5 percentage points, which translates to 1.2 million fewer poor people than the projected 12.3 million on the Current Path in 2040.

The agriculture component also has a positive impact on economic growth and poverty reduction in Eritrea. Indeed, the size of the Eritrean economy and the GDP per capita, respectively, improve by about 11.4% (US\$1.1 billion) and 9% (US\$283.4) relative to the Current Path in 2040. The poverty rate also declines by 6.9 percentage points relative to the Current Path in 2040.

This scenario component increases South Sudan's GDP and GDP per capita respectively by US\$1.7 billion (11.5%) and US\$209.3 billion (8.6%) relative to the projected values in 2040 on the Current Path. The poverty rate declines to 38.6% by 2040 against 41.6 % on the Current Path. This is equivalent to a decline of 2.9 percentage points in extreme poverty rate relative to the Current Path in 2040.

The Agriculture scenario component has a marginal impact on GDP, GDP per capita and poverty reduction in Djibouti. The GDP increases by US\$0.09 billion (about 1.7%) while the average income improves by US\$73 billion (0.9%) relative to the Current Path forecast in 2040. The poverty rate declines by 1.3 percentage points compared to the Current Path in 2040.

The Agriculture scenario component improves GDP and GDP per capita and contributes to poverty reduction in all the Horn nations. In absolute terms, the most significant impact of the Agriculture scenario is found in Ethiopia and Sudan. In sum, modernising the agriculture sector could be an effective way to improve food security and economic and human development in the Horn of Africa countries, albeit to varying extents.

Human Capital and Basic Infrastructure component

High population growth, low schooling, dysfunctional health systems and weak infrastructure are hindering economic and human development in the Horn of Africa. Somalia, for instance, has the second highest fertility rate in the world while South Sudan and Somalia have the lowest per capita electricity usage in Africa.

This growing share of child dependants relative to the working-age population is retarding the population dividend. Reducing fertility and improving access to education, health services and basic infrastructure are crucial for social stability and long-term inclusive economic growth in the Horn.

In this scenario component, we proceed on the premise that the Horn nations, especially Ethiopia, Eritrea, South Sudan and Somalia, have acknowledged the importance of reducing fertility in the attainment of the SDGs relating to poverty, education and health. They have therefore crafted and implemented a set of policies that include, among others, raising

the minimum legal age for marriage, providing access to safe and effective cost-free (or low-cost) contraception and improving female education and employment opportunities.

Education is an important vector of change; it improves health and livelihoods. Thus, the Horn governments collaborate closely with development partners and NGOs to improve access to education. They do this by improving the availability of learning institutions and addressing language barriers that adversely affect participation in education. Also, they address issues that disproportionately affect disadvantaged and marginalised communities to improve equitability in access. They encourage female education to reduce inequality in education access between boys and girls. In this vein, legislation and sensitisation programmes and campaigns are put in place to address the socio-cultural barriers to girls' participation in education.

Efforts are also made to drive more students into technical and vocational training through scholarships and other incentives. The quality of education is typically even more important than increased access. Therefore the Horn nations take measures to improve the quality of education to provide the needed skills for the job market.

In addition to the strengthening of the education system, the Horn countries also work at improving the health system. Dysfunctional health systems, financial constraints and limited availability of services hinder access and use of health services in the Horn.

In this scenario component the health authorities in the Horn region, together with international development agencies, define policies, plans and strategies to improve access to affordable healthcare. They focus on reducing widespread acute and chronic malnutrition and communicable diseases by improving access to safe water and improved sanitation, providing feeding programmes for children and pregnant and lactating women.

They distribute ready-to-use therapeutic food, micronutrient powders and lipid-based nutrient supplements, among others, to treat children suffering from severe and acute malnutrition. Efforts are also made to integrate safe motherhood programmes into the primary health system. To improve the quality of health service delivery, a special programme is designed to support health workers' capacity development. These policies and actions significantly reduce neonatal mortality and infant and maternal mortality in the region.

The Horn governments also improve access to other core infrastructures such as electricity and ICT. They invest in renewable sources of energy and mini-grid and standalone off-grid systems to increase the share of the population that has access to electricity in both rural and urban areas competitively and effectively. Obsolete machines and other equipment are replaced to reduce electricity transmission and distribution loss.

In recent years, Sudan and Ethiopia have significantly increased their road network. We proceed on the premise that this trend will continue and their peers in the region will follow their path. Physical infrastructure is important to provide access to markets, education and other essentials.

Improvement in road and electricity access is complemented with improvement in ICT access. Liberalising the ICT sector in Ethiopia, Djibouti and Eritrea has intensified competition and made quality ICT services available at affordable costs for the population. This increasing digital connectivity fuels innovative ways to further improve access to basic services such as safe water, improved sanitation and better education.

Should this scenario component materialise, the average fertility rate of the Horn region would decline to 2.5 by 2040, a drop of 41% between 2024 and 2040. This is substantially lower than the projected average of 3.6 births per woman for

low-income Africa in 2040. The promotion of modern contraceptive use along with the improvement in female education has significantly reduced fertility in the Horn region. On the Current Path, the projected average fertility rate for the Horn in 2040 is 3.1 births per woman.

In this scenario component, the regional GDP is US\$42.3 billion (6.5%) larger than the Current Path forecast in 2040. The GDP per capita is US\$325 billion (6.9%) larger in 2040 than the projected value on the Current Path. The average number of poor people in the region is 6.3 million fewer in the scenario than the Current Path forecast in the same year. However, this regional picture masks large differences between countries when comparing the impact of this scenario component. In absolute terms, the impact of the scenario on GDP, GDP per capita and poverty reduction is larger in Ethiopia and Sudan than in the other Horn countries.

In Ethiopia, the scenario leads to a sizable increase in GDP (US\$28.6 billion or 6.4%) relative to the Current Path forecast in 2040. The GDP per capita of Ethiopia is also US\$363 higher than on the Current Path in the same year. Family-planning policies associated with an investment in health, education and basic infrastructure have significant potential to promote inclusive growth in Ethiopia. Indeed the poverty rate in this scenario declines by about 1.1% which is equivalent to 2.2 million fewer poor people compared to the projected 8.9 million on the Current Path in 2040.

In Sudan, the scenario increases the size of the economy and the average income respectively by US\$10.8 billion (6.4%) and US\$342 billion (about 6.2%) relative to the Current Path forecast in 2040. The number of poor people in this scenario is more than 1.5 million fewer than the Current Path forecast in the same year. This translates to a nearly two percentage-point decline in the poverty rate.

The GDP of Somalia increases by US\$0.91 billion (about 7.4%) compared to the Current Path in 2040 while the GDP per capita is US\$100 billion (7.6%) larger than on the Current Path. The poverty rate declines by about 5.3 percentage points, which translates to 1.7 million fewer poor people than on the Current Path.

In line with its peers, Eritrea records positive outcomes in terms of economic and human development in this scenario. Indeed, the size of the Eritrean economy and the average income, respectively, improve by about 7% (US\$0.5 billion) and 5.8% (US\$181 billion) relative to the Current Path in 2040. The poverty rate also declines by 3.2 percentage points relative to the Current Path forecast in 2040.

This scenario component increases South Sudan's GDP and GDP per capita respectively by US\$1.1 billion (about 7.3%) and US\$157 billion (6.5%) relative to the projected values in 2040 on the Current Path. The poverty rate declines to 38% by 2040 against 41.6% on the Current Path. This is equivalent to a 3.6 percentage-point decline in the extreme poverty rate or half a million fewer poor people than on the Current Path in 2040.

Similarly, this scenario increases Djibouti's GDP by US\$0.35 billion (about 6.7%) while the average income improves by US\$378 billion (6.3%) relative to the Current Path forecast in 2040. The poverty rate declines by 2.1 percentage points compared to the Current Path in 2040.

In sum, these findings reveal that a concerted push to reduce fertility and improve education, health services and basic infrastructure provision could be an effective lever to boost economic growth and human development in the Horn of Africa countries.

Comparing the impacts of scenario components

The scenario components have a positive impact on development indicators and economic growth in all Horn countries. The Improved Governance scenario component has the most significant impact on the expansion of the GDP per capita in

Djibouti, Ethiopia, Eritrea and Somalia while the Agriculture scenario component has the greatest impact on average income in Sudan and South Sudan (Chart 28).

Djibouti and Eritrea, and Ethiopia (until recently), enjoy political stability but the difficult business climate hinders private investment and growth. Djibouti has one of the highest costs of electricity in the world and broadband Internet service is expensive and of poor quality. Also, the judicial system lacks independence and impartiality.

In Somalia, insecurity, corruption and the lack of legislative frameworks hinder economic growth. The Improved Governance scenario, which improves security, business environment and institutional quality, therefore has a significant impact on growth and income per capita.

Given its limited potential, the Agriculture scenario component has the least impact on Djibouti's GDP per capita. This is expected as only about 0.04% of land in the country is arable. The only way to increase agricultural production is to improve productivity. Djibouti could follow the example of the Netherlands which, despite its small land area, has become

the second largest agricultural exporter globally after the US. However this will require significant investment in climate-smart technologies and productivity-enhancing farming methods.

Chart 29 shows the impact of the scenario components on poverty. In all the countries, the total number of poor people in each scenario component is lower than the Current Path. In other words, all the scenarios contribute to poverty reduction in the Horn of Africa.

The Improved Governance scenario component has the lowest number of poor people living in extreme poverty in Djibouti and Somalia, while the Agriculture scenario component has the lowest number of poor people in Ethiopia, Eritrea and Sudan. In South Sudan, the Agriculture, the Improved Governance, and Human Capital and Basic Infrastructure scenario components are neck and neck in reducing poverty.

Sudan and South Sudan have huge agriculture potential compared to their peers in the region. In these two countries, between 60% and 80% of the working-age population rely on agriculture for their food and livelihoods. The development of the agriculture sector will be crucial for poverty reduction and the consolidation of long-lasting peace in South Sudan.

Djibouti has the lowest number of poor people in the Horn region, even when extreme poverty is measured at US\$3.20 (poverty line for lower middle-income countries), mainly due to its tiny population rather than a deliberate policy to eradicate poverty.

Overall, the findings reveal that improved governance, better agriculture production and investing in human capital and basic infrastructure provision all significantly impact poverty reduction and the expansion of the Horn of Africa economies' countries.

As the agriculture sector employs the largest portion of the labour force in the Horn, investing in the sector would increase income and consumption. Similarly, policy coordination and implementation across the education, health and infrastructure sectors could yield better economic and human development impacts in the region. However none of this is possible without security, peace and stability. Conflicts and insecurity cause significant damages to agriculture production and infrastructure, undermine governance effectiveness and curtail education and health services with negative effects on growth and human development.

The impact of the Integrated Development Push scenario

In this section, we combine the above-mentioned sectoral scenario components into an Integrated Development Push scenario. This Combined scenario simulates the impacts of a coordinated push across development sectors on the future of the Horn of Africa countries. Chart 30-a and 30-b show the impact of the Integrated Development Push scenario on the expansion of the Horn Africa economies.

The Integrated Development Push scenario unlocks economic growth in the Horn countries. In absolute terms, Ethiopia and Sudan get the most significant improvement in GDP. These two countries have the largest economies in the region and account for nearly 90% of the regional GDP. In the Integrated Development Push scenario, Ethiopia's economy is US\$144 billion (32.2%) larger than on the Current Path in 2040, while the Sudanese economy expands by US\$55.1 billion (32.7%) relative to the Current Path forecast in the same year (Chart 30-a).

After Ethiopia and Sudan, South Sudan experiences the largest change in the size of its economy compared to the Current Path, closely followed by Somalia, Eritrea and Djibouti (Chart 31-b). The GDP of South Sudan, Somalia, Eritrea and Djibouti are, respectively, US\$4.8 billion, US\$4.7 billion, US\$2.9 billion and US\$1.3 billion larger in the Integrated Development Push scenario than the projected values on their current development trajectories in 2040. The regional GDP in the Combined scenario is US\$212.9 billion larger than the Current Path forecast in 2040.

Chart 31 shows the impact of the Integrated Development Push scenario on the GDP per capita of the Horn countries. All the countries receive a positive contribution to GDP per capita in this scenario. However, in absolute terms, Sudan records the most significant improvement in GDP per capita compared with the Current Path. Sudan is followed closely by Ethiopia while Somalia has the least improvement in GDP per capita compared with the Current Path in 2040.

The improvement in GDP per capita relative to the Current Path in 2040 is US\$1 346 in Sudan, US\$1 339 in Ethiopia, US\$1 149 in Djibouti, US\$831 in Eritrea, US\$577 in South Sudan and US\$366 in Somalia. At the regional level, the GDP per capita in the Combined scenario (the Integrated Development Push scenario) is US\$1 218 larger than the Current Path forecast in 2040.

As shown in Chart 32, the Integrated Development Push scenario (the Combined scenario) causes a significant reduction in extreme poverty in the Horn of Africa. In the Combined scenario, Ethiopia has the lowest poverty rate by 2040 (1.4%). But Djibouti with a poverty rate of about 4.4% has the lowest number of people surviving under US\$1.90 per day (50 000) against 2.5 million for Ethiopia. This is due to the large population of Ethiopia, which is about 100 times that of Djibouti.

In absolute terms, Ethiopia gets the most significant reduction in the number of poor people in 2040 compared with the Current Path forecast. In 2040, the Integrated Development Push scenario has about 6.4 million fewer poor people than the Current Path.

After Ethiopia, Somalia gets the highest reduction in the number of poor people. Instead of a nearly 48% poverty rate in 2040 on the Current Path, Somalia has a poverty rate of 31% (4.7 million fewer poor people) in the Integrated Development Push scenario. Somalia is closely followed by Sudan with 4.5 million fewer people in the Combined scenario than on the Current Path. South Sudan has about 1.6 million fewer people in the Combined scenario than on the Current Path. Eritrea has 1.3 million people living in extreme poverty against 2.1 million on the Current Path by 2040.

In terms of poverty rate, Somalia, Eritrea and South Sudan get the most significant reduction in poverty rate in 2040. Compared with the Current Path, poverty rates in Somalia and Eritrea decline by nearly 17 percentage points while South Sudan experiences an almost 12 percentage-point decline in its poverty rate. At the regional level, the Combined scenario reduces the number of poor people by nearly 50% relative to the Current Path. By 2040, the average poverty rate in the Horn is 6.5% against 12.4% on the Current Path.

None of the countries achieves the SDG regarding the elimination of extreme poverty by 2030 even in the Integrated Development Push scenario. This shows how deep-rooted poverty is in the Horn of Africa. Hence, the Horn governments need to take more proactive measures in confronting poverty in the region. Imperative among these is empowering the poor by investing in human capital and reducing fertility to accelerate the demographic transition.

The Integrated Development Push scenario leads to a significant improvement in the Human Development Index in all the Horn countries. This is driven by improvements in education, health and the living standards of the population in the Horn nations. In percentage change, the biggest improvement in the index is recorded by South Sudan and Somalia. These countries improve from a very low base as they have the lowest levels of human development in the world after Niger and the Central African Republic.

In the Integrated Development Push scenario, South Sudan would rank 178th out of 186 compared to 183rd on the Current Path in 2040. Ethiopia would also rank 150th globally instead of 164th on the Current Path in the same year. In this scenario, the regional Human Development Index score is 12% higher than the projected average for other low-income African countries by 2040.

Overall, in the Integrated Development Push scenario, all the Horn countries could experience significant progress in economic and human development. Our findings have revealed that an integrated development push across sectors where the region has become more peaceful and stable could be a key approach to set the region on a path to long-term inclusive sustained growth and development.

The monetary cost for the Integrated Development Push scenario would undoubtedly be high. Funding would inevitably pose a major challenge that would require international donor assistance, foreign investors and efforts to enhance domestic revenue mobilisation, as well as the development of the domestic financial markets.

Conclusion and policy choices

The Horn of Africa consistently challenges Africa's peacebuilding institutions and initiatives and frustrates efforts by the international community to assist. This chronic instability hampers development progress and makes it difficult to conceive a better future for the region without stability.

In fact, it is difficult to envision improvements without a common commitment by the region's countries towards improved governance and development predicated on ending the pursuit of competing security interests. This includes in partnership with their partners in the Gulf, the international community and civil society generally. Even then the quality and capacity of government in the six countries included in this study are quite limited, implying the need for extensive partnerships with local communities and leadership.

It is obvious that progress is predicated on a complete change in the nature of the current regimes in Eritrea and South Sudan and dramatic progress on stability and governance in Somalia. It is also predicated on stability in Ethiopia (a resolution to ethnic mobilisation), an agreement on GERD, and success with the transition in Sudan. Djibouti too needs to change its current governance and accountability practices.

The outlook is particularly grim for South Sudan and Somalia, the most conflict-ravaged countries in the region. For example, on the current development trajectory, more than 40% of the population in Somalia and South Sudan will still be living in extreme poverty by 2040.

Ethiopia has made significant progress across economic and human development indicators over the past 25 years. But if the recent events in Tigray spill out of control, its future could also be under threat since its remarkable progress has been achieved from a very low base. Most of Ethiopia's population continues to suffer from low access to basic services, with more than 80% of them multidimensionally poor.

In light of these challenges, our positive scenario simulates ambitious but realistic interventions across different development sectors that could set the region on the path to long-term inclusive growth and development. The current development trajectory is not destiny. With appropriate political will and dedicated implementation of evidence-based policies, the Horn of Africa can do better than the Current Path forecast. All three intervention clusters improve growth and poverty reduction in all the Horn countries by 2040.

The Integrated Development Push scenario shows that an integrated approach or policy coordination and implementation across development sectors could yield significantly better outcomes regarding economic and human development progress in the Horn of Africa. This scenario combines all three intervention clusters.

The failure of the political elite at leadership is one of the most notable commonalities across the Horn of Africa. It is time for its leaders to set aside their personal interests to address existing conflicts in the region.

Improving security, peace and stability at the regional and national levels is key to creating a favourable atmosphere for development in the Horn. Its nations need to find a way to resolve issues concerning transboundary natural resources, such as the Nile River, to avoid conflicts and maintain regional stability. They also need to effectively manage the ungoverned spaces of their borderland, illegal migrations, transnational organised crimes and small arms proliferation. The number of small arms in the region is reported to be more than two million.

The AU, IGAD and the international community should coordinate their efforts to audit current border disputes and develop an operational mechanism to address them. There should be capacity-building initiatives for border experts in the Horn countries to improve their technical knowledge. This would help to separate border issues from the political battle zones.

Also, the Horn nations should enhance regional integration (free trade, customs union, common market and even monetary union) to improve regional stability and peace. Regional integration can be a powerful vector of peace between nations. This is best illustrated with the European Coal and Steel Community which evolved to become the EU.

To improve security, peace and stability at the national level, the Horn governments should promote social, economic and political inclusion. In this vein, the Horn countries' leaders need to engage in a process of dialogue and building a common vision that is predicated on the development aspirations for the future rather than the divisions of the past.

A solution from within would be the most durable. Thus, the international community and regional organisations should strive to bring together local clan and religious leaders and members of the military, youth, women and government officials to engage in meaningful political dialogue. Through this, they should define for themselves their goals, programmes and cooperative strategies.

The role of the diaspora, who play an important role in influencing political and economic developments in the Horn countries, needs to be considered in the national peacebuilding and state-building process. The leaders should promote a sense of belonging for all citizens by integrating the borderland communities in their welfare and service delivery programmes, as well as criminalising ethnic and religious-based discrimination.

Efforts to restore stability will pay off if they are underpinned by good governance and strong institutions. The key determinants of economic growth depend on governance and the institutions required for accountable and effective governance. Bold governance and institutional reforms are therefore necessary to enhance public service delivery and create an enabling environment for private investment.

In this vein, the Horn governments and policymakers should build effective, accountable and inclusive governance

institutions—but given resource constraints, this will be difficult. Fortunately, there is considerable scope in using modern technology and partnering with development agencies in improving government revenues and hence the capacity of national governments.

None of this is possible without tackling corruption, strengthening the judiciary system to improve the rule of law and providing access to justice for all, especially in Somalia and South Sudan. Good governance will reduce poverty and violent competition for national resources and strengthen the confidence between the states and their citizens.

With assistance from their development partners, the Horn governments need to scale up agricultural production and food access to reduce the widespread malnutrition. This could be done by creating a conducive policy environment as well as making new and sustained investments in improved agricultural inputs and techniques and related supporting services. These include off-farm processing and storage facilities. As there is limited potential to increase cropland in most Horn countries, policymakers should focus on agricultural productivity-enhancing technologies. They should invest in high-yielding drought-resistant seeds and crops as well as fertiliser production and distribution in a timely and cost-effective manner.

They should revamp existing irrigation systems and scale up new investment in irrigation development through public-private partnerships. Sustainable land and water resources management practices are key, as is improving pastoralist and livestock management. In sum, the region should accelerate the adoption of climate-smart technologies and drought risk management for climate-resilient agriculture.

The improvements in food availability need to be combined with efforts to improve access to family planning, healthcare, education and basic infrastructure such as electricity, clean water and improved sanitation and roads. The high fertility rate in most of the Horn countries makes it difficult for governments to meet demands for schooling and other social services. Somalia, for example, has the second highest fertility rate in the world. The Horn governments, in cooperation with religious leaders, should advocate for family-planning measures such as campaigns for a lower number of children, and improve female education to reduce fertility and accelerate the demographic transition.

Communicable disease rates are high in the Horn region and are the leading cause of child mortality. The Horn governments, with the support of outside actors, need to take advantage of the current digital revolution to increase access to safe water and improved sanitation to reduce the high prevalence of communicable diseases. This includes undernutrition and stunting rates. This would have a positive effect on long-term growth and productivity in the region.

Efforts should be made to improve the quantity and quality of education as well as the health system to expand human capital resources. The governments should also harness their huge potential in renewable energy to accelerate electrification, especially in rural areas, more competitively and effectively.

Additionally, measures should be taken to enhance connectivity by improving and expanding road infrastructure and opening up the ICT sector to foreign investors and competition, especially in Djibouti, Eritrea and Ethiopia. This would make quality ICT services available at an affordable cost for the population.

The Horn governments also need to speed up the structural transformation of their economies. Transforming the economies would create much-needed employment and livelihood opportunities for the population. The overreliance on a few primary products makes the Horn countries vulnerable to future shocks arising from the international markets.

The recent oil price shock associated with the COVID-19 pandemic is a wake-up call for rapid diversification, especially for South Sudan where oil accounts for more than 90% of exports. Greater resilience requires diversifying their economies' productive base. This requires that they intensify reforms to improve the poor business and investment climate and

strengthen macroeconomic stability to nurture a dynamic private sector which is crucial for economic diversification.

The materialisation of all these actions will require genuine political will from the political elite, financial resources as well as concerted efforts from the international community.

Annexure

Current Path

This project used IFs 7.63 with an updated IFsHist file dated October 2020. Among other updates, the IFsHist file included the IMF global growth forecasts that were released in October 2020, reflecting the fund's growth forecast for 2020 and 2021 amid the COVID-19 pandemic.

The following data amendments were made to the IFs Current Path forecast for the Horn of Africa countries in the form of a project data file:

Chart A1: Project data

Series updated	Definition	Source	
PopulationYouthDep%	Population of young people (<15) as per cent of total	World population prospects	
PopYouthBulgeBy15	Youth bulge	World population prospects	
HealthMalarDthsper100000	Malaria deaths per 100 000	WHO World Malaria Reports, 2009-2019	
IncBelow1D90c%WDI	Population below poverty line of \$1.90	World Bank estimates	
Corruption	Level of corruption	Transparency International	
Freedom	Civil and political freedom	Freedom House	
AgProdCereals	Production of cereals	FAO	
GovExpense%GDP	Government expense as % of GDP	Government financial statistics database, IMF	
GovtDebt%GDP	Central government debt as % of GDP	World Economic Outlook database, IMF	

RoadsTotalNetwork	Roads, total network, kilometres	CIA Factbook 2019
WSSJMPWaterTotal%OtherImproved	Access to other improved water (%)	WHO/UNICEF JMP global database
WSSJMPWaterTotal%Piped	Access to piped water (%)	WHO/UNICEF JMP global database
WSSJMPSanitationTotal%Improved	Access to improved sanitation (%)	WHO/UNICEF JMP global database
RoadsPaved%	Roads paved	CIA Factbook 2019
PolityDemoc	Polity project's measure of autocracy	Center for Systemic Peace
PolityAutoc	Polity project's measure of democracy	Center for Systemic Peace

Scenario interventions

All interventions are from 2024, interpolate to 2033 and then are maintained at that level unless indicated otherwise.

Chart A2: Improved Governance scenario component

Interventions and parameters	Adjustment in IFs	Benchmark/Justification/Notes
Increase governance effectiveness (goveffectm)	Interpolate from 1 to 1.1 for Ethiopia and 1.25 for other countries	Ethiopia has a better score compared to its peers, which need to make more effort to improve government effectiveness. Between 2010 and 2019, Benin increased its score by about 25%. This intervention increases the average score in the Horn slightly above the projected average for low-income Africa by 2040 but remains below the score of Rwanda in the same year.
Reduce governance corruption	Interpolate from 1 to 1.1 for Ethiopia,	Ethiopia has a better score compared

(govcorruptm)	and 1.3 for other countries	to its peers which need to make more effort to reduce governance corruption. Between 1998 and 2008, the score for Tanzania increased by about 58%. The intervention increases the average score of the Horn of Africa by 59% between 2024 and 2033 but remains below the projected average for Rwanda by 2040.
Improve democracy (democm)	Interpolate from 1 to 1.2	Between 2012 and 2017, the score of Burkina Faso increased by 60%. The average democracy score in the Horn improves by 50% between 2024 and 2033 and remains slightly below the projected average score for low-income Africa by 2040.
Improve government business regulation	Interpolate from 1 to 0.8	Between 2009 and 2014, the regulatory quality in Laos improved by about 15%. The average regulatory quality score improves by about 33% between 2024 and 2033 but remains below the projected score for low-income countries by 2040.
Economic freedom	Interpolate from 1 to 1.2	Between 2000 and 2010, Rwanda improved its score by about 23%. The average score for economic freedom in the Horn of Africa increases by about 34% between 2023 and 2033 and remains below the projected score for Rwanda by 2040.
Increase aid receipts	Interpolate from 1 to 1.2	Represents the contribution of the international community to enhance Horn governments' capacity to deliver public services.
Increase social welfare transfer	Interpolate from 1 to 1.2	Represents the rollout of a cash grants programme by the Horn. Governments to support poor households.

Improve gender empowerment (gem)	Interpolate from 1 to 1.3	Between 1995 and 2009, Zambia improved its score by nearly 57%. This intervention brings the average score in the Horn of Africa above the projected average for low-income Africa but below the score of Uganda by 2040.
Improve governance security (govriskm)	Interpolate from 1 to 0.975 for Djibouti, and 0.9 for other countries	Djibouti is socially and politically more stable than its peers in the region. This intervention brings the average government security index to the projected average for low-income Africa by 2040.
Reduce societal violence (conflict and terror) (svmulm)	Interpolate from 1 to 0.8 for Djibouti and 0.5 for other countries	Djibouti is socially and politically more stable than its peers in the region. Long-term peace and security are necessary to put the Horn nations on the path of inclusive sustainable growth.
Reduce the probability of state failure (internal war) (sfintlwaradd)	Interpolate from 0 to -0.3 for Djibouti and -0.5 for other countries	Djibouti is socially and politically more stable than it peers in the region. This intervention will decrease the probability of state failure in the Horn of Africa.

Chart A3: Agriculture scenario component

Interventions and parameters	Adjustment in IFs	Benchmark/Justification/Notes
Increase crop yields (ylm)	Interpolate from 1 to 1.75 for Ethiopia, Eritrea and Sudan; 2.75 for South Sudan; 1.5 for Djibouti and 1.25 for Somalia	Between 2011 and 2016, Mozambique increased average yield by more than 50%. Crop yields are very low in Sudan and Sudan while it is high in Djibouti. The average crop yield in the Horn increases by about 72.8% between 2024 and 2033, slightly above the projected average

		for low-income Africa by 2040 but far below the level of Rwanda.
Increase crop land (ldcropm/forestm)	Interpolate from 1 to 1.2 for Ethiopia and Sudan. Interpolate from 1 to 0.8 by 2030 and 1 by 2040 for South Sudan, Djibouti, Eritrea and Somalia	Increases in the cultivated area will come from bringing some areas currently covered by forest and grass under cultivation. Between 1995 and 2005, Burkina Faso increased its crop land by 44%. This intervention increases average crop land in the Horn by about 16% between 2024 and 2040.
Increase land area equipped for irrigation (Landirareaequipm)	Interpolate from 1 to 1.1 for Ethiopia and Djibouti, 1.2 for Somalia and 1.3 for other countries	Between 2001 and 2011, Burkina Faso increased its land area equipped for irrigation by more than 100%. The average land area equipped for irrigation in the Horn increases by 17% between 2024 and 2040, below the projected average for low-income Africa.
Reduce agriculture loss from producer to consumer (aglosstransm)	Interpolate from 1 to 0.6	Infrastructure shortage in the rural areas in the Horn countries causes huge losses when transporting agricultural production from producer to consumer.
Reduce loss rate of agriculture production (aglossprodm)	Interpolate from 1 to 0.6	Reduces agricultural production losses by about 4.3 percentage points between 2024 and 2033.
Increase food access Calories per capita (clpcm)	Interpolate from 1 to 1.15	Between 1997 and 2002, Calorie per capita increased in Rwanda by 23%. The average Calories per capita in the Horn increases by about 19% between 2024 and 2033, above the projected average for low-income Africa by 2040 but on par with Guinea in the same year.

Chart A4: Human Capital and Basic Infrastructure

Interventions and parameters	Adjustment in IFs	Benchmark/Justification/Notes
Increase contraceptive use (contrusm)	Interpolate from 1 to 1.2 for Djibouti, Eritrea and Ethiopia, and 1.5 for other countries	Between 2000 and 2005, the contraceptive use rate doubled in Ethiopia. The contraceptive use in the Horn increases by about 60% between 2024 and 2033, above the projected average for low-income Africa by 2040 but below the level of Malawi in the same year.
Reduce communicable disease mortality for children under five (hlmortcdchldm)	Interpolate from 1 to 0.9 for Djibouti, Eritrea and Ethiopia, and 0.7 for others	The Horn region has one of the highest infant mortality rates in the world. In this scenario, the Horn region achieves the SDG target relative to infant mortality which is less than 25 deaths per 1 000 live births by 2030.
Reduce malaria prevalence (hlmalariaprevm)	Interpolate from 1 to 0.6	Between 2000 and 2009, malaria prevalence in Afghanistan declined by about 40%. This intervention brings malaria prevalence in the Horn of Africa to the level of Afghanistan by 2040.
Reduce neonatal mortality (neonatmorm)	Interpolate from 1 to 0.7	Between 2005 and 2014, Rwanda reduced neonatal mortality by 37%. This intervention reduces the average neonatal mortality by about 63% between 2024 and 2033, on par with the projected average for Rwanda in 2040.
Reduce mortality from diarrhoea (hlmortm)	Interpolate from 1 to 0.7	Between 2015 and 2019, Mali reduced mortality from diarrhoea by about 30%. The average mortality rate from diarrhoea in the Horn declines to reach the projected rates for Afghanistan and Rwanda by 2040.
Reduce severe acute malnutrition	Interpolate from 1 to 0.7	Severe acute malnutrition rate

(malnchpsam)		among children under five in the Horn is below the projected average for low-income Africa by 2040 but remains above the projected rate for Rwanda in the same year.
Reduce malnutrition (malnm)	Interpolate from 1 to 0.7	This intervention brings the percentage of malnourished people in the Horn to the level of Rwanda by 2040.
Reduce maternal mortality ratio (matmortratiom)	Interpolate from 1 to 0.7	Between 2000 and 2009, Burkina Faso reduced maternal mortality by about 30%. This intervention brings the maternal mortality ratio slightly above the projected average ratio for low-income Africa but on par with Malawi by 2040.
Increase net primary intake (edpriintnm)	Interpolate from 1 to 1.3	To ensure age-appropriate learners enrol in school. This intervention puts the average net primary intake in the Horn on par with the projected rates for Uganda and Rwanda by 2040.
Increase the primary education survival rate (edprisurm) (Total)	Interpolate from 1 to 1.2 for Ethiopia and South Sudan	With the exception of Ethiopia and South Sudan, the other Horn countries are doing well enough in primary survival according to IFs data. Gambia increased the primary education survival rate by about 22% between 2005 and 2015. The average primary survival rate in the Horn is in line with the projected rate for Afghanistan.
Increase gender equity time for primary intake (edprigndreqintm) (edprigndreqintn)	Interpolate from 2024 to reach gender parity by 2033 (10 years)	To reduce gender disparity in primary intake.
Increase gender equity time for primary survival rate (edprigndreqsur)	Interpolate from 2024 to reach gender parity by 2030 (10 years)	To reduce gender disparity in primary survival rate.

Improve the quality of primary education (edqualpriallm)	Interpolate from 1 to 1.2	Chad improved its score by 15% between 1995 and 2005. The average score for the Horn region is on par with the projected score for low-income Africa by 2040.
Increases rate of transition from primary to lower secondary (edseclowrtranm)	Interpolate from 1 to 1.2	Between 2004 and 2014, the transition rate from primary to lower secondary in Uganda increases by about 41%. In this intervention, the average transition rate in the Horn of Africa is on par with Uganda by 2040.
Increases transition from lower to upper secondary (edsecuprtranm)	Interpolate from 1 to 1.2	Between 2003 and 2010, the transition rate from lower secondary to upper secondary in Burkina Faso increases by about 29%. The average transition rate from lower secondary to upper secondary in the Horn reaches 98% by 2040, slightly above that of Rwanda in the same year.
Increase vocational training in upper secondary school (Edsecuprvocadd)	Interpolate to 4	Participation rate in vocational training in Niger increased from 15.34% in 2005 to 37.18% in 2015 (more than double). This intervention brings the average rate in the Horn to 31.6% by 2040, above the projected average for low-income Africa but below that of Niger in the same year.
Improve the quality of secondary education (edqualsecallm)	Interpolate from 1 to 1.2	Burundi's score increased by about 10% between 2015 and 2019. The average score of the quality of education in the Horn is on par with Togo by 2040.
Increase tertiary intake rate (edterintm)	Interpolate from 1 to 1.4	From a very low base, tertiary intake in Burundi increased by nearly 90% between 2010 and 2015. Tertiary intake increases by about 69% between 2024 entre 2034.

Increase graduation rate in tertiary education (Edtersciेशradd) (science & engineering)	Increase by 10% between 2024 and 2033 and hold	From a very low base, the share of science and engineering students in tertiary graduates in Sierra Leone increased by more than 80% between 2015 and 2019. The average share of science and engineering students in tertiary graduates increases by about 80% between 2024 and 2033 in the Horn region.
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Increase access to electricity (Infraelecaccm) (Rural)	Interpolate from 1 to 1.3	Between 1994 and 2004, electricity access in rural areas increased by about 46% in Nigeria.
Increase access to electricity (Infraelecaccm) (Urban)	Interpolate from 1 to 1.3	Between 2003 and 2013, Gambia increased electricity access by about 33% in urban areas.
Increase roads paved length (Infraroadpavedpcntm)	Interpolate from 1 to 1.2	Between 2004 and 2008, Burkina Faso increased its road paved length by 28%.
Increase access to fixed broadband Internet (ICT) (Ictbroadm)	Interpolate from 1 to 1.4	Fixed broadband subscriptions per 100 people increased by about 160% between 2011 and 2016 in Uganda.
Increase access to mobile broadband (ICT) (Ictbroadmobilm)	Interpolate from 1 to 1.4	In Burkina Faso, mobile broadband internet subscriptions per 100 people increased from nine to 29 subscriptions per 100 people between 2013 and 2017 (over 200% increase).
Reduce access to unimproved water sources (Improve access to safe water) (Watsafem)	Interpolate from 1 to 0.6 for South Sudan and 0.7 for other countries	Access to safe water in Ethiopia increased by about 69% between 2005 and 2015. This intervention

		increases access to improved water to 96% by 2040, slightly above low-income Africa (88.1%).
Improve access to sanitation (Sanitationm)	Interpolate from 1 to 1.5 for South Sudan and 1.3 for other countries	<p>From 2000 to 2015, access to improved sanitation increased from 9.5% to 22.5% (more than double) in Burkina Faso.</p> <p>This intervention increases access to improved sanitation from 31.1% in 2023 to about 86% by 2040 against 81% on the Current Path on par with the projected average for low-income Africa by 2040.</p>

Acknowledgements

The authors would like to express their appreciation for valuable comments provided by Andy Atta-Asamoah, Jos Meester, Mohammad Irfan, Roba Sharamo and Saif El Din Daoud Abd El Rhman. The authors would also like to extend their appreciation to the participants of the data validation workshop on 26 May 2021.

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Cite this research

Kouassi Yeboua and Jakkie Cilliers (2024) Development prospects for the Horn of Africa countries to 2040. Published online at futures.issafrica.org. Retrieved from <https://futures.issafrica.org/special-reports/region/horn-of-africa/> [Online Resource] Updated 07 June 2023.

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