COUNTRY PRIVATE SECTOR DIAGNOSTIC

CREATING MARKETS IN NAMIBIA

Creating Resilient and Inclusive Markets

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EXECUTIVE SUMMARY

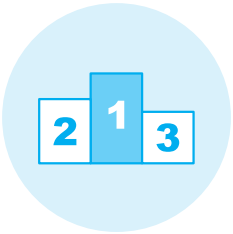
Since achieving independence in 1990, Namibia's remarkable growth has been fueled by foreign direct investment and enabled by prudent economic management. The sustained growth resulted from large private capital investments in mining and public investments in infrastructure enabled by prudent fiscal and monetary policies, a stable political and business environment, and a strong financial sector. Namibia transitioned from a lower-middle- to upper-middle-income country in 2008, with per capita incomes reaching a peak of US$6,370 in 2015.

Since 2016, however, growth has declined steadily and the economy fell into recession, exposing the vulnerability of Namibia's economic growth model to external and climate shocks. In 2019, the economy contracted 0.9 percent and, in 2020, contracted further by 8.5 percent because of external shocks arising from commodity demand and price volatilities and from drought, as well as increasing debt that limited public investment. These challenges were exacerbated by the COVID-19 pandemic, an economic slowdown in neighboring South Africa, worsening terms of trade on the back of declining global demand and commodity prices, a decline in Southern African Customs Union (SACU) revenues, and the effects of crippling droughts on agricultural and industrial production.

Namibia has very high levels of poverty and inequality, which are largely driven by high levels of unemployment. The government is the biggest employer and public investment has been a historical driver of growth; but given the fiscal pressures, the Namibian government has limited capacity to create public sector jobs or undertake large public investments, a situation that implies a more dominant role for the private sector is needed. The limited private sector growth has created a situation in which only a small segment of poor Namibians benefit from employment income, while the majority depend on social grants or subsistence farming. Namibia's gross domestic product (GDP) growth slowly recovered by 0.8 percent in 2021 and is expected to average just above 2 percent over 2022–24, premised on waning effects of the pandemic and strong prospects for the mining sector.

The primary objective of this Country Private Sector Diagnostic (CPSD) is to identify near- and medium-term reform opportunities to revitalize the private sector and help reposition Namibia's growth on a green, resilient, and inclusive trajectory. This CPSD explores priority reform opportunities to address five cross-cutting bottlenecks: (1) enhancing the role and performance of the state-owned enterprise (SOE) sector through a more effective competition policy environment; (2) strengthening implementation of the public-private partnership (PPP) framework to expand private investments, especially in infrastructure; (3) leveraging the potential for digital transformation of the economy; (4) addressing inefficiencies in logistics and trade facilitation; and (5) tapping opportunities in the water sector for green and resilient growth. The diagnostic then looks in depth at three sectors prioritized by the Namibian government—renewable energy, climate-smart agribusiness, and housing—and provides recommendations for reducing sector-specific bottlenecks to stimulate growth potential.

Addressing cross-cutting constraints to private investment

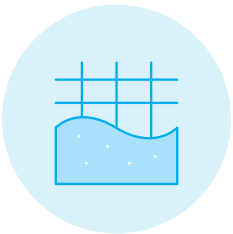


1. Establishing a more effective competition policy environment

Namibia's largely monopolistic market structure and dominant public sector create an uneven playing field for the private sector. Public sector dominance in a small economy such as Namibia's can create anticompetitive effects, especially when SOEs operate in monopolistic and privileged positions in key sectors of the economy—as they do even in sectors where private participation could be more efficient and transformative. This monopolistic nature of SOEs undermines the incentive to improve productivity and efficiency within key sectors such as water and electricity.

SOEs enjoy advantages that inhibit the entry and success of private participants. These include preferential access to finance (subsidies, guarantees, and bailouts) and land, legislated monopolies in specific sectors, preference through policies and oversight practices of shareholders, and multiple roles that create conflict between regulatory functions and operations. The artificial propping up of uncompetitive public enterprises—for example, through public subsidies and guarantees—leads to inefficiencies and imposes a fiscal burden on the government. Given the small market size, overall efficiency and productivity gains can be achieved by delineating sectors that would benefit from private participation and sectors where existing SOE performance could be enhanced.

The Namibian government has demonstrated its commitment to improving the efficiency of SOEs. In November 2021, the government announced changes to the Ministry of Public Enterprises over a five-year period. Based on the recommendation of a high-level panel on the Namibian economy, the Ministry of Public Enterprises is envisaged to become a holding company under the Ministry of Finance, which would have direct oversight into the financial and operational performance of public enterprises and ensure that subsidies are aligned to compliance and performance. This move is part of Namibian government's efforts to transform Namibia's public enterprises and streamline the administration.



2. Strengthening implementation of the PPP framework to expand private investments

Namibia has a sound albeit nascent PPP system. The country has sought to build a PPP framework through legislation, regulation, setup of a PPP Unit under the Ministry of Finance, and establishment of capacity for facilitating PPP projects. But the new framework is not fully tested yet, as no PPP transaction has reached financial close under the PPP Act of 2017. Implementation capacity is developing but remains nascent. A robust PPP framework accompanied by critical business environment reforms could attract much-needed private investments, especially in energy and water, thereby reducing fiscal burden. The new PPP framework could be more effective if broader business environment constraints are addressed. Capacity will grow over time as participants learn from successful transactions and as systematic links between the planning and budgetary processes are developed. Implementing the PPP framework will help expand and strengthen the PPP pipeline and help ensure projects are not selected simply because they have not secured budget financing.

The PPP Unit has identified ten PPP pipeline projects, five of which the Namibian government has formally announced. Projects in the pipeline cover renewable energy, water, agriculture, pharmaceutical supplies, affordable housing, a student village, and rehabilitation of housing for Ministry of Health staff as well as the redevelopment of an office building for the Ministry of Justice. The formally announced projects are in wastewater treatment, desalination, solar power, and student village development.

3. Leveraging the potential for digital transformation of the economy

Despite a mature telecommunications market, adoption of digital technologies is lagging. Although Namibia was a pioneer in Africa in launching both 3G and 4G/LTE (Long-Term Evolution) networks and has good network coverage, it lags upper-middle-income comparator countries on the World Bank Digital Adoption Index. Weak competition in the broadband market is keeping costs high; wherein 1 gigabyte of monthly prepaid data in Namibia costs an average US$8.3, compared to US$4.7 in South Africa or US$4.3 in the Democratic Republic of Congo (Heita 2022). According to the Global System for Mobile Communications Association (GSMA), in 2021, Namibia's mobile broadband adoption at 36 percent and smartphone penetration at 53 percent lagged its regional peers (52 percent and 65 percent, respectively). Fixed broadband has rolled out slowly, with just 2.5 subscriptions per 100 people. Consequently, digital adoption rates are much lower than in peer countries.

Promoting digital transformation will require a multitiered approach. This includes reducing market concentration while facilitating the entry of new operators, which could enhance investments and technology and improve service quality, access, and affordability; increasing market contestability, especially at the last-mile and wholesale levels; accelerating international connectivity and national open access fiber infrastructure through private participation, which could increase access to affordable and reliable bandwidth; and adopting new internet service provider licenses and infrastructure-sharing arrangements to accelerate the deployment of high-speed broadband services.

4. Addressing inefficiencies in logistics and trade facilitation

Opportunities are increasing for Namibia to position itself as an alternative logistics gateway for Southern African Development Community countries. For example, Walvis Bay is leveraging its four main trade corridors to attract traffic from Botswana and new attention from South Africa's Northern Cape agriculture hub. The Logistics Master Plan proposes a Logistics Hub Center in Walvis Bay; this could become a transit/transshipment cargo hub with sufficient traffic to improve connectivity to global markets and reduce logistics costs, in line with Namibia's vision to become a "logistics nation" by 2025. However, in the World Bank Logistics Performance Index, Namibia lags South Africa and is roughly on par with Mozambique and Tanzania. To gain a competitive edge, Namibia needs to improve its performance in timeliness, tracking and tracing, logistics competence, international shipments, infrastructure, and trade facilitation.

The logistics sector exhibits several challenges. Sea connectivity is infrequent or unavailable because of competing ports; air connectivity depends on passenger traffic rather than cargo needs; rail transportation is unreliable because of outdated railway and equipment; and road transportation entails high costs because of empty backhauls and a restricted trucking market. In addition, the development of logistics facilities has been delayed because of hesitancy by logistics investors, a lack of skilled logistics professionals, limited availability of data to monitor the performance of Walvis Bay corridors, and a lack of good-quality third-party storage facilities. A mapping of trade patterns and flows to identify priority areas for strengthening transport and logistics infrastructure could be a good basis to identify private investment opportunities.

Addressing these challenges will require reform in three broad areas: (1) accelerating implementation and scaling of digital systems along the trade corridors, which includes investing in digital infrastructure and adopting digital processes to enable real-time cargo monitoring, implementing the single window system, establishing a trade portal and adopting a virtual queue management system at land border posts; (2) improving the

regulatory framework for domestic and international logistics services, which includes reviewing the entry barriers to road transport (including an assessment of the effects of cabotage policy and the third-country rule) and supporting implementation of the Vehicle Mass Bill, which will harmonize rules and regulations affecting road transportation in the region; and (3) improving border crossing efficiency along the trade corridors, by enhancing staff capacity at the borders and upgrading border infrastructure, can reduce border bottlenecks.

5. Tapping opportunities in the water sector for green growth

Water shortages and increasing vulnerability to climate change threaten sustainable economic growth. Namibia is the driest Sub-Saharan African country and the most vulnerable to climate change shocks. The combined effects of highly variable and low levels of precipitation, increasing temperatures and evaporation rates, and water pollution severely threaten economic growth and livelihoods, especially among the poor. Water demand is expected to increase by over 30 percent by 2030, driven by urbanization, irrigation for agriculture, and the needs of the tourism sector.

Three priority PPP water projects recently announced signal the Namibian government's commitment to attract private participation. The Wastewater Direct Reclamation Plant (City of Windhoek), Otjiwarongo Wastewater Treatment Works (Otjiwarongo Municipality), and Desalination Water Supply Project (Namibia Water Corporation Ltd.) can demonstrate the value of private sector involvement and the reduced fiscal burden on the government.

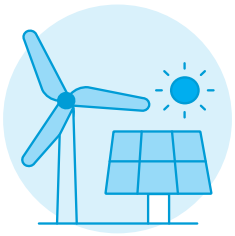
Meeting the need for financing and private investments in the water sector will require a comprehensive approach that includes decentralization, equitable tariff policy, and technical innovation. The private sector is well placed to help develop approaches for innovative water solutions such as desalination. Progress on these fronts will require addressing the concern that private participation will increase the cost of water, a social good, and adversely affect access to water, especially for the poor.

TABLE ES.2 Priority reforms to address cross-cutting constraints

Cross-cutting constraints	Priority reforms
Enhancing SOE performance and establishing a more effective competition policy environment	Level the playing field between the between SOEs and the private sector
	Improve service delivery across the public enterprise portfolio, in particular network companies
Strengthening implementation of the PPP framework to expand private investments	Strengthen capacity of the PPP Unit for preparation and delivery of the first-mover, priority transactions
	Improve interagency coordination and support for the PPP agenda
Addressing inefficiencies in logistics and trade facilitation	Accelerate implementation and scaling of digital systems along the corridors
	Improve the regulatory framework for domestic and international logistics services
	Improve infrastructure and staff capacity to enhance border crossing efficiency along the corridors
Leveraging the potential for digital transformation	Increase market contestability and private investments to improve quality and affordability of broadband services
	Intensify the development of digital literacy and skills
Tapping opportunities in the water sector for green growth	Strengthen the capacity of the PPP Unit for water sector projects
	Clarify institutional arrangements for water and sanitation infrastructure investments

Notes: SOE = state-owned enterprises; PPP = public-private partnership.

Sectoral deep dives



1. Renewable energy

Namibia's world-class—but largely untapped—renewable energy resources are well-positioned for development. The country has one of the highest solar irradiation levels in the world, at nearly 3,000 kilowatt hour per square meter over a large part of the country. Namibia also has excellent wind resources that are available when electricity demand is highest; mean wind speeds at typical turbine heights can exceed 10 meters per second. If exploited well in the medium to long term, these excellent fundamentals, coupled with recent decreases in global prices of solar photovoltaic panels and wind turbines, could enable Namibia to not only service its own rising electricity demand, but also to become a leading regional exporter to other Southern African Power Pool peers. Namibia's resources also create the opportunity to position the country as a global competitor for green hydrogen.

TABLE ES.1 Recommendations: Renewable energy

Short-term recommendations	Medium- to long-term recommendations
Strengthen implementation of the Modified Single Buyer model by increasing private sector actors' understanding and participation.	Increase the availability of specialized technical skills for the renewable energy sector.
Accelerate the regulatory reforms proposed in the National Integrated Resource Plan and the Electricity Act.	Target investments to develop a renewable energy value chain.
Enhance capacity to deliver successful renewable energy transactions.	Explore opportunities for restructuring of NamPower.
Support private participation in off-grid electrification.	
Introduce derisking and innovative financing instruments.	

2. Climate-smart agribusiness

Investments in Namibia's livestock and horticulture sectors show promise that could benefit the large share of Namibians who depend on agriculture for their livelihood. Despite Namibia's very limited arable land and vulnerability to climate shocks, over 70 percent of the population depends on the agriculture sector for their livelihood, and 23 percent of the workforce is employed in agriculture. Namibia is classified as an arid country; only about 1 percent of the country's 82.4 million ha is under production, and only 0.05 percent is identified as irrigable. Since 2008, agriculture's contribution to GDP has fluctuated substantially between 6.7 and 10.4 percent because of compounding climatic shocks. The livestock and horticulture subsectors show increasing promise for climate-smart investments that could generate income and employment. Livestock accounts for just over half of Namibia's agricultural production and 90 percent of its agricultural exports but is among the least labor-intensive agricultural subsectors. The horticulture subsector accounted for 1.5 percent (or US$101 million) of exports in 2019; grapes were the leading output, accounting for 69.8 percent of horticulture exports, followed by tropical plants (6.4 percent).

TABLE ES.3 Recommendations: Climate-smart agribusiness

Short-term recommendations	Medium- to long-term recommendations
Improve access to finance for smallholder farmers.	Increase the length of land tenures.
Improve water availability for the Green Schemes.	Enhance private participation in the Fresh Produce Business Hubs.
Explore new export markets for boneless and processed meat.	Strengthen foot-and-mouth disease monitoring.
Establish clearer rules for private operators for any future Green Scheme transfer.	Leverage Green Schemes for animal feed producers.

3. Housing

Namibia's demand for formal housing is increasing with urbanization and offers a key economic opportunity. Namibia is experiencing annual urbanization of around 3.8 percent, translating to 50,000 people or 13,500 new urban households, annually. The share of the urban population is expected to increase from 52 percent to 60 percent by 2030. Formal housing delivery is not keeping pace with demand, resulting in a rapid growth of informal settlements. The current need for about 45,000 new housing units per year offers a key economic opportunity. The housing sector creates spillovers across other sectors along the value chain, and thus has a high job-creating potential. Housing accounts for 10–30 percent of a country's consumption, and 50–90 percent of household wealth and savings. The high economic multiplier in the housing construction sector offers significant potential to support economic recovery by influencing demand for intermediate manufacturing and services inputs into the housing sector.

TABLE ES.4 Recommendations: Housing

Short-term recommendations	Medium- to long-term recommendations
Support the finalization and implementation of the housing strategy, drawing upon global experience, to promote sustainable urban development.	Introduce the Excellence in Design for Greater Efficiencies certification in Namibia in collaboration with the Construction Industries Federation.
Leverage lessons from the student village and Windhoek housing projects to refine the housing public-private partnership framework.	Create the regulatory frameworks for the issuance of green housing finance.
Implement digitalization measures to improve cost and efficiency of the entire land delivery process, including land design, titling, approval, and registration.	Introduce innovative market-appropriate financial products for the low- and middle-income housing market.

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ABBREVIATIONS

ACE	Africa Coast to Europe
AMTA	Agro-Marketing and Trade Agency
BESS	Battery Energy Storage System
CPSD	Country Private Sector Diagnostic
ECB	Electricity Control Board
EDGE	Excellence in Design for Greater Efficiencies
FDI	foreign direct investment
FMD	foot-and-mouth disease
FTTH	fiber-to-the-home
GDP	gross domestic product
GIPF	Government Institutions Pension Fund
GWh	gigawatt hours
ha	hectare
IFC	International Finance Corporation
IPP	independent power producer
ISP	internet service provider
km	kilometer
KPL	Kilombero Plantations Ltd.
KSC	Kilombero Sugar Company
kWh	kilowatt hour
m^2	square meter
MAWF	Ministry of Agriculture, Water and Forestry
MeatCo	Meat Corporation of Namibia
Mm^3	cubic megameter
MME	Ministry of Mines and Energy
MOF	Ministry of Finance
MPE	Ministry of Public Enterprises
MSB	modified single buyer
MSMEs	micro, small, and medium enterprises
MSP	market-share promotion
MTC	Mobile Telecommunications Company
MURD	Ministry of Urban and Rural Development
MW	megawatt
NAB	Namibian Agronomic Board
NAC	Namibia Airports Company
NAMCOR	National Petroleum Corporation of Namibia
NAMFISA	Namibia Financial Institutions Supervisory Authority
Namport	Namibia Port Authority
NamPower	Namibia Power Corporation Ltd.
NamWater	Namibia Water Corporation Ltd.
NCAs	Northern Communal Areas
NDC	Nationally Determined Contribution
NHAG	Namibia Housing Action Group
NHE	National Housing Enterprise
NIPDB	Namibia Investment and Promotion Development Board

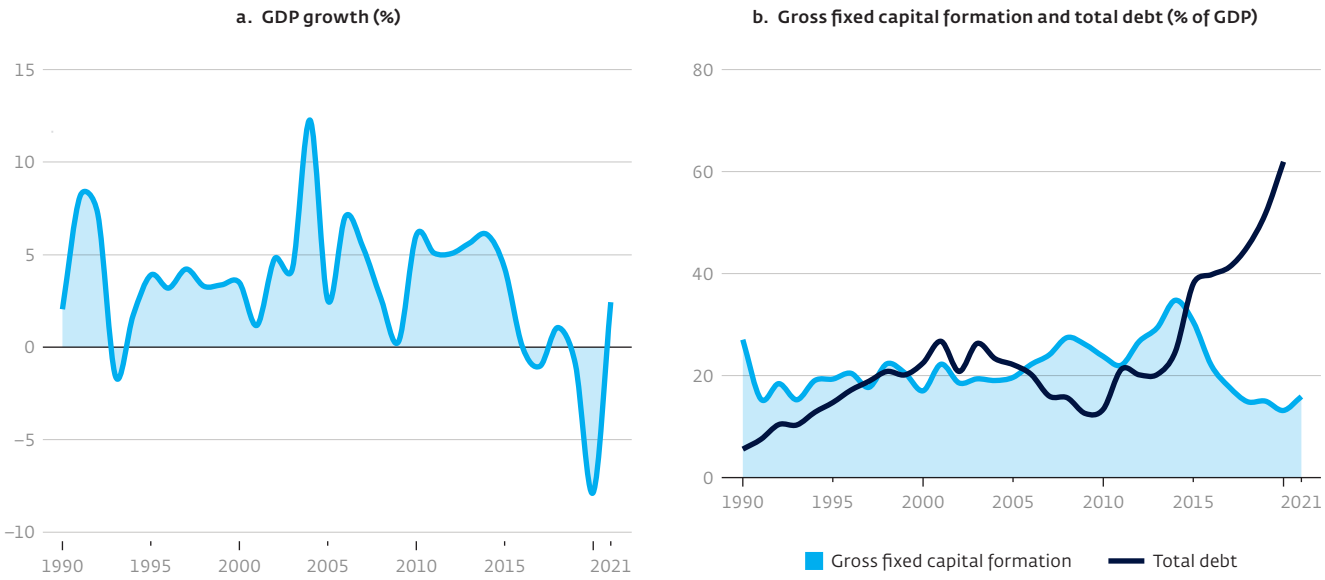
OECD	Organisation for Economic Co-operation and Development
OGEMP	Off-Grid Energisation Master Plan
PDN	previously disadvantaged Namibians
PPP	public-private partnership
PV	photovoltaic
RED	regional electricity distributor
REFIT	renewable energy feed-in tariff
SACU	Southern African Customs Union
SADC	Southern African Development Community
SAPP	Southern African Power Pool
SCDI	Southern Corridor Development Initiative
SMEs	small and medium enterprises
SOE	state-owned enterprise
TKF	Trans-Kalahari Fibre
TN Mobile	Telecom Namibia
VCF	veterinary cordon fence

1 INTRODUCTION AND COUNTRY CONTEXT

Since achieving independence in 1990, Namibia's remarkable growth has been fueled by foreign direct investment (FDI) and enabled by prudent economic management.[1] The sustained growth during the postindependence era was a result of large private capital investments in mining and public investments in infrastructure enabled by prudent fiscal and monetary policies, a stable political and business environment, and a strong financial sector. This economic growth was associated with structural transformation as the share of services in the economy grew, driven by public expenditure. Significant progress was also made in human capital indicators, access to basic infrastructure and health services, and overall poverty reduction. Namibia transitioned from a lower-middle- to upper-middle-income country in 2008, with per capita incomes reaching a peak of US$6,370 in 2015.[2]

Since 2016, however, growth has declined steadily and the economy fell into recession until 2020, exposing the vulnerability of Namibia's economic growth model to external and climate shocks. In 2019, the economy contracted 0.9 percent, and it further contracted by 8.5 percent in 2020 due to external shocks arising from commodity demand and price volatilities and from drought, as well as increasing debt that limited public investment (figure 1.1). These challenges were then exacerbated by the COVID-19 pandemic (box 1.1) and—given the strong trade and financial links with Namibia—by South Africa's economic slowdown.[3] Other contributors to the recession include volatility in Angolan demand for Namibian services (including transport, housing, health, and education), worsening terms of trade on the back of declining global demand and commodity prices, a decline in

FIGURE 1.1 Namibia's GDP growth, debt, and gross capital formation, 1990–2020



Source: Based on data from World Development Indicators database.
Note: GDP = gross domestic product.

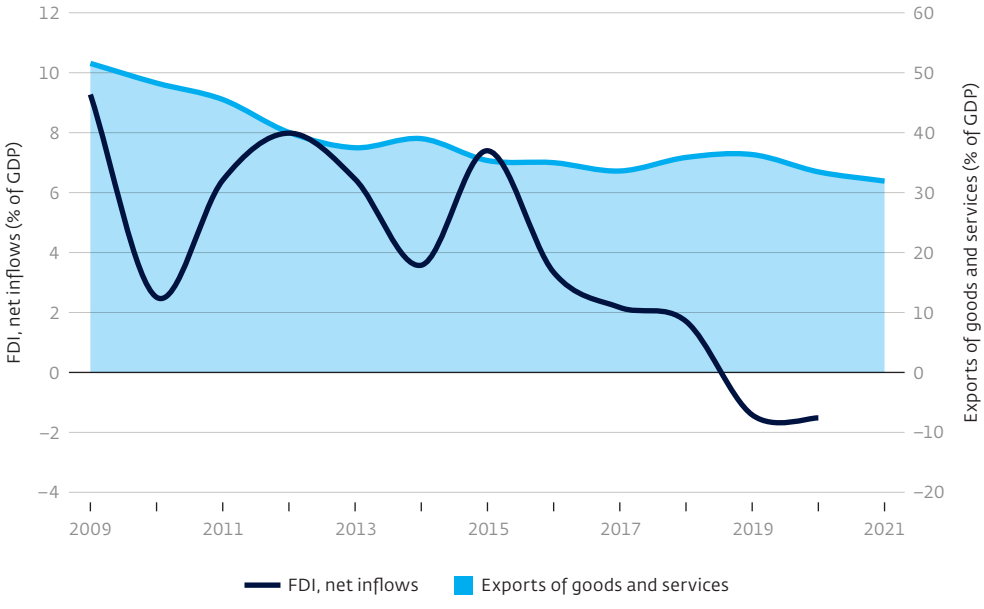
BOX 1.1 The impact of COVID-19 on Namibia's economy

The COVID-19 pandemic shock has led to a further contraction of Namibia's economy and a sharp increase in poverty. After a particularly devastating third wave of COVID-19, the government slowly eased the lockdown measures that had brought economic activity to a halt. As of September 2021, Namibia had recorded more than 126,000 infections and 3,435 deaths from the pandemic. Three successive COVID-19 waves led to a drastic contraction of both the export and hospitality sectors in 2020 and 2021 due to national lockdowns and travel restrictions. This resulted in a sharp increase in upper-middle-income poverty levels, from 57 percent in 2019 to 64 percent in 2020, as well as a severe deterioration of the overall fiscal situation.

Despite the constrained fiscal space, the government quickly responded with an economic stimulus and relief package, including direct support to businesses. The fiscal deficit almost doubled from 5.3 percent in 2019 to 8.2 percent in 2020, while debt as a percentage of gross domestic product (GDP) jumped from 62.3 percent in 2019 to 69.5 percent in 2020. The debt position further deteriorated to 81 percent of GDP in 2021, on the back of low Southern African Development Community transfers and slowed economic activity in sectors such as tourism and diamond mining. Namibia's economic stimulus and relief package provided liquidity support to businesses and social protection to the population. The package amounted to N$8.1 billion (4.25 percent of GDP) and included N$5.9 billion for direct support to businesses and households and accelerated payments for services providers, as well as N$2.3 billion in the form of government guarantees to support loan uptake on preferential terms by businesses and individuals. Although no specific firm-level data were available, the impact of this stimulus and relief package on business recovery and growth is expected to be positive.

Southern African Customs Union (SACU) revenues, and the effects of crippling droughts on agricultural and industrial production. Net FDI inflows plunged from 9.3 percent of gross domestic product (GDP) in 2009 to –1.4 percent of GDP in 2019, while exports shrunk from 51.6 percent of GDP in 2009 to 33 percent of GDP in 2020 (figure 1.2). Namibia's economic performance slowly recovered by 0.8 percent in 2021 and is expected to average just above 2 percent over 2022-24, premised on waning effects of the pandemic and strong prospects for the mining sector.

FIGURE 1.2 Net FDI inflows and value of goods and services exported, 2009–2020

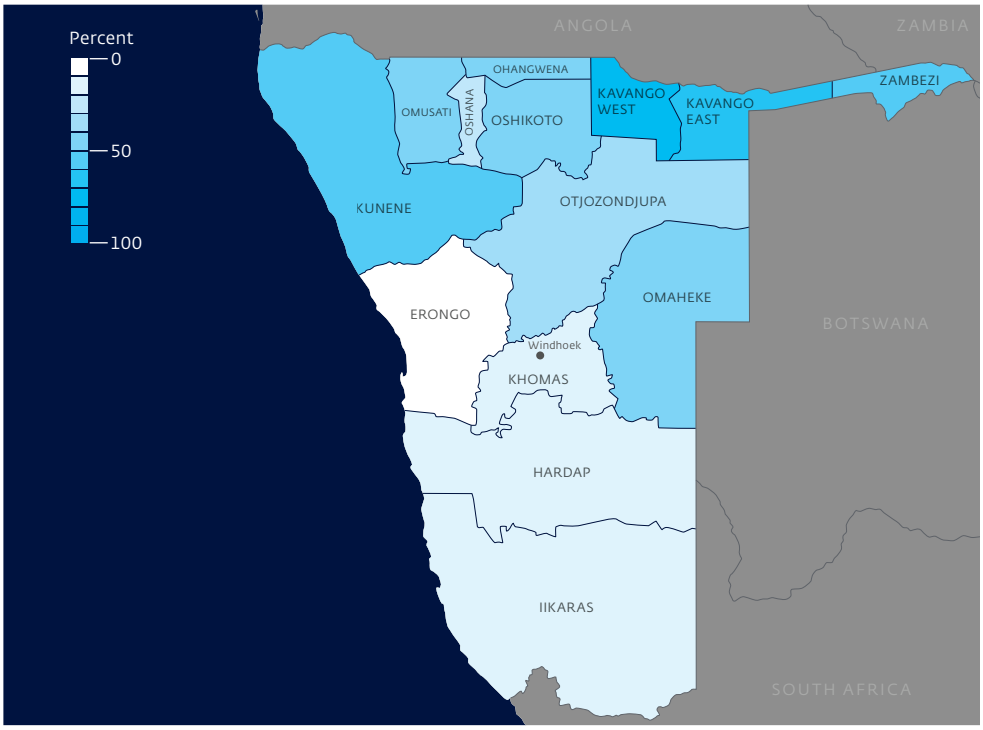


Source: Based on data from World Development Indicators database.
Note: FDI = foreign direct investment; GDP = gross domestic product.

Stemming from historical legacies, poverty and inequality remain high, especially in the north (map 1.1). The spatial inequality is largely driven by employment and income disparities and poor access to transportation, sanitation, energy, and housing. The multi-dimensional poverty index (which is measured across three main dimensions: health outcomes, education outcomes, and living standards) is higher in the north of the country for historical reasons related to colonization and apartheid. Thus, despite being home to a greater share of the population, the northern parts of the country are lagging in these dimensions, exacerbating economic inequality. Given the very low population density per square meter, innovative solutions such as off-grid renewable energy systems and local digital services could enhance access to essential services if widely deployed. Namibia has one of the world's fastest urbanization rates, with nearly half the population living in cities;[4] this situation provides opportunities for spatial agglomeration and infrastructure delivery.

Although the government of Namibia is the biggest employer and public investment has been a historical driver of growth, there is limited capacity to create new public sector jobs. In 2019, public sector employment exceeded 100,000, making it the biggest employer in Namibia. The 2019 National Graduate Tracking Survey found that 73 percent of university graduates worked for public entities (government jobs and public enterprises), and just 20 percent of graduates went on to work in the private sector.[5] The public sector wage bill accounts for a substantial share of public spending at around 44 percent. The public wage bill doubled between 2012/13 and 2017/18 because of job regrading and salary raises above inflationary adjustments. Given the fiscal pressures, the government has limited capacity to create jobs or undertake large public investments, a situation that implies a more dominant role for the private sector.

MAP 1.1 National multidimensional poverty index headcount ratio by region, 2021

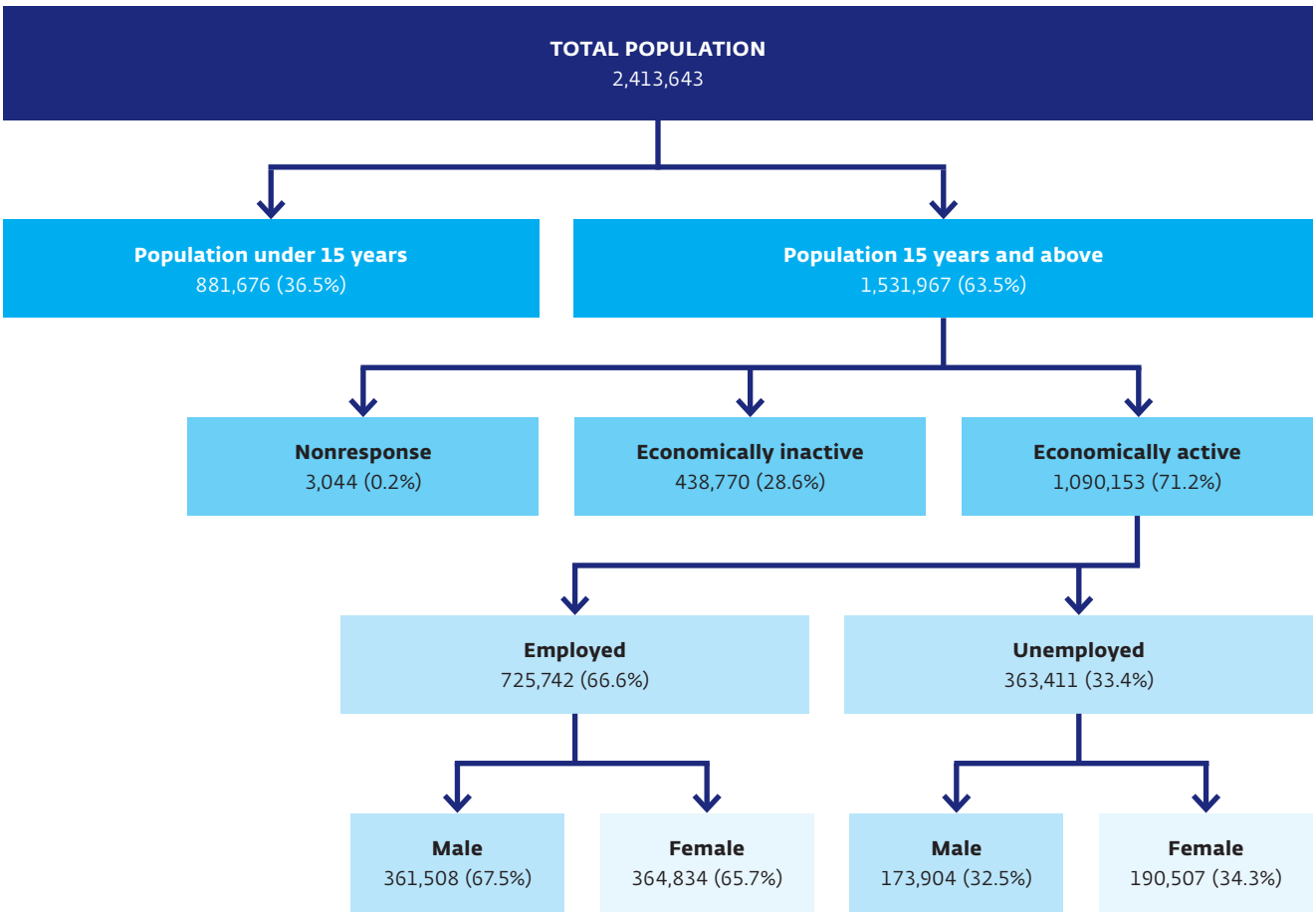


Source: NSA (Namibia Statistics Agency). 2021. "Namibia Multidimensional Poverty Index (MPI) Report 2021." NSA, Windhoek.
Note: MPI = multidimensional poverty index.

Addressing the challenges of high youth unemployment, poverty, and inequality thus requires a strong private sector response. The limited growth of the private sector has created a situation in which only a small segment of poor Namibians benefit from employment income, while the majority depend on social grants or subsistence farming. Additionally, the Namibian economy is marked by high levels of informality; 57 percent of total employment is in the informal sector, which is plagued by low productivity and higher levels of income insecurity and vulnerability (see appendix A).[6] Youth unemployment is among the highest in the world at 38 percent,[7] and women are more likely to be unemployed than men and in lower-paying jobs despite higher educational attainment (figure 1.3). The private sector has a central role to play in creating jobs, upskilling workers, expanding service provision in areas underserviced by the government and increasing the tax base to fund important social and economic development objectives.

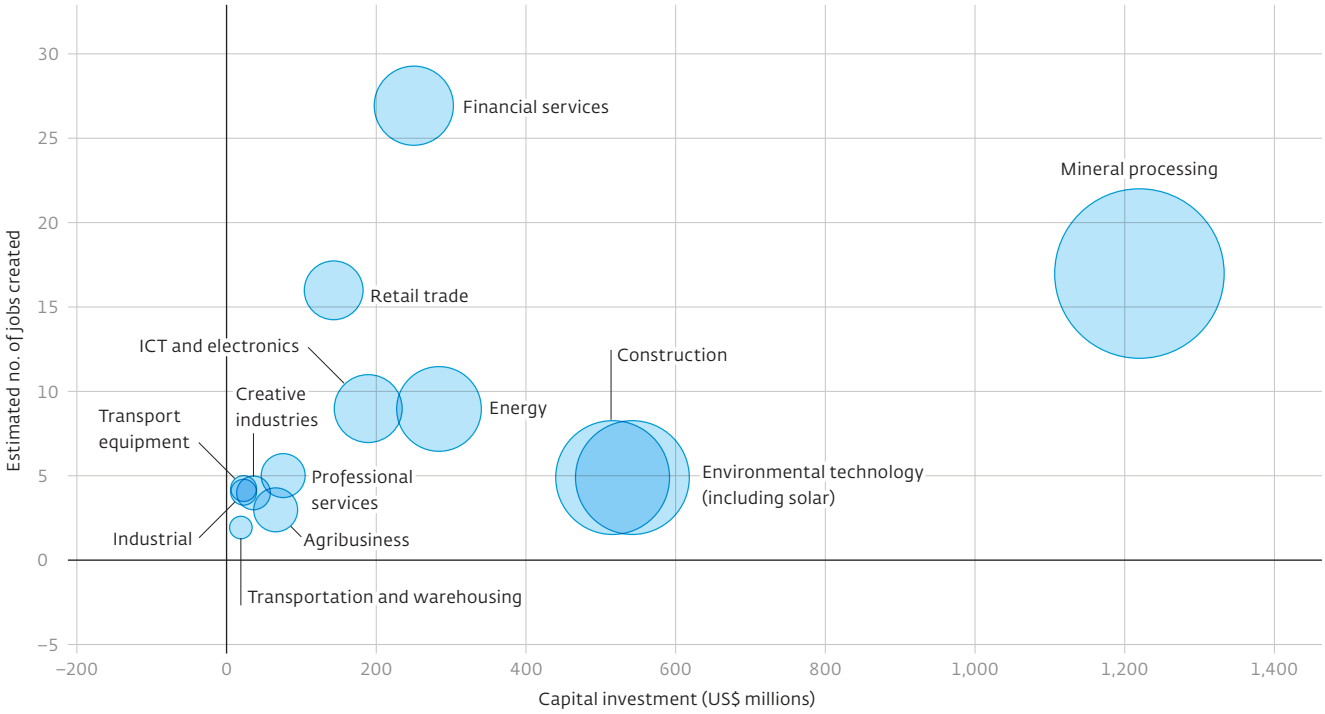
To escape the middle-income trap, Namibia must focus on building a diversified private sector. Namibia's growth largely came on the back of a vibrant mining sector, and the bulk of investment remains in this sector: in 2019, just over half of all FDI was concentrated in extractives. The mining sector has relatively low labor intensity and few links to other sectors (figure 1.4). There is concern that Namibia is stuck in the "middle-income trap," in which traditional sources of economic growth have dimmed and low productivity and export sophistication make it difficult to catch up with more advanced economies in the

FIGURE 1.3 Status of working-age population (15 and above) in Namibia, 2018



Source: NSA 2019.
Note: Namibia's population census has been delayed and these figures need to be updated.

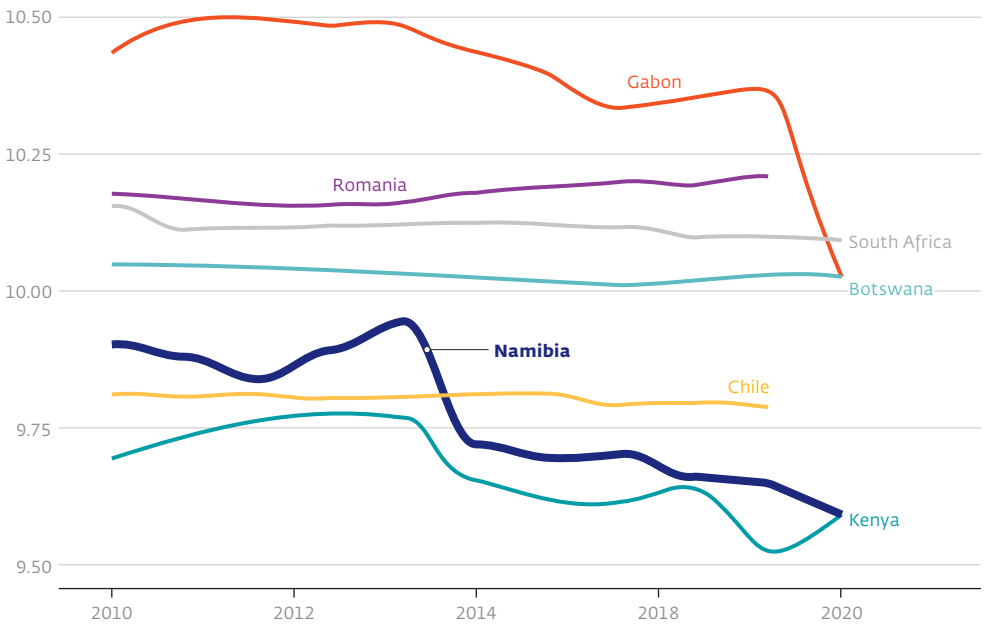
FIGURE 1.4 Job-creating intensity of FDI flows to Namibia, 2003–2020



Source: Adapted from fDi Markets database.
Note: FDI = foreign direct investment.

near term (figure 1.5). Namibia's macroeconomic framework shows that growth potential has peaked—and without significant advances in job creation and productivity, economic growth will be slow in the medium to longer term.[8]

FIGURE 1.5 Export Sophistication Index



Source: Calculations using data from United Nations Comtrade.
Note: The Export Sophistication Index attempts to capture the implied productivity of exported goods. The intuition behind it is that, when exporting a good, countries reveal their productivity levels, like the concept of revealed comparative advantage.

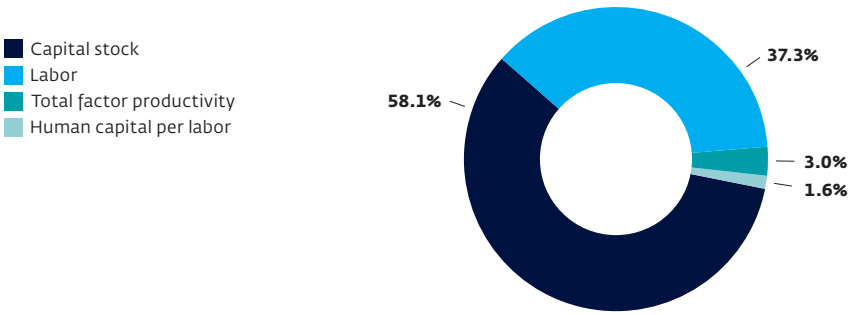
Increasing Namibia's productivity growth is also key, given that it lags far behind the average for upper-middle-income countries. Over the last 25 years, Namibia's GDP growth has been driven by capital accumulation and labor, with the contribution of growth in total factor productivity largely negligible (figure 1.6). The average contribution of capital stock accumulation to GDP growth was 62 percent during the 1992–2017 period, with labor accounting for 39 percent. During the same period, the total factor productivity contribution was mostly negative and the human capital per labor contribution was very low (near zero). Weak aggregate productivity reflects inefficient intersectoral allocation, with labor concentrated in the economy's lowest-productivity sectors. Capital efficiency has turned negative, suggesting the failure to allocate capital to the most productive uses or underutilization of installed capital, particularly in the mining sector (when commodity prices are low).

1.1 State of the private sector

Namibia has a dualistic private sector, in which an FDI- and commodity-based segment driven by exports is mostly delinked from a small, largely informal domestic segment. FDI inflows in the minerals sector are declining;[9] and, although there are new opportunities on the horizon such as in lithium production, there are limited prospects for job creation and growth in the domestic private sector. Formal employment in sectors such as public administration, education, finance, and mining accounts for about 43 percent of total employment[10] and is more male dominated than the prevalent informal employment in sectors such as agriculture and construction and in private households. The formal domestic private sector is seen as reliant on the public sector and is concentrated in the nontradable sectors.

The domestic private sector is characterized by poor productivity and competitiveness. A 2017 International Finance Corporation study on micro, small, and medium enterprises (MSMEs) estimated that there are approximately 71,000 MSMEs in Namibia.[11] Namibia's Ministry of Industrialisation, Trade and SME Development suggests that about half of MSMEs are formally registered, though this is an outdated estimate.[12] MSMEs provide employment and income to around 160,000 Namibians, accounting for approximately one-third of the country's workforce and contributing to 12 percent of GDP. The domestic private sector struggles with a range of structural challenges, including (1) lack of access to land, skills, markets, and affordable finance, (2) an uncompetitive business environment that increases the cost of doing business, especially for small businesses, (3) low rates of

FIGURE 1.6 Average contribution of each production factor to GDP growth, 1992–2017 (%)



Source: Adapted from World Bank 2021.
Note: GDP = gross domestic product.

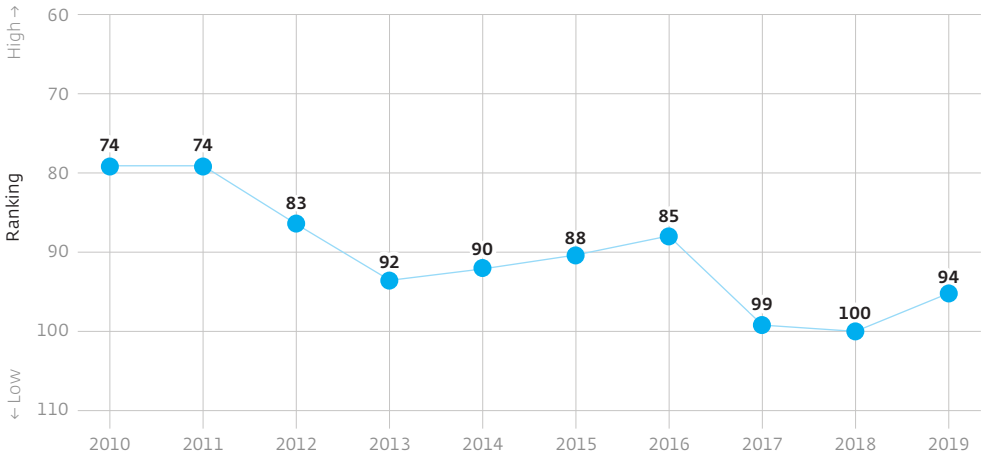
digital technologies adoption despite significant investments in digital infrastructure, (4) inadequate access to affordable and reliable infrastructure and business support services, (5) low rates of entrepreneurship and business creation because of the dominance of a few established market actors and the lack of a level playing field, (6) lagging levels of financial inclusion despite a well-developed financial sector, and (7) the dominance of state-owned enterprises, which effectively crowds out private participation and contributes to inefficiencies in key sectors of the economy.

Some of the key challenges faced by firms are access to finance, land, and electricity. The most recent Enterprise Survey (2014) revealed the top-five constraints identified by firms were access to finance, access to land, corruption, access to electricity, and licenses and permits.[13] The country's ranking in overall competitiveness (such as in the World Economic Forum's Global Competitiveness Index) has also dropped in recent years (figure 1.7), primarily because not only of its small market size but also to its lagging performance in business dynamism, macroeconomic stability, health, infrastructure, and information and communication technology adoption.

Credit to the private sector remains low compared to neighboring South Africa and the average for other upper-middle-income countries, but relatively high compared to other SACU countries. A heavily concentrated banking sector has led to low levels of competition and innovation, as banks have few incentives to invest in innovation and extend services to entrepreneurs, MSMEs, and excluded populations. Namibia's financial sector is dominated by four large financial conglomerates (three of which are subsidiaries of South African banks) that hold 98 percent of total bank assets. Between 2015 and 2019, domestic credit to the private sector as a percentage of GDP increased from 65.6 percent to 71.9 percent, well below both the 126 percent average for upper-middle-income countries and the 128.9 percent for South Africa, but much higher than the 20–33 percent range in other SACU countries (figure 1.8).

The availability of skills, especially in digital fields and science, technology, engineering, and mathematics, as well as a mismatch between skills taught and skills demanded by the private sector, remains a key constraint. The Namibia Systematic Country Diagnostic highlights the need to improve human capital and increase productive potential through investments in youth and education, from early childhood development through higher

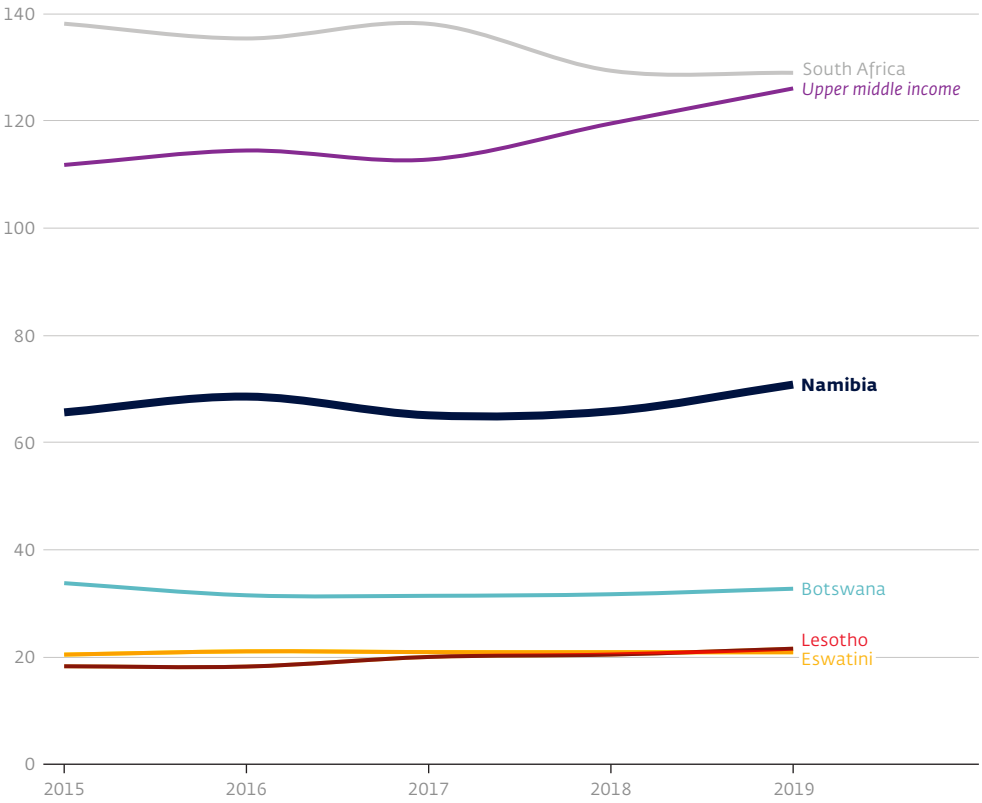
FIGURE 1.7 Namibia's global competitiveness rankings, 2010–19



Source: WEF 2010–19.
Note: The number of economies ranked during the 2010–19 period ranged from 137 to 148.

FIGURE 1.8 Domestic credit to the private sector

Namibia compared to other SACU countries (% of GDP)



Source: World Development Indicators database.
Note: SACU = Southern African Customs Union.

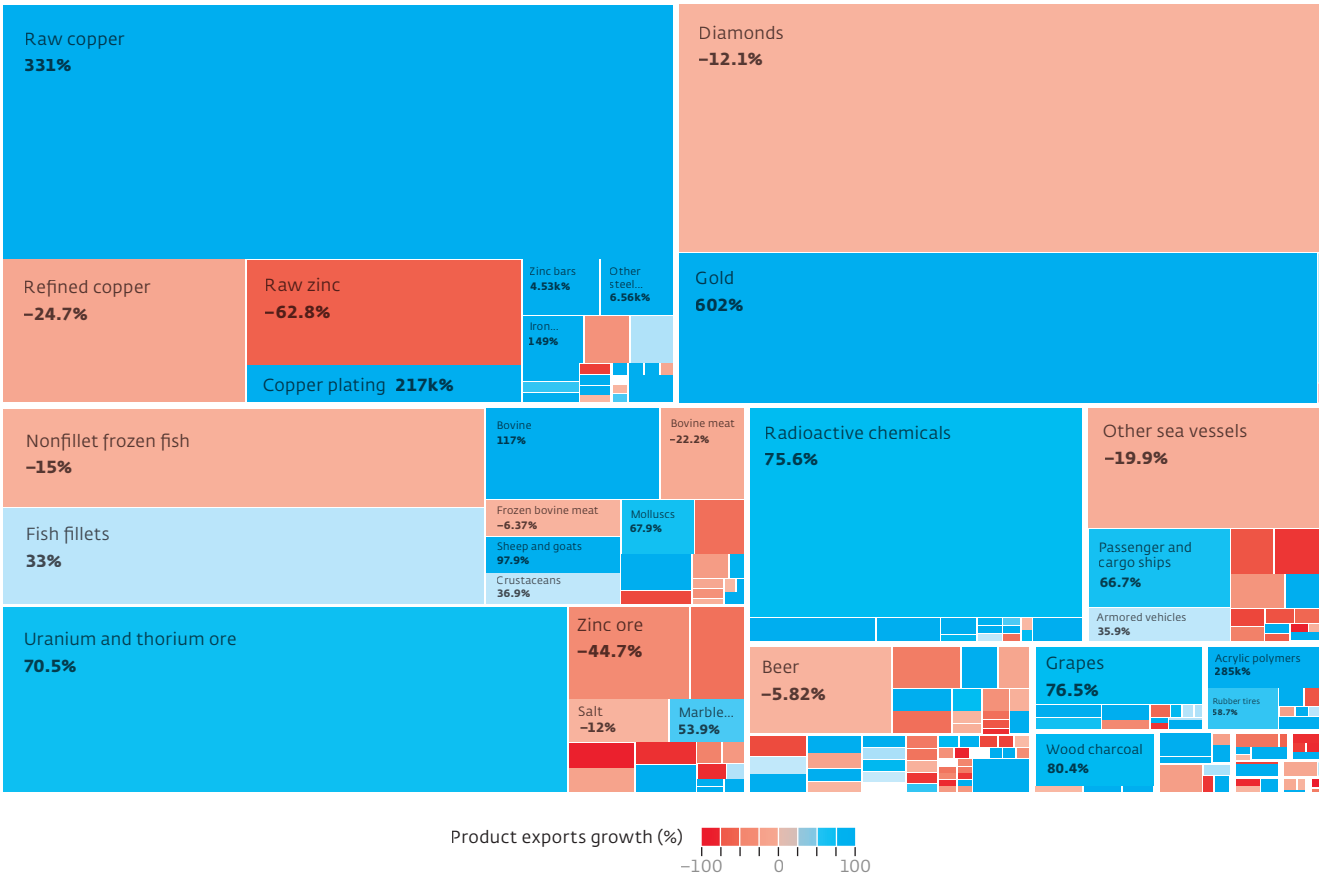
education.[14] There is also a need to continue to strengthen interventions and investments to bolster the quality, relevance, and efficiency of technical and vocational education and training, while making long-term investments to improve the quality of higher education. Additionally, aligning training programs with the needs of the private sector can mitigate the mismatch. In particular, there is scope to leverage the capacity and resources of the private sector in the design and delivery of innovative skills programs leveraging digital platforms. In parallel, immigration policy reforms to facilitate entry of foreign skilled workers and skills transfer can help alleviate the current gaps in the labor market.

There is scope to strengthen the ecosystem to create a more conducive growth environment for entrepreneurs and MSMEs. Namibia's nascent entrepreneurship ecosystem shows strong growth potential. The country ranks 61st out of 137 countries in the 2018 Global Entrepreneurship Index and is among the highest-ranking countries in Africa.[15] Initiatives such as Startup Namibia are providing entrepreneurs with both financial and nonfinancial support to address the current gaps in start-up skills, human capital, technology and innovation, and risk capital. Although the Namibian and regional ecosystems (including especially South Africa) offer good opportunities to start and grow businesses and access resources and markets, the capabilities to exploit those opportunities appear limited. This is particularly true for the adoption of digital technologies by existing businesses—an area where public procurement policies can play a catalytic role. There are significant opportunities to support startup investments in off-grid renewable energy, local broadband services, climate-smart agriculture, and government-to-business and government-to-person digital services, as well as in innovative areas such as 3D-printed affordable housing.

1.2 Key economic activities

Mining remains the main engine of growth of Namibia's economy, accounting for 10 percent of GDP[16] and more than 60 percent of all exports[17] but contributing to less than 2 percent of total employment.[18] Mining has been the driver of Namibia's growth since independence, given its impact on demand for other domestic goods and services. Namibia is well endowed with gem-quality diamonds, uranium, lithium, copper, lead, zinc, arsenic, cadmium, antimony, pyrite, silver, gold, and semiprecious stones. Diamond mining is the leading subsector. In 2019, the top-four exports were minerals, specifically raw copper (17.1 percent of total exports), diamonds (15.5 percent), uranium and thorium ore (10.2 percent), and gold (8.9 percent). Between 2014 and 2019, the value of diamond exports declined by 12.5 percent, while the value of raw copper, gold, and uranium and thorium ore increased, by 344 percent, 567 percent, and 87.8 percent respectively (figure 1.9). This decrease in diamond exports reflects the weakening global demand in recent years and recent price increases may be dampened by the conflict in Ukraine.[19] The increasing demand for copper stems from its use in several clean-energy technologies, including electric vehicles, battery storage, and renewable energy systems. Namibia is the world's fourth biggest uranium producer, accounting for 10 percent of global output in 2019.[20] The Husab Mine under Swakob Uranium is a joint venture between Namibia and China and is the third largest uranium mine in the world.[21] There are significant new opportunities in lithium production, as summarized in box 1.2. An issue facing FDIs is the proposed National Equitable

FIGURE 1.9 Commodity export growth, 2014–2019



Source: Adapted from Observatory of Economic Complexity database.

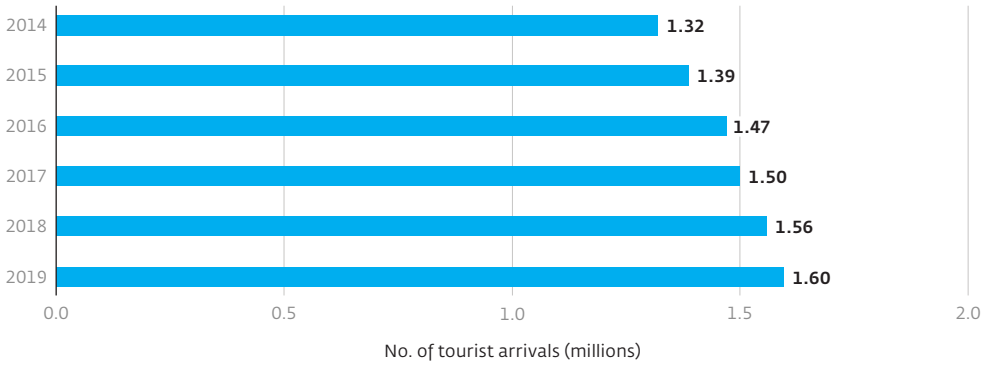
BOX 1.2 Opportunities in the clean-energy supply chain offered by Namibia's rich lithium deposits

The demand for clean-energy storage technologies is expected to increase significantly given the global efforts to limit emissions and keep rising temperatures under the 2°C scenario. To meet this new demand, lithium production must ramp up by more than 450 percent by 2050 (from 2018 levels). There is growing interest from global investors in Namibia, which has one of the largest lithium deposits in Africa. The Karibib deposits in the Erongo region, about 210 kilometers northwest of Windhoek, hold significant potential for lithium, rubidium, and cesium production. Desert Lion Energy began shipping lithium concentrate from Namibia's first large-scale lithium mine in April 2018. Meanwhile, preliminary results from exploration by AfriTin Mining Ltd., which owns the Uis mine, show significant lithium potential, and exploration drilling is scheduled for 2021/22. Lithium production offers new opportunities for Namibia to enter the clean-energy supply chain and attract new investments in segments of the lithium value chain that can create green jobs.

Economic Empowerment Bill, which is generating some anxiety among investors about regulatory uncertainty and could benefit from wider private sector consultations.

In 2019, tourism was one of the fastest-growing sectors and the third biggest contributor to GDP,[22] accounting for 10.9 percent of GDP, with 1.7 million foreign tourist arrivals.[23] The sector contributed around 14 percent to total employment[24] and 10 percent to export earnings.[25] Between 2014 and 2019, the number of tourist arrivals grew by 20.9 percent, from 1.3 million to 1.6 million (figure 1.10); most arrivals were from Angola, Germany, South Africa, Zambia, and Zimbabwe. Unfortunately, the COVID-19 pandemic resulted in an 87.2 percent drop in arrivals in 2020.[26] The inclusive tourism industry model in Namibia, which focuses on community involvement and community-based initiatives in host regions, offers tremendous promise. The Community-Based Natural Resources Management program has devolved rights over natural resources to local communities, a step that has led to the formation of 83 communal conservancies (38 of which are directly involved in tourism activities), 32 community forests, and a community association living within the boundaries of a national park.[27] These initiatives cover 20 percent of Namibia's land and empower 10 percent of the population as conservation stewards. COVID-19 has now brought tourism to a grinding halt, with dire consequences for host communities and those directly or indirectly employed by the sector. Recovery is likely to be slow as the global travel and hospitality sector adjusts gradually to the pandemic.

FIGURE 1.10 Tourist arrivals, 2014–19



Source: Adapted from BON 2020.

Namibia is home to one of the most productive fishing economies. The fisheries sector accounted for 4.5 percent of GDP[28] and about 10 percent of export earnings in 2019. The sector employs about 14,000 people directly; three times as many are indirectly employed in supporting industries such as fishery-related supplies, logistics, and stevedoring services.[29] Many fishery employees come from the northern parts of the country, but the sector's benefits reach beyond the Erongo and Karas regions, as workers send remittances home. The fisheries sector faces several challenges affecting its sustainable growth, particularly the competing use of ocean resources from different sectors, especially mining activities such as seismic exploration. A detailed assessment of the sector was not conducted as part of this diagnostic.

The agriculture sector has a dualistic structure: large-scale commercial farming dominates output, while smallholder communal farming is largely subsistence in nature. Although Namibia's agriculture sector contributed just 4 percent of GDP, it is the second biggest employer, providing nearly a third of employment and a quarter of the population's income. The large-scale commercial sector dominates output, and smallholder farming is characterized by low output, poor productivity, and low incomes.[30] About 70 percent of the population rely on agricultural activities for their livelihoods,[31] with livestock farming dominating agricultural output. Meat contributed 90 percent of agricultural export earnings and 6 percent of total export earnings in 2017.[32] The livestock value chain is well organized and regulated, meets high quality requirements and sanitary and phytosanitary standards, and has a good animal identification and traceability system. All these characteristics have enabled Namibia to penetrate high-value markets (for a more detailed discussion, see chapter 4).

Namibia is likely to be one of the countries most vulnerable to climate change and can expect significant impacts on the agribusiness, livestock, tourism, and fisheries sectors. Climate projections indicate increases on the order of 0.6°C to 3.8°C for the 2035–2065 period relative to 1961–2000, with the worst impacts expected to be felt by the poor.[33] The most destructive and frequent climate risks in recent years have been long-lasting floods and droughts, which impact both human activities and resources such as water, agriculture, livestock, natural ecosystems, the coastal zones, and biodiversity. These events could bring about an annual GDP decrease of around 6.5 percent.[34] The resulting GDP decline would substantially hinder the country's progress and prevent the empowerment of the poorest segments of the population, who are most vulnerable to climate change. However, Namibia is well positioned to capitalize on its solar and wind energy resources that provide clear comparative advantages in transitioning toward a green growth trajectory.

The COVID-19 pandemic exposed the underlying structural vulnerabilities of Namibia's growth model as it strives for a green, inclusive, and resilient private sector–led growth. Structural transformation of the Namibian economy has become even more critical to achieve broad-based and sustainable economic growth and extreme poverty eradication, as envisioned in the country's Fifth National Development Plan and the Harambee Prosperity Plans. Both the 2021 Industrial Policy and Vision 2030 emphasize the role of the private sector in Namibia's goal of becoming a high-income, industrialized nation focused on increased innovation, productivity, and value added, one with vibrant MSMEs and a more diversified and complex export sector. Nevertheless, there are several structural challenges that needs to be addressed through systematic and deep policy reforms to increase overall productivity and competitiveness, create new and higher-skilled jobs (especially for Namibian youth), and shift toward a more resilient and inclusive economy.

The Namibia Systematic Country Diagnostic identified four major constraints inhibiting economic growth and shared prosperity.[35] These constraints are (1) highly segmented input

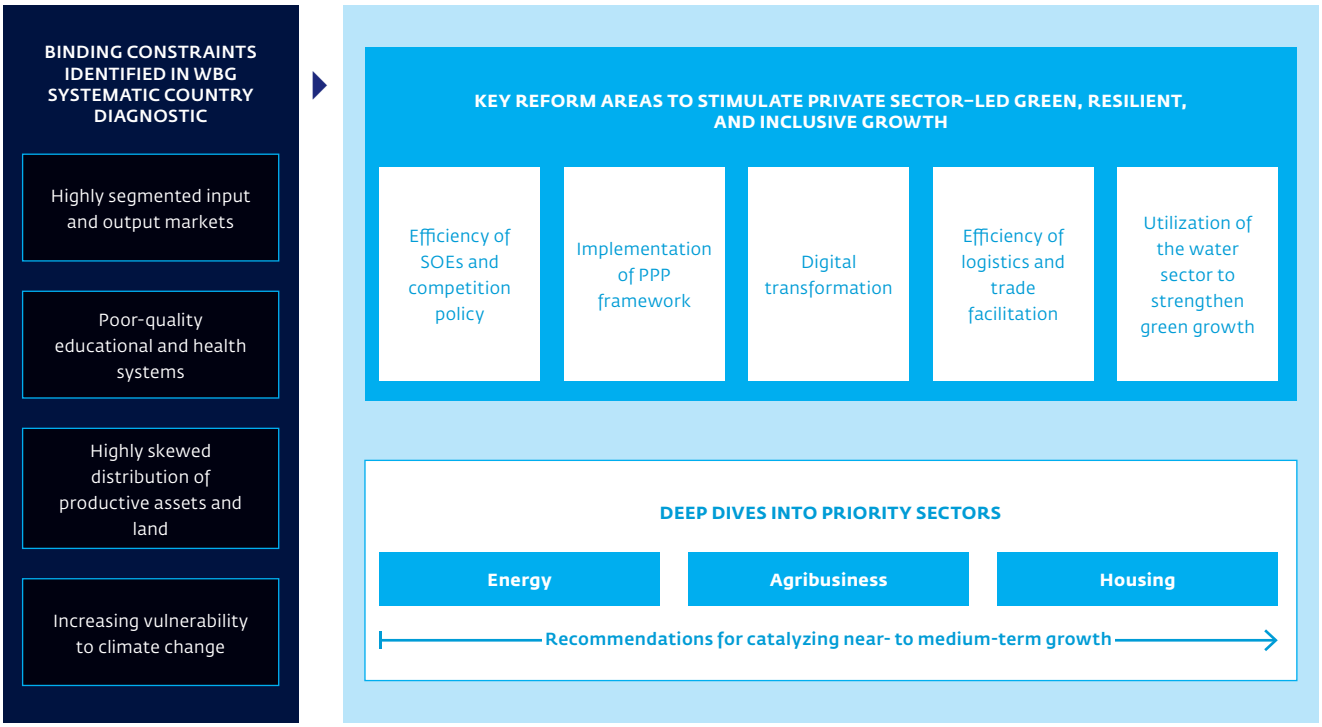
and output markets, characterized by a significant gap between those in high-productivity, high-paying jobs and those in low-productivity, low-paying jobs; (2) poor-quality educational and health systems, which preserve low productivity; (3) highly skewed distribution of productive assets and land, which poses a barrier to entry and growth for entrepreneurs and MSMEs; and (4) the increasing vulnerabilities to climate change and environmental shocks, which especially threaten the availability of water for agricultural and industrial production and the livelihoods of the disadvantaged segments of the population. This Country Private Sector Diagnostic (CPSD) focuses on the opportunities and challenges for strengthening private participation in the economy and identifies policy reforms that can unlock inclusive and climate-smart investments and creating jobs in three high-potential sectors: renewable energy, climate-smart agribusiness, and housing.

1.3 Structure of the Namibia CPSD

The primary objective of this CPSD is to identify near- and medium-term reform opportunities to revitalize Namibia's private sector and help reposition its growth on a green, resilient, and inclusive trajectory. The structure of this CPSD is set out in figure 1.11. This chapter provides a brief contextual overview of Namibia's economy and private sector. Chapter 2 focuses on the major cross-cutting constraints that are inhibiting private sector growth and provides a set of policy recommendations for unlocking the potential across the private sector. In line with the selective and targeted approach of the CPSD methodology, chapters 3–5 provide deep dives into three sectors prioritized by the government: renewable energy, climate-smart agribusiness, and housing. Each deep dive provides recommendations for reducing sector-specific bottlenecks to stimulate growth potential.

Renewable energy, climate-smart agribusiness, and housing were selected as priority sectors based on their growth potential, prioritization by the government, ability to leverage Namibia's natural resources and climate, and ability to stimulate job creation.[36] There is significant private sector interest in the renewable energy sector given the climatic conditions and energy challenges in Namibia. Strengthening private participation in renewable energy will reduce import dependence and can turn Namibia into a net exporter of energy in the region. It can also expand access to underserved communities, create new and skilled jobs, and address water shortages through desalination investments while positioning Namibia as a global competitor for green hydrogen. Effective private participation in the agribusiness sector can enhance productivity and exports in climate-smart horticulture and livestock value chains, provide opportunities to increase incomes, reduce poverty and inequality, and strengthen the links between small producers and global value chains. Finally, the rapid rate of urbanization and increasing demand for housing highlight the need to both foster private investments and develop financial products for the housing market. In conjunction with reducing policy, institutional, and regulatory gaps, these steps can cater to demand and create spillovers to other sectors, thereby creating new jobs and green economic growth opportunities. For more details on the rationale for selecting these sectors, see appendix B.

FIGURE 1.11 Structure of the Namibia CPSD



Source: Namibia CPSD team.
Note: CPSD = Country Private Sector Diagnostic; PPP = public-private partnership; SOEs = state-owned enterprises; WBG = World Bank Group.

Notes

1. This chapter draws primarily on data and analysis from World Bank (2021a). Data are updated to 2021 where available.
2. World Development Indicators data (constant 2010 prices).
3. South Africa accounts for about a fifth of Namibia's exports.
4. According to United Nations projections, this share will increase to three-fourths by 2050.
5. Based on 2019 National Council for Higher Education data.
6. NSA (2019).
7. Data from World Development Indicators database.
8. World Bank (2021a).
9. There are a number of contributing factors, including low commodity prices, declining demand for diamonds, local ownership requirements, and a challenging policy environment.
10. NSA (2019).
11. IFC (2017).
12. Namibia, Ministry of Industrialisation, Trade and SME Development. 2015. "National Policy on Micro, Small and Medium Enterprises in Namibia." Windhoek.
13. World Bank Group (2014).
14. World Bank (2021a).
15. Ács, Szerb, and Lloyd (2017).
16. NSA (2020).
17. For an overview of Namibia's exports, see the Atlas of Economic Complexity website at https://atlas.cid.harvard.edu/explore?country=155&product=undefined&year=2018&productClass=HS&target=Product&partner=undefined&startYear=undefined.
18. NSA (2019).
19. World Bank (2021b).
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23. Shilongo (2021).
24. Data from the World Bank's TCdata360 database.
25. Data from World Development Indicators database.
26. Compared to a forecasted 170,000 arrivals. See BON (2020).
27. World Bank (2021a).
28. Ibid.
29. Ibid.
30. Ibid.
31. GIZ (2021).
32. World Bank (2021a).
33. For more information on Namibia's climate action plan, see the United Nations Framework Convention on Climate Change website at https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Namibia%20First/INDC%20of%20Namibia%20Final%20pdf.pdf.
34. Ibid.
35. World Bank (2021a).
36. Although important, tourism was not selected after consultations with the government, given that the recovery of the global travel and hospitality sector is likely to be slow because of the COVID-19 pandemic.

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2 ADDRESSING CROSS-CUTTING CONSTRAINTS TO PRIVATE INVESTMENT

This chapter explores ways to unlock cross-cutting constraints that limit private sector development and lists priority reforms to enhance the role of the private sector in diversifying Namibia's economy toward a more inclusive, green, and resilient growth path. Addressing these cross-cutting constraints will not only create a more competitive business environment for the private sector but also help boost investor confidence. The chapter discusses five cross-cutting themes: (1) enhancing the role and performance of the state-owned enterprise (SOE) sector through a more effective competition policy environment, (2) strengthening implementation of the public-private partnership (PPP) framework to expand private investments, especially in infrastructure, (3) leveraging the potential for digital transformation of the economy, (4) addressing inefficiencies in logistics and trade facilitation, and (5) tapping opportunities in the water sector for green and resilient growth.

2.1 Establishing more effective competition policy

Namibia's largely monopolistic market structure and dominant public sector create an uneven playing field for the private sector. Public enterprise or SOE sector dominance in a small economy such as Namibia's creates anticompetitive effects, especially when SOEs operate in monopolistic and privileged positions in key sectors of the economy—as they do even in sectors where private participation could be more efficient and transformative. There are 22 designated commercial SOEs in the country across at least 15 sectors (out of a total of 81 SOEs).[1] Despite having a much smaller market size than most Organisation for Economic Co-operation and Development (OECD) countries, Namibia has the same number of SOEs as the OECD average. SOEs have 90–100 percent of market share in electricity generation and import, fixed-line telecommunication services, postal services (other than couriers), air operation infrastructure, maritime transport infrastructure, railway transportation, road infrastructure, water supply, and mobile telecommunication. Over four-fifths (82 percent) of all recorded SOE losses were due to Air Namibia, TransNamib, and the Roads Contractor Company.[2] Given the small market size, overall efficiency and productivity gains could be achieved by carefully delineating sectors able to benefit from private participation and sectors where existing SOE performance could be enhanced.

Overall, SOEs have key advantages over private firms. According to an assessment of 19 indicators of product market regulation,[3] the restrictiveness of product markets is linked to several factors: state involvement in business operations through SOEs; controls on certain

prices that may increase costs for final consumers; barriers to entry, trade, and investment; and ineffective enforcement of the antimonopoly policy. Another factor inhibiting competition is the government's decision to approve infant industry protection to protect the domestic market,[4] in the form of quantitative restrictions or high customs duties in certain sectors (poultry, cement, milk).[5] This has made it difficult for foreign firms to enter certain sectors, and SOEs are likely to continue dominating the market given the small private sector in Namibia. Thus, despite progress in developing a legal framework for competition, the effectiveness of competition policy and regulation remains limited.

SOEs enjoy several advantages that inhibit the entry and success of private participants. SOEs have preferential access to sources of production such as finance and land, legislated monopolies in specific sectors, preference through policies and oversight practices of shareholders, and multiple roles that create conflict between regulatory functions and operations. When it comes to access to finance, SOEs have a competitive edge over private firms given their access to subsidies, guarantees, and bailouts. The artificial propping up of public enterprises that are uncompetitive—for example, through public subsidies and guarantees—leads to inefficiencies and imposes a substantial fiscal burden on the government. In this regard, it is encouraging that the medium-term expenditure framework (2021/22 to 2023/24) intends to reduce these support mechanisms.[6] Public enterprises have also benefited from preferential treatment from commercial banks and development finance institutions.[7] For example, the Namibia Wildlife Resorts is still servicing a 2006 loan from the Development Bank of Namibia, and for more than 10 years has paid only the interest portion.[8] Some SOEs also enjoy preferential access to land, which is a significant constraint for the private sector. For example, the National Petroleum Corporation of Namibia (NAMCOR) was able to set up a public use fuel station within the boundaries of the Namibia Airports Company (NAC), despite the existence of a private fuel station just beyond the boundary. Other examples include the expansion of Namibia Port Authority (Namport) to the north of Walvis Bay and the Agricultural Business Development Agency's access to irrigation farms.

Several SOEs have sectoral monopolies, including in transport, water, power, and tourism. TransNamib, Namport, and the NAC are exclusive service providers in the rail transport, seaport, and airport operations subsectors, respectively. The Namibia Power Corporation Ltd. (NamPower) has exclusive rights to develop and maintain the country's power transmission network and is currently fully in charge of national power generation. This situation may change soon with the uptake of the Modified Single Buyer model, which will provide for direct offtake by bulk power consumers (private companies, municipalities, offices, ministries and agencies of government, and public enterprises) from the independent power producers. Namibia Wildlife Resorts is the only tourism operator in Namibia that may operate inside national parks. Community-managed conservancies have been granted some park access rights, but not the right to set up tourism lodge facilities inside the parks. The Namibia Water Corporation Ltd. (NamWater) controls the full value chain for bulk water supply—generation, transmission, and distribution to bulk customers. Private firms are dependent on these government-owned monopolies for key inputs and support services such as port operations, aviation and bulk rail transport services, electricity, water, and telecommunications. Without competition, SOEs are unlikely to deliver these inputs and services efficiently, which undermines core government objectives such as improving competitiveness, economic diversification, growth, and provision of affordable, reliable, and accessible basic services.

SOEs and the private sector operate on an uneven playing field because they are not held to the same standards of accountability and compliance to the law. As of June 2020, several public enterprises were not in compliance with the provisions of the Public Enterprises

Governance Act and the Companies Act.[9] A private company seeking financial support or banking services from a commercial bank must furnish audited annual financial statements. But public enterprises do not publish such statements, and in some instances still enjoy banking services and facilities despite this failure to comply with the Companies Act.[10] SOEs are also not held to the same requirements for value added tax, corporate tax, or payroll-related obligations such as PAYE (pay as you earn), pension fund contributions, and employees' benefit premiums. Noncompliance can often make public enterprises appear more competitive than they are.

Some SOEs lack a separation between operating and regulatory functions, providing incentives to keep competitors out. According to international best practice, an SOE that is active in a sector of the economy should not have a simultaneous regulatory function for that sector. Yet, legislation assigns both regulatory and operational roles for several key SOEs. For example, NAMCOR was appointed as an advisor to the Ministry of Mines and Energy (MME) and has been assisting in regulating the upstream petroleum sector. At the same time, NAMCOR is also involved in upstream exploration licensing and is an active shareholder in a new oil exploration project led by the Canadian Reconnaissance Energy Africa Ltd. This creates a conflict of interest. Downstream, NAMCOR is managing the National Oil Storage Facility and putting up service stations across the country while also advising the MME on various regulatory issues, including fuel price, even though NAMCOR is also the recipient of a significant portion of the fuel levy.[11]

In November 2021, the Namibian government announced changes to the Ministry of Public Enterprises (MPE) over a five-year period. Based on the recommendation of a high-level panel on the Namibian economy, the MPE is envisaged to become a holding company under the Ministry of Finance (MOF), which would have direct oversight into the financial and operational performance of public enterprises and ensure that subsidies were more aligned to compliance and performance. This would also enable the MOF to have control of and be directly involved in the establishment of the holding company. The move is part of the government's efforts to transform Namibia's public enterprises and streamline the administration. There are on-going initiatives to improve SOE governance and efficiency, through the SOE ownership policy and transformation plan. These reforms, if well implemented, can open new opportunities for the private sector including small and medium enterprises (SMEs) and enhance overall economic competitiveness.

2.2 Strengthening implementation of the PPP framework to expand private investment

Even before passage of the PPP Act of 2017, Namibia had strong private participation in infrastructure. The first privately financed projects consisted of the partial divestiture of the Mobile Telecommunications Company (MTC), a water project, and seven electricity projects—all of which reached financial close. All these projects except one were PPPs. A 1996 management and lease PPP for electricity distribution in northern Namibia ended in 2001, and the remaining six PPP projects are still active. Four renewable energy PPPs, two of them unsolicited proposals, reached financial close over 2017 and 2018. These PPPs show a progression in implementation complexity: the four more recent PPPs included build-own-operate projects, in contrast to the management and lease contracts used by the first three PPPs, which reached financial close between 1996 and 2001. The four recent renewable energy PPPs mobilized US$121 million in private finance to provide 57 megawatts (MW) in generating

capacity. The projects secured a mix of local and international finance, demonstrating both local capacity and Namibia's international competitiveness as an investment destination. Two of the recent renewable energy PPPs—the 37 MW Mariental Solar Plant (investment of US$70 million) and the 10 MW Ejuva One/Ejuva Two Solar Plants (investment of US$32 million) secured the support of bilateral and multilateral development partners, including a Multilateral Investment Guarantee Agency guarantee for the latter.

None of the existing PPPs are subject to the PPP Act of 2017, as Namibia has yet to procure a PPP under its nascent legislative framework. Namibia has a sound albeit nascent PPP system and has made considerable recent efforts to build a PPP framework, including passage of the PPP Act 2017, formation of a PPP Committee to lead the PPP program, adoption of the PPP Regulations 2018 and the PPP Manual, setup of the PPP Unit under the MOF (which reports to the PPP Committee), and establishment of capacity for screening and otherwise facilitating PPP projects. But the new PPP framework has not yet been fully tested, as no PPP transaction has reached financial close under the PPP Act 2017. There may be opportunities to further simplify and reduce the bureaucratic burden of the current PPP framework.[12] Implementation capacity is slowly developing, but like the framework itself is also nascent. Notably, the MOF will establish a Project Preparation Fund under the Development Bank of Namibia; funding has already been committed and a portion of it has already been disbursed.

The PPP Unit has identified ten PPP pipeline projects, five of which the Namibian government has formally announced. These projects cover renewable energy, water (wastewater treatment and desalination), agriculture (irrigation and green schemes), pharmaceutical supplies, affordable housing, a student village, and rehabilitation of housing for Ministry of Health staff as well as the redevelopment of an office building for the Ministry of Justice. Most are in their early stages. The most advanced is a 25 MW solar project for the City of Windhoek that is under project preparation. The five projects formally announced by the government are in wastewater treatment, desalination, solar power, and student village development.

A robust PPP framework accompanied by critical business environment reforms could attract much-needed private investment, especially in energy and water, thereby reducing fiscal burdens. The new PPP framework could be more effective if implemented against a backdrop of tangible progress in addressing the broader business environment constraints described in this chapter. For its part, the PPP framework should provide policy certainty and enable a robust, expanding pipeline of new opportunities for value-for-money investment, rather than relying on the public sector planning system or opportunistic project submissions to the PPP Unit for consideration. Capacity will grow over time as participants learn from successful transactions and as systematic the links between the planning and budgetary processes are developed. Implementing the PPP framework will help expand and strengthen the PPP pipeline and work to prevent a situation in which projects are selected only because they have not secured budget financing.

PPP implementation could be strengthened by learning from global practices and experience. Namibia could benefit from the experiences of other countries in implementing an effective PPP program. Lessons from successful programs include the following:

— Demonstrate success in first-mover and priority projects before broadening the program to smaller and higher-risk projects that are tied to social or economic empowerment.

— Streamline transparent processes for project preparation and procurement so they do not impose onerous burdens on project proponents (for example, the current requirement in

Namibia that each project prepare a feasibility study and secure five approvals may be too demanding).

— Encourage public entities and SOEs to consider PPP options in public service delivery and to strengthen their understanding and capacities; this is being done by the PPP Unit while transitioning in the medium term toward a framework that integrates public investment management, PPP, and fiscal commitments and contingent liabilities.

— Effectively use the proposed Project Preparation Fund to facilitate timely and higher-quality project preparation.

— Nominate a PPP champion, such as the minister of finance, to spearhead the PPP program, perform a coordination role across line agencies, and foster close partnerships between the PPP Unit, the Namibia Investment Promotion and Development Board, and the Environmental Investment Fund.

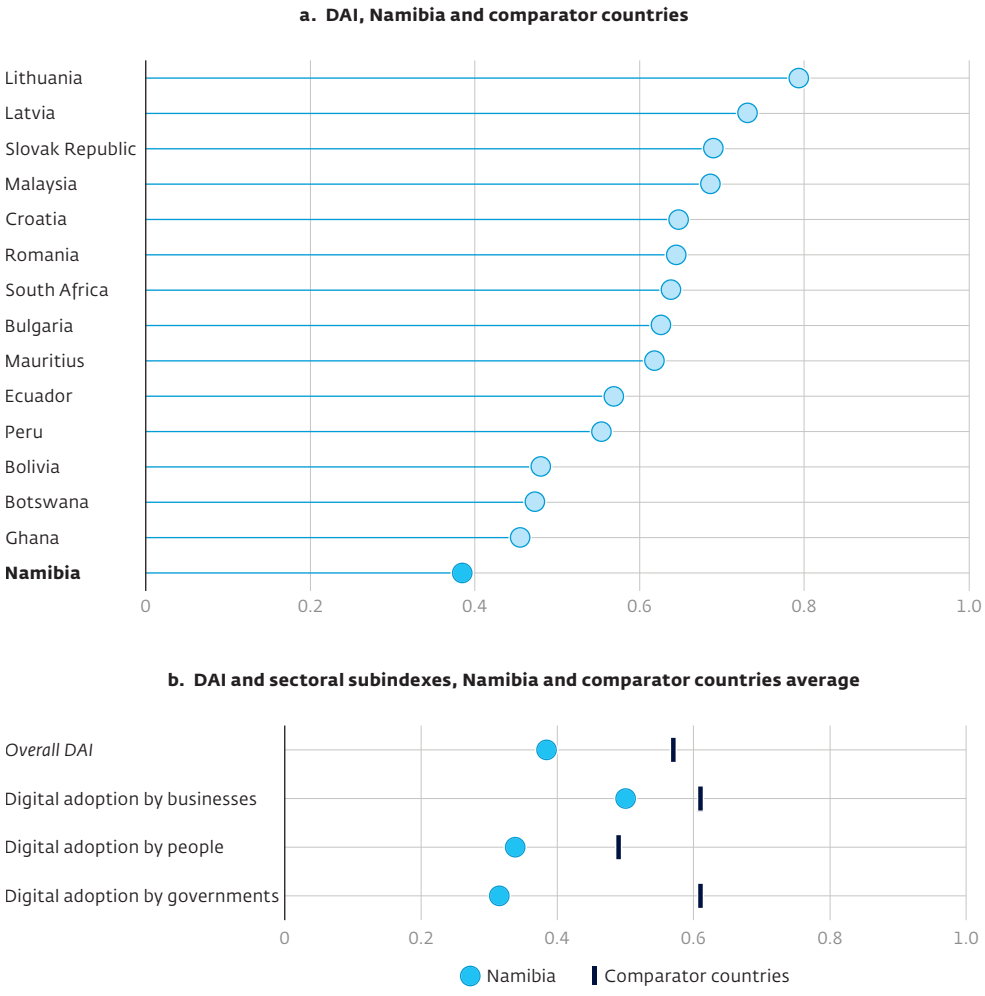
2.3 Leveraging the potential for digital transformation of the economy

Despite a mature telecom market, adoption of digital technologies is still lagging. Although Namibia was a pioneer in Africa in launching both 3G and 4G/LTE (Long-Term Evolution) networks, and although it has good coverage, it lags upper-middle-income comparator countries on the World Bank Digital Adoption Index, which measures information and communication technology use by businesses, governments, and citizens (figure 2.1).[13] For example, most public schools are yet to be connected to the internet. Weak competition in the broadband market remains a challenge and keeps costs high; wherein 1 gigabyte of monthly prepaid data in Namibia costs an average US$8.3, compared to US$4.7 in South Africa or US$4.3 in the Democratic Republic of Congo.[14] According to the Global System for Mobile Communications Association (GSMA), in 2021, Namibia's mobile broadband adoption at 36 percent and smartphone penetration at 53 percent lagged its regional peers (52 percent and 65 percent, respectively). Fixed broadband has rolled out slowly, with just 2.5 subscriptions per 100 people.[15] Consequently, digital adoption rates are much lower than in peer countries and infrastructure investments are lagging.

Access to digital services remains a challenge, especially for women and rural communities. Significant disparities across end-users in access to digital connectivity remain in Namibia. Gender gaps in access to mobile telephony exclude women from accessing mobile money services; although women are responsible for a large share of daily transactions to buy goods, only 47 percent of Namibian women have access to the internet.[16] Women in rural areas experience particular challenges, as the deployment of 3G networks have so far been restricted to urban areas and some areas of specific economic interest, such as mining locations. This is the case despite proven benefits in value and job creation from expanding digital access.[17]

Expanding digital access is central to scaling up digital financial services, which can increase financial inclusion. The Namibia Financial Inclusion Survey put the proportion of financially included adults at 78 percent in 2017, an increase from 69 percent in 2011 and 49 percent in 2007; but mobile money penetration stood at 45 percent, which indicates that there is substantial room to grow.[18] Bank branches are still largely concentrated in urban areas, where 90 percent of people needed an hour or less to reach a bank. In comparison, more than 40 percent of people needed an hour or more to reach banks in rural areas.[19]

FIGURE 2.1 Digital Adoption Index, 2016



Source: Based on World Bank 2021a and data from World Bank 2021b.
Note: Data from 2016 are the most recent available.

Despite a well-developed financial system, a large share of the rural and low-income population is excluded from formal financial services. Digital financial services provide an opportunity to increase financial inclusion, which is critical to the achievement of poverty reduction and inclusive economic growth. Strengthening access to digital financial services can help underserved micro, small, and medium enterprises (MSMEs) access finance. Use of online banking is limited, which inhibits access to credit and the Development Bank of Namibia noted the importance of pairing both financial and digital literacy.

Digital financial services can also support MSMEs, which lack the credit information needed to access finance. According to International Finance Corporation estimates, 39 percent of MSMEs in the country lack access to credit, resulting in a financing gap of US$1.8 billion.[20] The financing gap is estimated to be more acute among microenterprises; an estimated 42 percent of micro firms need greater financing, compared to 15 percent for the SME segment. An improved credit information system for MSMEs, a secured transactions framework for movable assets, and a modernized insolvency regime are among the reforms that could help increase access to finance for MSMEs.

Reducing market concentration while facilitating the entry of new operators could enhance investments and technology to improve service quality, access, and affordability. The

wireless sector is dominated by the MTC, which is majority state-owned, and its sole competitor is the mobile arm of wholly state-owned fixed-line incumbent Telecom Namibia (TN Mobile). The two entities hold 91 percent of the assets and 88 percent of the revenue in the sector. A third mobile network operator, Paratus Telecom, is a Namibian-owned internet service provider (ISP) and technology/service-neutral facilities-based licensee that has recently marketed mobile 4G/LTE network services covering Windhoek and its surrounding areas as well as Walvis Bay, Swakopmund, Okahandja, and Otjiwarongo. This is a positive development, particularly if it leads to interconnection and infrastructure-sharing agreements between the MTC and TN Mobile. Although the Communications Act 2009 does permit full competition in the telecom market, including licenses to operate international gateways, the dominant position of the SOEs across the value chain inhibits entry of new actors in a small market. The planned listing of a minority of MTC shares is a welcome step to attract new capital (although shares are expected to be bought by government/SOE pension funds).

The experience of other countries suggests that increased market contestability, especially at the last-mile and wholesale levels, could enhance digital transformation. Despite significant strides in telecom investment since the 2000s, the development of the Namibian telecom market has been constrained by a lack of market contestability at both last-mile and wholesale levels. This has prevented further development in the digital sector, particularly as a result of high end-user tariffs and quality of service issues. Partial or full privatization of state-owned telecom enterprises is a necessary step to renew investment in the sector. The government has sought in the past to allow foreign investment in TN Mobile and the MTC. Such initiative should be resumed and encouraged to accelerate investments at both middle-mile and last-mile levels. Government should consider full privatization of the MTC or at a minimum taking on board one or more strategic partners to assume majority ownership and control operations. It should also consider an exception to requirements for a minimum 51 percent Namibian ownership in the firm; this change could attract experienced international players with deeper access to capital who could immediately bring to the market digital services and content offerings such as mobile money services. A similar full or partial privatization could be considered for TN Mobile.

Accelerating international connectivity and national open access fiber infrastructure through private participation could increase access to affordable and reliable bandwidth. The submarine cable of the Orange Group–led consortium Africa Coast to Europe (ACE), which links France and South Africa via landing points including Namibia, went live in 13 countries in December 2012. As of August 2019, Namibia was among the participating countries still waiting for commercial ACE services to be launched in additional phases. The Equiano submarine cable has a planned branching for Namibia, but local partners and financing are yet to be identified. This subsea project will be similar to the 2Africa cable project led by Facebook, which is the largest subsea project in the world, connecting 26 countries in Africa, Europe, and the Middle East. Paratus Africa signed a commercial contract with NamPower in August 2019 allowing it to use the data capabilities of the Namibian power utility's national fiber-optic network, called "The Grid Online," which was officially launched in March 2019. Paratus will access the network in strategic locations to extend its own fiber-optic coverage and add redundancy. Paratus completed the 4,160-kilometer terrestrial Trans-Kalahari Fibre (TKF) route linking Namibia to Botswana and Tanzania. Paratus has reached agreements with Botswana Fibre Networks for the purchase of dark fiber capacity and transit capacity across Botswana. The new network provides capacity from the West Africa Cable System landing station at Swakopmund to Windhoek, as well as to Botswana (via Buitepos) and Zambia (via Ngoma and Sesheke).

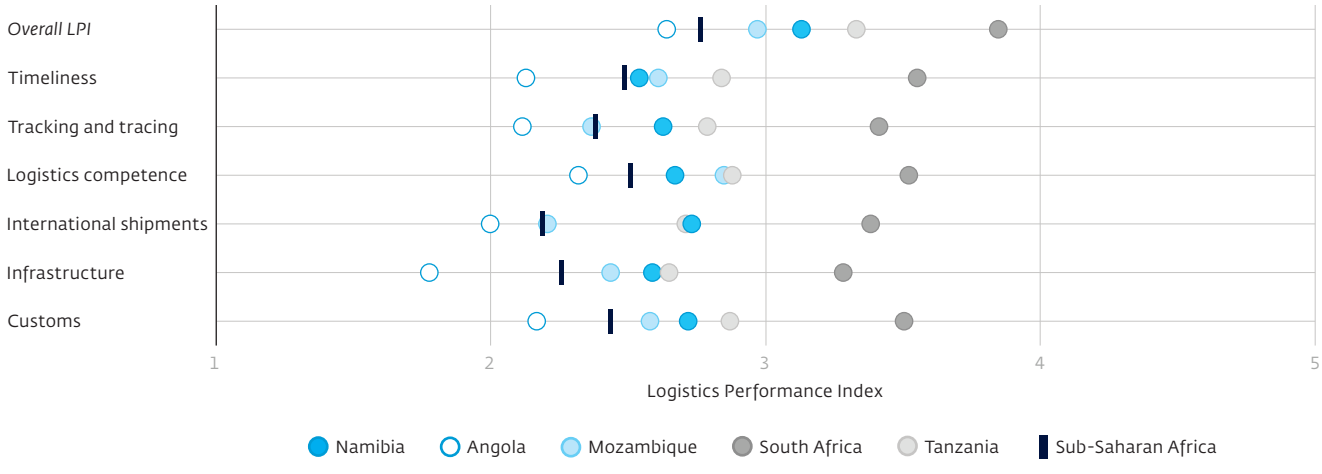
In December 2019, Paratus reported that it was completing a redundancy route between Namibia and Maputo, which will interconnect with the TKF network and, once finished, be the company's second east-to-west-coast Africa connection.

New ISP licenses and infrastructure-sharing arrangements can accelerate the deployment of high-speed broadband services for residential and business customers. Fiber-to-the-home (FTTH) remains a marginal service in Namibia amid very slow uptake. The Communications Regulatory Authority of Namibia reported 498 FTTH subscriptions at end-December 2018, a figure that had risen to 3,782 by the end of June 2021.[21] Options to expand access include credibly enforcing infrastructure-sharing regulations, using planned spectrum allocation processes to encourage new market entry (and perhaps restrict access to dominant players, as in South Africa's strategy), and leveraging the purchasing power of the government as an anchor client for a new market entrant (providing a long-term contract for connectivity services to government offices as well as schools and health centers).

2.4 Addressing inefficiencies in logistics and trade facilitation

There are increasing opportunities for Namibia to position itself as an alternative logistics gateway for Southern African Development Community countries. Leveraging its four main trade corridors,[22] Walvis Bay is attracting traffic from Botswana and new attention from South Africa's Northern Cape agriculture hub. The Logistics Master Plan includes the proposed development of a Logistics Hub Center in Walvis Bay to be implemented by the Walvis Bay Corridor Group. This has the potential to become a transit/transshipment cargo hub that will generate sufficient traffic to improve connectivity to global markets and reduce logistics costs, in line with the vision to become a "logistics nation" by 2025.[23] In the Logistics Performance Index, Namibia significantly lags South Africa and is roughly on par with Mozambique and Tanzania. When looking at the total index score, Namibia is ranked third of five countries with ports in southern Africa (figure 2.2). To gain a competitive edge, Namibia needs to improve its performance across the board—in timeliness, tracking and tracing, logistics competence, international shipments, infrastructure, and trade facilitation.

FIGURE 2.2 Namibia's logistics performance compared to competitors in southern Africa, 2018



Source: Arvis and others 2018.

The COVID-19 pandemic has created new challenges affecting the Walvis Bay corridors' traffic performance. The global container shortage and sharp decline in air connectivity due to the COVID-19 pandemic are threatening the performance of the corridors and have exposed the deficiencies arising from the lack of digitalization. International shipping lines have been skipping some ports (called "blank sailings"), such as the Walvis Bay port, creating a threat for the Walvis Bay corridors and Namibian exporters.[24] The pandemic's impact on air travel and tourism significantly reduced Namibia's airfreight connectivity, affecting exporters of perishable cargo such as fresh fish and blueberries. Even before the pandemic, the lack of digitalization across supply chain stakeholders and government agencies negatively impacted trading times and trade costs. COVID-19 has exacerbated the drawbacks of paper-based trade with slower processing of trade documentation (due to lower staff attendance), extra costs, and elevated health risks for truck drivers, customs brokers, weigh bridge inspectors, and border agents.

Several challenges currently hinder the competitiveness of the logistics sector, affecting in particular service cost and efficiency:

— Logistics is weak across modalities. Sea connectivity is infrequent or unavailable due to competing ports; air connectivity depends on passenger traffic rather than cargo needs; rail transportation is unreliable due to outdated railway and equipment; and road transportation entails high costs due to empty backhauls and a restricted trucking market. The quality of the road network is also being subjected to increased pressure (especially from high load mining freight from Zambia) due to the inefficiencies of the rail network.

— Development of logistics facilities is delayed by a challenging investment climate for logistics investors.

— There is a lack of skilled logistics professionals.

— The availability of systematic data to monitor the performance of the Walvis Bay corridors is limited.

— An additional challenge for agribusiness exporters is the lack of good-quality third-party storage facilities, which leads agribusiness exporters to rely mainly on in-house cold storage facilities or to use reefer containers as temporary storage for exports.[25]

Significant improvements are required to enhance trade facilitation along the Walvis Bay corridors. Increased traffic along the corridors calls for significant upgrades of the land border posts. A lack of government officials and short operating hours (12 hours a day) has led to congestion at borders. The delays in the digitalization of border processing have also created bottlenecks that delayed several trade facilitation initiatives, such as the Namibian Single Window, the customs-to-customs connectivity with neighboring countries, and the One-Stop Border Post. The private sector's lack of involvement in government decisions regarding borders was also reported as a bottleneck.[26] Road transportation costs are high because restrictions arising from cabotage policies and the third country rule forbid backhaul cargo (apart from on the Zambia route).[27]

Accelerated regulatory reforms can help overcome the challenges posed by the COVID-19 pandemic and enhance private investment. The regulatory bottlenecks that have hampered road transportation services, such as the overload rules and market entry barriers in trucking, need to be reviewed. There are opportunities to target and attract private investments in the development of modern logistics services and facilities, especially for temperature-controlled logistics to support agribusiness. There are also opportunities to upgrade railway infrastructure and operations, continue to improve road connectivity, reassess Namibia's sea connectivity strategy to support the Walvis Bay corridors, and update the National Logistics Master Plan by addressing the changes in trade patterns.

A comprehensive mapping of trade and traffic flows could help identify the critical infrastructure gaps and investments needed which could then be translated into an investment plan including opportunities for PPPs.

Accelerating digitalization initiatives to facilitate trade could significantly improve overall trade competitiveness. Adopting an accelerated broad digitalization effort will enable real-time monitoring of the corridors; rolling out the Corridor Trip Management System and virtually connecting supply and demand in trucking to address empty backhauls will significantly improve logistics performance. A number of other reforms could lead to significant gains in competitiveness: implementing the Single Window for fast and contactless trade processing; advancing communications between customs systems toward the "Your Export is My Entry" process for efficient trade with neighboring countries;[28] developing a trade portal (which would especially benefit agribusiness traders, whose goods are subject to several categories of restrictions); adopting a virtual queue management system at land border posts; implementing risk management across all agencies involved in import and export to ensure inspections are focused on risky shipments or traders (rather than ad hoc); improving efficiency at the border crossings by upgrading facilities; increasing capacity and competency of government officials; enabling 24/7 operations; and streamlining activities at the borders to reduce congestion and health risks.

2.5 Tapping opportunities in the water sector for green growth

Water shortages and increasing vulnerability to climate change pose a severe threat to sustainable economic growth. Namibia is the driest Sub-Saharan African country and the most vulnerable to climate change shocks. The combined effects of highly variable and low levels of precipitation, increasing temperatures and evaporation rates, and water pollution pose a severe threat to economic growth and livelihoods, especially among the poor. Water demand is expected to increase by over 30 percent by 2030, driven mainly by urbanization, irrigation for agricultural production, and the needs of the tourism sector, especially in the central area, the Walvis Bay–Swakopmund coastal area, and the Cuvelai area in north-central Namibia, with high rural population density.[29] The agriculture sector, which provides livelihoods for almost 70 percent of the population, will be particularly hard hit, with substantial impacts on grain production and land for livestock grazing. The effects of climate change are further exacerbated by deforestation and overgrazing, both of which put additional pressure on the water table and have led to decreasing agricultural harvest (see appendix C for information on the economic costs). The availability of adequate water will also influence investments in mining and associated industries, as they are water intensive.

Urban water supply coverage is considered satisfactory, but there are disparities for poor and rural households. Low access and coverage are particularly challenging in lower-income and informal settlements. In 2020, 84 percent of the total population used at least basic drinking water services (71 percent for rural households and 96 percent of urban households).[30]

Rationalizing water consumption, further addressing nonrevenue water losses, and exploiting unconventional water sources can complement existing approaches. Windhoek's globally recognized wastewater recycling system for direct potable water supply and managed aquifer scheme have enabled substantial artificial recharging of the water table. They suggest the possibilities going forward for other unconventional sources with much potential, such as desalination of seawater and brackish water, reuse of semipurified water, recycling of industrial and mining water, conjunctive use of groundwater and surface water,

artificial recharge of aquifers, mixing of potable and brackish water, rainwater harvesting, and fog harvesting.[31] Table 2.1 shows that there is significant untapped potential in both primary and secondary new sources beyond rational use of existing supply. Namibia's first-ever fully solar-powered desalination system (Solar Water Solutions) is among the first desalination systems in the world to operate on 100 percent renewable energy, with life-cycle costs more than 70 percent lower than those of conventional systems.[32]

The three priority PPP water projects recently announced signal the Namibian government's commitment to attract private participation. The Wastewater Direct Reclamation Plant (City of Windhoek),[33] Otjiwarongo Wastewater Treatment Works (Otjiwarongo Municipality),[34] and Desalination Water Supply Project (NamWater)[35] demonstrate the value of private sector involvement and the reduced fiscal burden on the government.[36] But there are other opportunities, especially related to the operations of NamWater, as local authorities struggle to meet the increasing demand while contending with low water reservoir levels, aging infrastructure, and a paucity of the technical skills needed to maintain and upgrade infrastructure. One of the biggest challenges faced by NamWater is the misalignment between where people live and where water is found, which entails costly investments for laying long-distance pipelines as well as the high cost of electricity to supply water to remote areas. Frequent breakdowns disrupt supplies and increase final costs for consumers; they also limit NamWater's ability to invest in upgrading infrastructure, given that NamWater operates on a cost-recovery basis and on a fixed tariff schedule approved by the Namibian government. The current institutional arrangements are therefore inadequate for the much-needed investments in water conservation and storage, control of nonrevenue water, groundwater preservation, and development of new water resources. A cost-reflective pricing strategy is also required to incentivize water conservation and reallocation to more productive sectors while maintaining cost competitiveness.

Local authorities are concerned that private sector involvement in the water sector could result in tariff increases and further marginalize the poorest households. As funding for water sector initiatives is relatively low, attaining water security at all levels requires government to allocate substantial investments through the budget, but also to mobilize loans, grants, and equity from domestic and international public and private financing institutions. This effort includes financial structuring, such as through PPPs, and the use of innovative instruments such as guarantees, blended financing, and bonds. These investments are crucial for developing, implementing, and maintaining the hard and soft infrastructure and institutional components of the water systems. An active public sector and a

TABLE 2.1 Water sources in Namibia

	Water available with installed capacity (Mm^3/year)	Potential water available, total source (Mm^3/year)
Primary sources		
Perennial rivers	100	200
Ephemeral rivers and dams in ephemeral rivers	170	1,105
Ground water	95	360
Secondary sources		
Reclaimed water (potable use only)	7.5	10
Total	**422.5**	**1,515**

Source: UNSD 2019.
Note: Mm^3 = cubic megameter.

diverse set of financing instruments—particularly grants and budgetary allocations—may be more important than private investment for poor, underserved areas, given that these areas have limited commercial viability. In areas with high levels of economic activity, such as urban areas and dominant mining and tourism areas, there are higher returns on investment and hence larger scope for private participation.

The significant and growing need for financing and private investment requires a comprehensive approach that includes decentralization, equitable tariff policy, and technical innovation. The private sector is well placed to help develop approaches for innovative water solutions such as desalination. To progress on these fronts will require addressing the existing concern that private participation will further increase the cost of water, a social good, and adversely affect access to water, especially for the poorer segments of the population.

TABLE 2.2 Cross-cutting policy recommendations

Priority reforms	Short term (<2 years)	Medium to long term (>2 years)
A. ENHANCING SOE PERFORMANCE AND ESTABLISHING A MORE EFFECTIVE COMPETITION POLICY ENVIRONMENT		
1. Level the playing field between SOEs and the private sector	Incorporate lessons from global experience in the legislative review of the establishing acts of SOEs and the preparation of the transformation plan. As part of the above, review the wide range of preferential treatment of SOEs and establish the economic and/or financial impact of these preferences. Fast-track the proposed Competition Bill, which enhances the capabilities of the Namibian Competition Commission to promote fair competition in all markets and strengthens the commission's capacity.	Implement reforms to safeguard competitive neutrality and clearly demarcate commercial, noncommercial, advisory, and regulatory mandates. These should also include reforms for fair access to essential network industries/ infrastructure. The Namibian government should divest from industries where there are adequate players and break up vertical monopolies to enhance competition and efficiency.
2. Improve service delivery across the public enterprise portfolio, in particular network companies	Incentivize SOEs to undertake regular customer satisfaction surveys, make the results public, and implement service improvement action plans.	
B. STRENGTHENING IMPLEMENTATION OF THE PPP FRAMEWORK TO EXPAND PRIVATE INVESTMENT		
3. Strengthen capacity of the PPP Unit for preparation and delivery of first-mover, priority transactions	Leverage global experience and expertise in strengthening the technical capacity of the PPP Unit to fast-track successful completion of the first-mover, priority PPP transactions. Expedite the Project Preparation Fund to support priority project preparation and execution. Develop operational guidance on fiscal commitments, contingent liabilities, and unsolicited proposals.	Continue to expand the capacity of the PPP Unit and roll out implementation of the PPP pipeline projects.
4. Improve interagency coordination and support for PPP agenda	Establish a coordination mechanism under a PPP champion ministry that will provide high-level oversight and support for the PPP agenda and strengthen interagency coordination and collaboration, especially between the PPP Unit, the Namibia Investment Promotion and Development Board, and the Environmental Investment Fund.	

(*Table continues next page*)

TABLE 2.2 (*continued*)

Priority reforms	Short term (<2 years)	Medium to long term (>2 years)
C. LEVERAGING THE POTENTIAL FOR DIGITAL TRANSFORMATION		
5. Increase market contestability and private investment to improve quality and affordability of broadband services	Develop an implementation plan for partial or full privatization of state-owned telecom enterprises. Allocate new ISP licenses to accelerate the deployment of high-speed broadband services for residential and business customers.	Accelerate international connectivity through ongoing engagements with the private sector. Roll out a national broadband strategy to attract private investments, especially for last-mile connections and for underserved rural areas.
6. Intensify development of digital literacy and skills	Expand private participation to accelerate roll out of internet access to schools. Incentivize private provision of digital skills, especially for women and youth.	Continue to invest in digital skills, especially in energy, water, digital financial services, delivery of government-to-person and government-to-business services, and climate-smart agriculture.
D. ADDRESSING INEFFICIENCIES IN LOGISTICS AND TRADE FACILITATION		
7. Accelerate implementation and scaling of digital systems along corridors	Digitalize processes to enable real-time monitoring of the logistics corridors; reduce health risks through implementation of the Corridor Trip Monitoring System and associated investments in digital infrastructure and services.	Support implementation of an online trucking platform to connect supply and demand and improve management of empty backhaul capacity. Implement the single-window system. Improve the quality of information and communication technology infrastructure. Establish a trade portal and adopt a virtual queue management system at the land border posts.
8. Improve regulatory framework for domestic and international logistics services	Review the entry barriers to road transportation markets, including an assessment of the effects of cabotage policy and the third-country rule.	Support implementation of the Vehicle Mass Bill that will harmonize rules and regulations affecting road transportation in the region.
9. Improve border crossing efficiency along corridors	Enhance staff capacity and competencies of key government agencies at the borders, including customs and immigration, port health, and sanitary and phytosanitary officials and improve infrastructure.	Upgrade border infrastructure with sufficient space for employees, trucks, and basic facilities (for example, housing for staff) to ensure that the borders operate 24 hours a day.
E. TAPPING OPPORTUNITIES IN THE WATER SECTOR FOR GREEN GROWTH		
10. Strengthen capacity of the PPP Unit for water sector projects	Consider establishing a water and sanitation subunit within the PPP Unit with dedicated expertise for water and sanitation PPP projects. Establish a mechanism for stakeholder participation and engagement in the development of successful PPP transactions.	Clarify roles of and strengthen the regulatory arrangements between the PPP Unit and the water sector regulator to safeguard consumers, especially in relation to tariffs.
11. Clarify institutional arrangements for water and sanitation infrastructure investments	Establish a clear division of mandates, roles, and responsibilities for a prioritized approach to water and sanitation investments across the various public sector entities.	

Note: SOE = state-owned enterprise; PPP = public-private partnership; ISP = internet service provider.

Notes

1. The Ministry of Public Enterprises categorizes entities as a commercial public enterprise, noncommercial public enterprise, or extra-budgetary fund. When an entity (1) provides a product or renders a service, (2) can make a sustained profit, and (3) does not perform a regulatory function or administers a fund in the public interest, such an entity is deemed a commercial public enterprise.
2. The 22 commercial SOEs are Air Namibia, Epangelo Mining Company, Henties Bay Waterfront (propriety) Limited, Luderitz Waterfront Company (propriety) Limited, Meat Corporation of Namibia, Mobile and Telecommunications Limited, Namib Desert Diamonds (propriety) Limited, Namibia Airports Company, Namibia Development Corporation, Namibia Institute of Pathology, Namibia Post, Namibia Power Corporation, Namibia Wildlife Resorts Company, Namibia Ports Authority, National Fishing Corporation of Namibia (under the Seaflower Group of Companies), National Petroleum Corporation of Namibia (propriety) Limited, Offshore Development Company, Road Authority, Roads Contractor Company, Telecom Namibia, TransNamib Holdings, and Zambezi Waterfront (propriety) Limited. For a list of Namibia's commercial public enterprises, see the Ministry of Public Enterprises' website at https://mpe.gov.na/public-enterprises-commercial.
3. Developed by the OECD, these indicators measure the extent to which policy settings promote or inhibit competition in areas of the product market where competition is viable.
4. Although there could be reasons for an infant industry protection such as creating policy space for existing local economic value chains to get off the ground and build the requisite competitive capacity, its implementation should be time bound and effectively monitored by the competition authorities to avoid protecting inefficient firms, which adversely affects competitiveness of the economy.
5. Competition Policy Assessment, 2015.
6. Namibia, Ministry of Finance. 2021. "Medium-Term Expenditure Framework, 2021/22–2023/24." Windhoek. https://mof.gov.na/documents/35641/36559/MEDIUM+-TERM+EXPENDITURE+FRAMEWORK+2021_22.pdf/78309c95-c263-5310-1b50-29b8e1dd007e.
7. Until Air Namibia commenced liquidation, it was serviced by various commercial banks despite multiyear noncompliance with the Companies Act.
8. Based on data from the Development Bank of Namibia's annual reports for various years available at https://www.dbn.com.na/publication-home/annual-reports.
9. Based on the Ministry of Public Enterprises' Commercial Public Enterprise database.
10. Air Namibia continued to bank with commercial banks, which are not as strict with commercial public enterprises as they are with "normal" commercial companies.
11. Based on consultation interviews for this CPSD in Windhoek.
12. Based on interviews for this CPSD with several stakeholders in Windhoek.
13. World Bank (2021a, 2021b).
14. Heita (2022).
15. World Development Indicator database.
16. Gervasius (2020).
17. A recent World Bank study estimates that in Nigeria, having at least one year of 3G or 4G coverage increases total consumption by 5.8 percent, food consumption by 6.2 percent, and nonfood consumption by 6.3 percent. Bahia and others (2020).
18. NSA (2017).
19. Ibid.
20. IFC (2017).
21. Based on data from CRAN (2019) and from TeleGeography's GlobalComms Database Service.
22. The four main trade corridors are the Trans-Oranje, Trans-Cunene, Trans-Kalahari, and Walvis Bay Ndola-Lubumbashi Development, which connects the Democratic Republic of Congo, Namibia, and Zambia, with links to Malawi, Tanzania, and Zimbabwe.
23. WBCG (2019).
24. Blank sailings have been observed since December 2020.
25. Exporters negotiate additional free days (more than the usual five days) with shipping lines to release empty reefer containers in advance. The reefer containers are parked on a producers' own land, stuffed with the product intended for export until the actual export date. Reefer containers are stored on exporters' own land.
26. Based on stakeholder interviews for this CPSD.
27. Cabotage is defined as the transportation of goods (and/or passengers) between two places within the same country by a transport operator from another country. The Southern African Development Community (SADC) Infrastructure Directorate has been discussing gradually eliminating the third country rule, as recommended in the SADC Protocol on Transport, Communications and Meteorology, Article 5.3.

28. The first customs-to-customs communication was established with South Africa in March 2021.
29. Namibia, Ministry of Agriculture, Water and Forestry. 2010. "Integrated Water Resources Management Plan for Namibia." IWRM Plan Joint Venture Namibia, Windhoek. https://sdacnamibia.org/sites/default/files/8.%20Integrated%20Water%20Resources%20Management%20Plan%202010.pdf.
30. Based on data from World Bank Open Data database, https://data.worldbank.org/.
31. UNSD (2019).
32. For more information on how Namibia is using solar energy to make clean water from the Atlantic Ocean, see Solar Water Solutions' website at https://solarwatersolutions.fi/en/article/in-drought-faced-namibia-clean-water-is-now-made-from-the-atlantic-ocean-using-solar-energy/.
33. The city will provide a land parcel next to the Gammams Wastewater Treatment Plant for the proposed Direct Potable Reclamation Plant as well as supply the agreed quality and quantity of semipotable effluents from Gammams Wastewater Treatment Plant to the private developer. The city and the private developer will enter a take-or-pay water purchase agreement, which will stipulate the quality, quantity, and price of reclaimed water to be offtaken.
34. The municipality will provide the project site and secondary treated sewerage of agreed quality and quantity to the private developer. The private developer will enter a take-or-pay water purchase agreement with the municipality to buy the treated water. The project will help bridge the water demand-supply gap by meeting industrial water demand through treated water and supplying the water conserved to domestic users.
35. NamWater intends to develop a desalination plant using a design-build-finance-operate-transfer approach, which involves designing and building the infrastructure, operating it for a specific time period, and then transferring the ownership of the project to the government.
36. There is already a successful model of FDI in wastewater treatment—the Goreangab Plant in Windhoek in 2002.

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3 SECTOR ASSESSMENTS

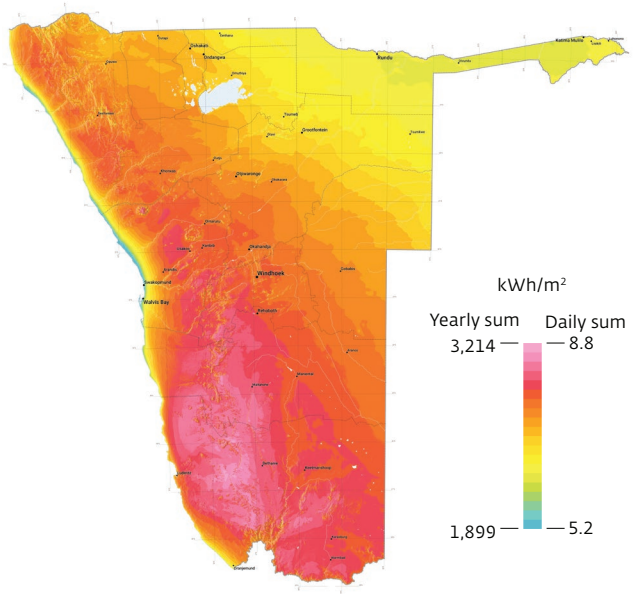
3.1 Renewable energy

Namibia has world-class renewable energy resources, which remain largely untapped. The country has one of the highest solar irradiation levels in the world, at nearly 3,000 kilowatt hour per square meter (kWh/m²) over a large part of the country (map 3.1). Namibia also has excellent wind resources, mostly in coastal areas, which are available when electricity demand is highest; mean wind speeds at typical turbine heights can exceed 10 meters per second (map 3.2). If exploited well in the medium to long term, these excellent fundamentals coupled with recent decreases in global prices of solar photovoltaic (PV) panels and wind can enable Namibia to transition into a regional supplier of electricity using primarily renewable energy generation resources, and also to move to a zero-emissions electricity supply.1 This would allow Namibia not only to service its own rising electricity demand fully from renewable energy, but also to become a leading regional exporter to the Southern African Power Pool (SAPP), of which Namibia is a member. Namibia's resources also create the opportunity to position the country as a global competitor for green hydrogen.

Domestic electricity generation is insufficient to cover demand, and this situation endangers energy security and energy access for all Namibians. Domestic generation is mainly reliant on the Ruacana hydroelectric power plant, which in recent years has

MAP 3.1 Solar irradiation

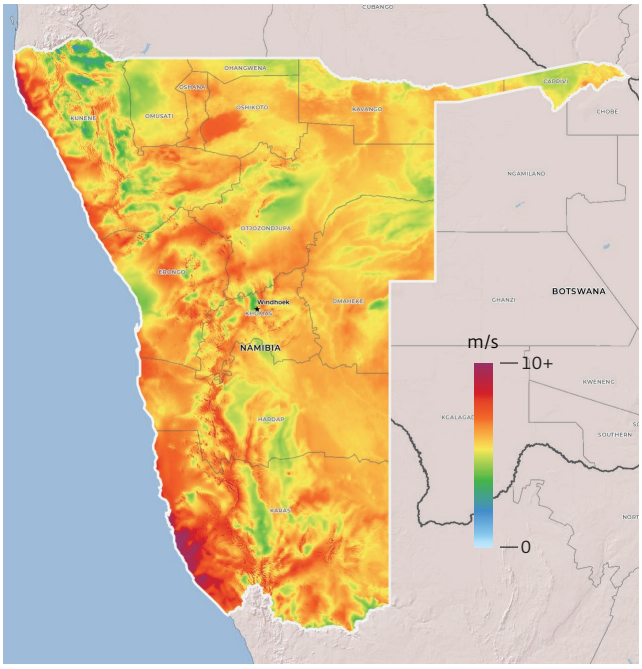
Long-term average of daily/yearly sum, 1994–2018



Source: Global Solar Atlas.

MAP 3.2 Wind speeds

At 100 meters, 2021



Source: Global Wind Atlas.

frequently operated below capacity due to droughts. Peak demand surpassed installed capacity in 2006, and the gap has been widening since then, despite a small decrease in demand in 2020 due to the COVID-19 pandemic.[2] In 2020, 60 percent of all electricity supplied (2,785 out of 4,702 gigawatt hours) was imported (table 3.1). The country imports as much as 90 percent during periods of peak demand. Most imports rely on coal-based power from South Africa's Eskom, in addition to imports from Zambia, Zimbabwe, and the market of the SAPP. This dependence on imports leads to high foreign exchange demand and could result in supply disruptions if bilateral contracts expiring in the next years are not renewed, or if importers renege on their contracts due to their own supply issues.

Only 55 percent of Namibians have access to electricity, and just 35 percent of the rural population.[3] Access is especially low in the northern regions. The majority of Namibia's rural population continues to rely on traditional biomass for cooking and space heating. Most of the electricity access is provided through grid connections, though the expansion of residential, commercial, and industrial rooftop PV systems has been rapid in recent years.[4] Namibia's vast size and low population density pose significant challenges to electrification and contribute to the lack of access to electricity in areas far from the grid. The cost of achieving universal electricity access is estimated at N$8.4 billion through both on-grid and off-grid connections (432,000 households).[5] Therefore, scaling up both on- and off-grid domestic electricity generation while harnessing Namibia's renewable energy potential will be crucial to reaching Namibia's goals for 2030 of universal electrification[6] and a 70 percent share of renewable energy in the power generation mix.[7] In addition, this step could create jobs, reduce poverty, and serve as an engine of growth to support the country's path toward high-income status.

The utility company Namibia Power Corporation Ltd. (NamPower) continues to dominate the energy sector, despite some unbundling. The electricity sector has a well-developed regulatory framework overseen by the Electricity Control Board (ECB) as the regulator. NamPower is a commercial public entity responsible for most generation and all transmission, import, export, and trading of power supply. It is the only utility in Sub-Saharan Africa with an investment-grade credit rating and is generally regarded as well managed.[8] Electricity distribution is the main responsibility of regional electricity distributors (REDs) in their respective service areas; the current licensees are Northern Regional Electricity

TABLE 3.1 Namibia's electricity supply, 2020

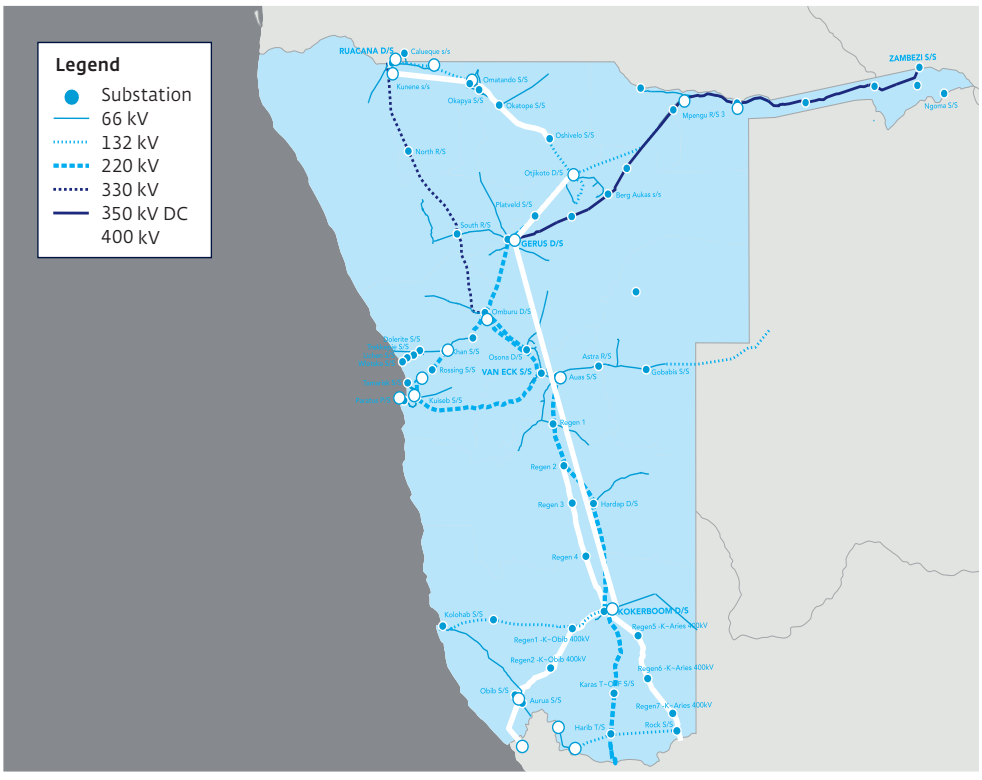
	Units (GWh)
Total units into system	**4,702**
NamPower	1,570
Zambia Electricity Supply Corporation Limited (Zambia)	490
Eskom (South Africa)	1,624
Zimbabwe Power Company (Zimbabwe)	362
SAPP market	309
REFIT projects (IPP)	160
Omburu Sun Energy (IPP)	13
Greenam (IPP)	60
Alten Solar Power (IPP)	114
Power exports	593

Source: NamPower 2021.
Note: GWh = gigawatt hours; IPP = independent power producer; REFIT = renewable energy feed-in tariff; SAPP = Southern African Power Pool.

Distributor, Central North Regional Electricity Distributor, and Erongo RED. NamPower is currently the distributor for most of the central and southern areas of Namibia, though REDs are being planned for these regions. In addition, there are several municipal area distributors responsible for distribution and supply to their end-consumers, the largest being the city of Windhoek.

Through a cautious move toward more private participation in the generation segment, Namibia has successfully launched independent power projects, though most of them are small in scale.[9] Motivated in part by NamPower's struggle to increase generation capacity, in 2015, the Namibian government initiated the Renewable Energy Feed-In Tariff (REFIT) program with the goal of reducing electricity imports and attracting private investment. Fourteen REFIT projects of 5 MW each (13 solar PV, 1 wind, totaling 70 MW) have reached financial close and are operational in 2021,10 providing electricity as independent power producers (IPP) through power purchase agreements with NamPower. However, interest from the private sector was much higher than the 70 MW cap. Several more renewable energy IPPs are currently operational and supply NamPower outside the REFIT program (see table 3.1); these are in addition to renewable energy IPPs directly supplying REDs and embedded generation in large mining and industrial customers. The 37 MW Alten Solar Power Hardap PV IPP plant supplying NamPower is the region's cheapest local currency–based utility-scale PV project and receives no sovereign support.[11] Despite this progress in opening up the sector, the generation capacity supplied by private actors is dwarfed by the capacity owned and operated by NamPower, whose generation capacity consists of the Ruacana 347 MW hydropower plant, the Van Eck 90 MW coal-fired power station, the Anixas 22.5 MW diesel-powered power plant and, as standby, the Paratus 24 MW heavy fuel oil station (map 3.3).

MAP 3.3 NamPower generation, transmission, and distribution infrastructure

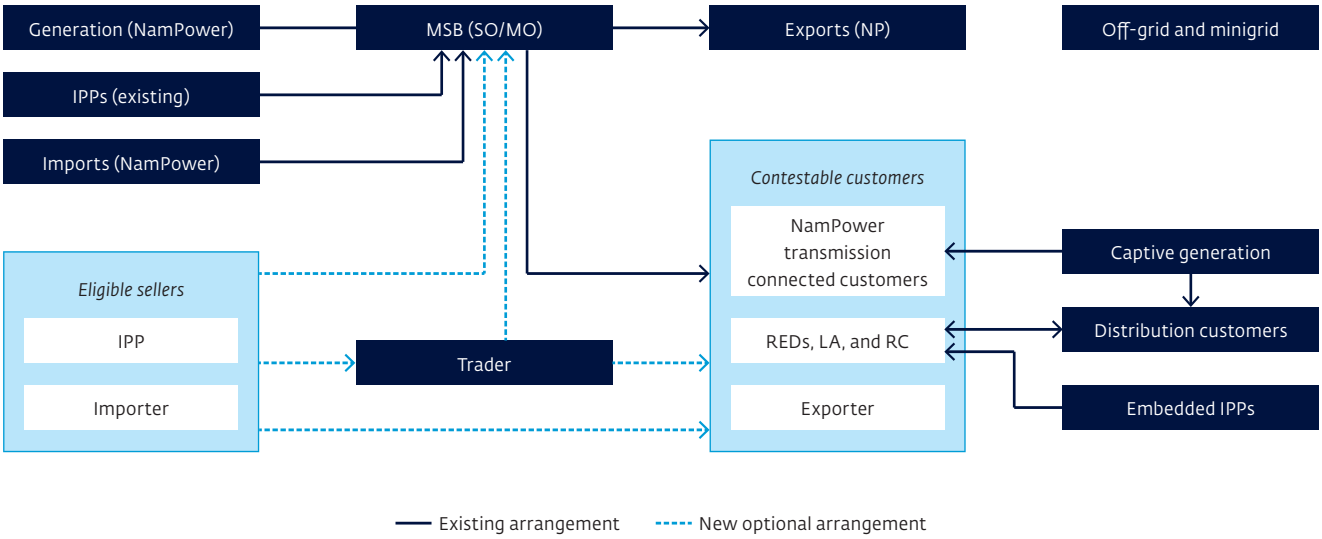


Source: NamPower 2019.

Buoyed by the success of the REFIT program, the Namibian government in 2019 adopted a new market structure, the Modified Single Buyer (MSB) model, to encourage more private participation. This model allows contestable customers and eligible sellers to transact with each other directly for the supply of electricity, with an initial limit set at 30 percent of the customer's energy requirements (figure 3.1 provides an overview of the new market structure). It also allows private generators to build generation capacity in Namibia solely for export purposes. This new model is a significant step toward greater private participation, competition, and choice in Namibia's electricity sector. The MSB framework complements the other policy and regulatory frameworks governing the electricity supply industry, most importantly the Electricity Act of 2007, which established the ECB as regulator, and the National Integrated Resource Plan of 2016, a 20-year development plan for the electricity sector.[12] Both frameworks are currently being amended to take into account the recent changes in the sector related to the MSB model.

The MSB model and the Public Private Partnership Act are still untested, and Namibia needs to successfully operationalize them to reap the benefits of its world-class renewable energy resources. How to do so in the short to medium term is the focus of this deep dive. Namibia must operationalize the MSB model and the Public-Private Partnership (PPP) Act to move toward a zero-emissions electricity supply for domestic demand, regional exports, and the production of green hydrogen in the medium to long term. This vision is the focus of the World Bank's ongoing support to the Namibian government for developing the Renewable Energy Roadmap. The main opportunities for private participation in the renewable energy sector in Namibia are in the generation segment; they are discussed below according to the type of customers targeted. Namibia has very costly electricity, partly due to costly imports and mandated cost-recovery pricing that ensures the financial sustainability of the sector. Tariffs stood at N$1.6982 per KWh (about US$0.11 per kWh) for bulk customers in 2021/22.[13] However, at US$0.054 per kWh, Namibia's generation costs are the second lowest within the SAPP thanks to its renewable resources.[14] This spread represents opportunities for private electricity generators to profitably serve the country's demand and export to the region.

FIGURE 3.1 Trading arrangements in final Phase 2 of the Modified Single Buyer model



Source: Namibia, Ministry of Mines and Energy. 2019. "Electricity Supply Industry: Detailed Market Design." Electricity Control Board, Windhoek. https://www.ecb.org.na/images/docs/Rules_and_Regulations/MSB/MSB_Detailed_Design_Report.pdf.
Note: IPP = independent power producer; LA = local authority; MO = market operator; MSB = Modified Single Buyer; NP = NamPower; RC = regional council; RED = regional electricity distributor; SO = system operator; Tx = transmission.

The MSB model has significantly opened the energy market to private producers. Under this model, eligible private power producers (called eligible sellers) can for the first time directly supply electricity to other eligible actors in either the private or the public sector (called contestable customers). This is a significant departure from the previous Single Buyer model, in which NamPower was the only offtaker of electricity.[15] According to the MSB model design note, the new framework hopes to address "the perceived conflict with NamPower as both a Generator and the only off-taker from IPPs; the slow pace of implementation and decision making; lack of competition and choice and the limited progress in reducing reliance on imports."[16] In a phased approach, the MSB model will gradually allow more sellers and customers to participate (table 3.2). In phase 1a, the initial phase, NamPower transmission–connected customers can purchase up to 30 percent of annual total volumes from licensed IPPs, who can develop plants specifically for export purposes. In phase 1b, distribution-connected customers can participate as contestable customers, and electricity traders can enter as intermediaries. It is expected that the 30 percent cap on contestable purchases will be increased as determined by the ECB, and importers may enter as early as 2026 to foster self-sufficiency. As the MSB, NamPower will continue to build, own, and operate power generation plants, the transmission system, and parts of the distribution system. It also will manage the market and systems operations of the MSB market. Tariffs were unbundled in 2019, and under the new system NamPower can charge customers only for the services that they use—for example, reliability and balancing services—even when procuring energy from IPPs bilaterally. Importantly, NamPower is the designated supplier of last resort for all customers under the new model, including if eligible sellers fall short of their commitments. The MSB market opened in September 2019 and, in early 2021, the ECB was taking applications from contestable customers and IPPs (pending, new, and renewed) and was ready to accept trades under the new rules.[17] According to an implementation update from the ECB in June 2021, phase 1b came into effect on July 1, 2021.[18] Fifteen contestable customers and five eligible sellers were registered as of end of May 2021, with more applications under review.

TABLE 3.2 Summary of Modified Single Buyer model phases

Contestable customers	Contestable purchases	Eligible sellers	Indicative dates
Phase 1a			
NamPower transmission–connected customers Distribution customers (1 MVA and above) subject to regulatory approval	30% of total	Licensed IPPs, exporters, traders—subject to regulatory approval	September 2019–June 2021
Phase 1b			
NamPower transmission–connected customers Distribution customers (1 MVA and above) Distribution customers (below 1 MVA) as determined by ECB	30% of total Increasing cap >30% as determined by ECB	Licensed IPPs, exporters, traders	July 2021–June 2026
Phase 2			
NamPower transmission–connected customers Distribution customers (1 MVA and above) Further customers as determined by ECB	As determined by ECB	Licensed IPPs, exporters, traders Importers (once 80% self-sufficiency reached)	July 2026–ongoing

Source: Namibia, Ministry of Mines and Energy. 2019. "Electricity Supply Industry: Detailed Market Design," Electricity Control Board, Windhoek. https://www.ecb.org.na/images/docs/Rules_and_Regulations/MSB/MSB_Detailed_Design_Report.pdf.
Note: ECB = Electricity Control Board; IPP = independent power producer; MVA = megavolt ampere.

Although the MSB model is a significant step toward achieving Namibia's renewable energy goals, it presents several challenges according to stakeholders from the private, public, and financial sectors:[19]

— First, the new market structure is not yet well known and there is some uncertainty regarding its implementation. For example, it is unclear whether there is a requirement for participation of previously disadvantaged Namibians (PDNs), which was 30 percent in the REFIT program; with this lack of clarity, there is a risk that those who are not PDNs nor Namibians could dominate the IPPs.

— Second, there is some concern that NamPower will exploit its role in the new market structure to protect its business model from the new competition. IPPs will have to pay NamPower for grid connections, wheeling charges, and balancing and other services. Potentially high or unpredictable charges can have a negative impact on the success of the MSB model. This holds true especially since the MSB function is currently located in a ringfenced office within NamPower. Limiting contestable purchases to 30 percent in the initial phase may exacerbate the duck curve effect,20 with more and more solar being developed to supply contestable customers during the day when it is cheap. This risks the underdevelopment of other renewable energy technologies and may make NamPower's role as supplier of last resort more difficult during hours of peak demand, when solar is less available. While the cap is understood to consider NamPower's contractual commitments to energy imports in the next years, the medium- and long-term effects of this cap need to be considered.

— Third, bankability may become an issue since private offtakers may have a different risk profile and shorter life span than NamPower, which has been the primary offtaker for IPPs so far. Standardized bilateral contracts, guarantees, or aggregation may alleviate some of these risks. The MSB model currently envisages aggregation and energy trading only in later phases, while several aggregators are already active in the South African market, such as Energy Exchange of Southern Africa (Pty) Ltd. and POWERX.

The opportunities to sell to public sector actors range from renewable energy PPPs, with large risk transfer, to contractual arrangements with less or no risk sharing, such as engineering, procurement, and construction contracts. As explained in chapter 2, no PPP has yet been implemented under Namibia's new PPP Act. Given the renewable energy sector's high potential and given the appetite for investment in the sector among power producers and funders alike, renewable energy can be at the forefront of making the new PPP framework operational. Two renewable energy PPP projects have recently been prioritized for development.[21] The first, and most advanced, is a 25 MW solar PV project in partnership with the City of Windhoek with a site on the outskirts of Windhoek. As of June 2021, it was expected that the request for quotation would to be advertised soon. This PPP will function under a build-own-operate 25-year contract with a project size of N$475 million; the project company must be at least 45 percent Namibian-owned. The second is a concentrated solar power project with potential hybridization with PV or wind energy, for which NamPower will be the partner. The project was still in the prefeasibility stage in June 2021, but it is expected to be located in Arandis or Karibib, with a size of 50–135 MW and storage capacity for 6–12 hours. It will operate under a build-own-operate-transfer contract with a project size of N$8–14 billion and a concession period of at least 25 years. These first-mover renewable energy PPP projects represent significant learning opportunities for Namibia's new PPP framework. If these projects can successfully be brought to financial close and operation within a reasonable time frame, then the framework is demonstrated as workable and ready to be scaled up based on the lessons learned.

The Namibian government has adopted the production of green hydrogen as a strategic bet and has ambitions to become its leading exporter in Africa, following the World Bank's preliminary analysis for the Renewable Energy Roadmap.[22] In the first half of 2021, green hydrogen was endorsed by the Harambee Prosperity Plan II, and several committees were set up to support its development (the Green Hydrogen Council, the Green Hydrogen Technical Committee, and the Namibia Green Hydrogen Association). The government plans to develop six green hydrogen sites across the country, the first of which is the Southern Corridor Development Initiative (SCDI), an area of 14,000 km² with potential generation assets of 5 GW and potential FDI volumes of US$6 billion. In addition to a green hydrogen and ammonia plant with wind, solar, electrolysis, and desalination assets, the SCDI is also intended to include a new deep-water port in Luderitz, a wind blade plant, a green steel plant, a fertilizer plant, and transmission assets. The Namibian government intends to issue and award concessions to develop comprehensive feasibility studies for the SCDI by the end of 2021.

In addition to these PPP projects, NamPower is planning several utility-scale renewable energy projects that will be developed as engineering, procurement, and construction contracts owned and operated by the utility. These include the 20 MW Omburu PV project, the 40 MW Luderitz wind power project, and the 40 MW Otjikoto biomass power project.[23] To support the decentralized development and uptake of renewable energy plants as part of the MSB model, NamPower is also preparing the first utility-scale Battery Energy Storage System (BESS) project at Omburu Substation. KfW has confirmed that a grant of €20 million is available for this project. The planned commercial operation date is 2023, and the first feasibility study indicated a storage capacity of 75 MWh. Under an International Bank for Reconstruction and Development (IBRD) Global Public Good operation, the World Bank is supporting the integration of rooftop solar in the Windhoek area as part of the proposed 60 MW Auas BESS; this project will potentially reduce the tariff to the customer and optimize the utilization of the Van Eck coal-fired power station. Under the same project, the World Bank is also preparing the proposed 92 km, 400 kV Obib-Oranjemund transmission line to contribute to grid stability, build redundancy for the existing transmission line with South Africa, and enable future export of renewable energy generation into SAPP.

These plans for large-scale renewable energy development in Namibia represent significant opportunities for the private sector. However, several challenges need to be addressed to unlock this potential. Significant efforts are needed to take the renewable energy PPPs to financial close and make them operational. PDNs have reported difficulty in accessing finance, and in the REFIT program many lead developers financed the PDN shareholders' equity through a shareholder loan. Better financing structures would allow PDNs to make decisions as equal partners and ensure that the local economy benefits from Namibia's vast renewable energy resources. The procurement process for public enterprises such as NamPower is challenging, and the turnaround times of the Central Procurement Board of Namibia are long. Although codified procurement guidelines have been provided to public entities, the Procurement Policy Unit has not yet issued standard bid documents for all sectors, and those it did issue are incomplete and not aligned to sector-specific requirements. In light of these issues, NamPower was granted an exemption to conduct its own procurement for the period of 2021–2023.[24] In the short to medium term, the local content for renewable energy projects is limited due to shortages in certain high-skill workers (for example, information and communication technology professionals, architects, engineering professionals) and in local manufacturing capacity (for example, for PV panels, spare parts).[25]

The private sector can be instrumental for a renewed focus on off-grid renewable energy solutions for rural areas, which are needed to ensure universal electrification by 2030 and to foster inclusive socioeconomic development. Because of low population density and long distances, about 100,000 Namibians are in off-grid areas or pregrid areas, or in informal settlements in the 2007 Off-Grid Energisation Master Plan (OGEMP).[26] Most of them are unlikely to be reached by the plans to expand grid-connected generation capacity that have been discussed so far. The OGEMP takes a primarily public sector approach to off-grid electrification by aiming to electrify public institutions in remote areas, establishing the Solar Revolving Fund as a government credit facility for individuals financing small renewable energy systems, and setting up energy shops with renewable energy supplies and expertise close to the targeted communities. Between 2011 and 2017, more than 3,500 small renewable energy systems were financed through the Solar Revolving Fund, primarily solar home systems.[27]

The current framework for off-grid rural electrification faces several challenges that hinder increased private participation.[28] The OGEMP does not provide for mini-grid solutions, which could significantly scale up electricity access in remote areas. There is no clear framework for off-grid (and especially mini-grid) electrification that encourages private participation. Such a framework should include a policy for main-grid arrival (for example, compensation, net metering), tariff methodologies, and technical standards and regulations (for example, on licensing). A well-developed framework can be found in Nigeria, which could serve as an example.[29] Nigeria's mini-grid framework provides private developers with a tailored policy and regulatory environment that addresses common investment risks associated with licensing, tariff setting, risk of main-grid arrival, and financial support. It was developed after extensive stakeholder engagement and is embedded in Nigeria's Rural Electrification Strategy and Implementation Plan, which provides for both on- and off-grid solutions to electrification. The rural population in Namibia continues to have limited information and knowledge about off-grid renewable energy solutions, including their costs and advantages, which is an obstacle for rural electrification. Adoption of off-grid systems continues to be hindered by a lack of skills and experience among local suppliers, as well as systems' high costs. Due to the vastness of the land and limited domestic capacity for manufacturing of parts, effective strategies for maintenance and repair need to be an integral part of an off-grid framework.

TABLE 3.3 Recommendations: Renewable Energy

	Responsible agency
Short-term actions	
Strengthen implementation of the MSB model by increasing private actors' understanding and participation, specifically by (1) organizing an investment conference on the MSB model and establishing a public-private structure to support the envisaged large-scale development of renewable energy, including green hydrogen; (2) increasing the 30 percent cap on contestable purchases; (3) reviewing charges and fees payable to NamPower under the MSB model; and (4) developing standardized bilateral contracts that fulfill all regulations and build on lessons from the REFIT program and other IPP transactions.	ECB, MME, NamPower Renewable energy associations, banks
Accelerate regulatory reforms proposed in the National Integrated Resource Plan and the Electricity Act.	MME
Enhance capacity to deliver successful renewable energy transactions by ensuring that (1) transaction advisers are available in the PPP Unit for the prioritized renewable energy PPP projects and are supported by substantial technical assistance; (2) adequate resources from the Project Preparation Fund are earmarked for renewable energy projects; (3) adequate support and information on PPP processes are provided to interested private parties; (4) standardized bidding and procurement documents are developed; and (5) procurement capacity for Central Procurement Board of Namibia staff is strengthened.	PPP Unit, development partners, NIPDB
Support private participation in off-grid electrification. Adopt a clear policy framework—especially for minigrids—that includes main-grid arrival, tariff methodologies, maintenance and repair, and technical standards and regulation.	MME, ECB
Introduce derisking and innovative financing instruments, such as structured bridge financing for renewable energy projects through blended finance, including government guarantees, tax incentives, grants, concessional loans, and own-account financing. Provide support for PDN shareholders on renewable energy projects.	MME, DBN, GIPF
Medium- to long-term actions	
Increase the availability of specialized technical skills for the renewable energy sector. Support skills transfer/retraining from the mining and conventional energy sectors.	MME, MOE
Target investments to develop a renewable energy value chain. Provide support and incentives for regional and international renewable energy equipment and parts manufacturers to open subsidiaries in Namibia.	NIPDB
Explore opportunities for restructuring NamPower. This can be done by separating generation and network operation through different open access models or by unbundling the generation and transmission functions.	ECB, MME

Note: DBN = Development Bank of Namibia; ECB = Electricity Control Board; GIPF = Government Institutions Pension Fund; IPP = independent power producer; MME = Ministry of Mines and Energy; MOE = Ministry of Education; MSB = modified single buyer; NIPD = Namibia Investment and Promotion and Development Board; PDN = previously disadvantaged Namibians; REFIT = renewable energy feed-in tariff.

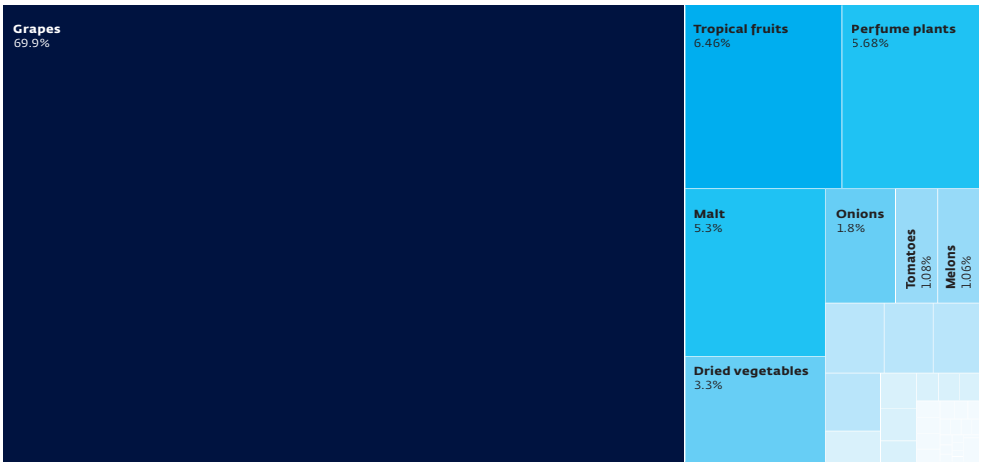
3.2 Climate-smart agribusiness

Despite Namibia's very limited arable land and vulnerability to climate shocks, over 70 percent of the population depend on the agriculture sector for their livelihood, and 23 percent of the workforce are employed in agriculture. Namibia is classified as an arid country; only about 1 percent of the country's 82.4 million ha is under production, and only 43,500 ha (0.05 percent) is identified as irrigable.[30] Since 2008, agriculture's contribution to gross domestic product (GDP) has fluctuated substantially between 6.7 and 10.4 percent because of compounding climatic shocks ("Agriculture, forestry, and fishing, value added"). Historically, the agriculture sector has been dominated by livestock and cereal production. In the cereal subsector, Namibia harvests primarily maize and millet in small quantities. In 2021, production is expected to be slightly above average at 165,000 tons. But Namibia remains a net importer of cereals, with imports accounting for two-thirds of domestic consumption.

The livestock and horticulture sectors, which show increasing promise for climate-smart investments, are the focus of this deep-dive analysis. Livestock accounts for just over half of Namibia's agricultural production and 90 percent of its agricultural exports. But despite its substantial contribution to Namibia's export market, the livestock sector is among the least labor-intensive agricultural subsectors. The National Horticulture Development Initiative was launched in 2002, and the horticulture subsector accounted for 1.5 percent (or US$101 million) of exports in 2019. Grapes were the leading output, accounting for 69.8 percent of horticulture exports, followed by tropical plants (6.4 percent; figure 3.2).[31]

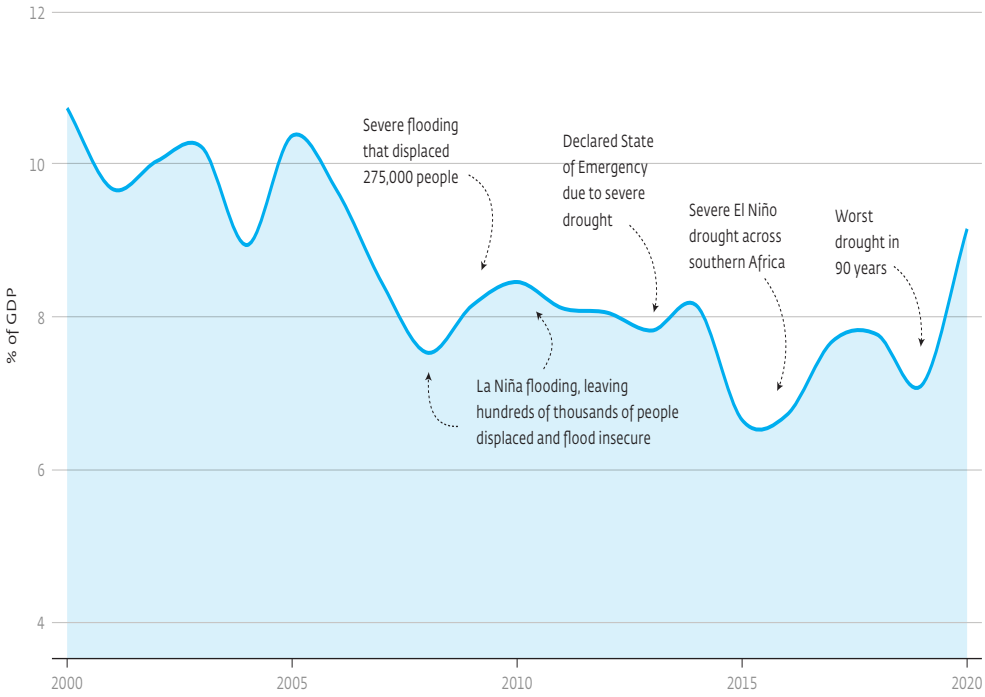
Climatic shocks remain the biggest threat to the agriculture sector. In the last decade, Namibia has experienced both El Niño and La Niña events that led to extreme droughts and floods. As figure 3.3 shows, agriculture's contribution to GDP has declined with each climatic shock since 2008. The 2019 drought—the worst in 90 years—saw an estimated 90,000 livestock deaths (by September 2019).[32] Given livestock's dominance in Namibia's export basket, the drought had an adverse effect on trade balances. The drought also had a catastrophic impact on food security. Between October 2019 and March 2020, an estimated 430,000 people experienced severe acute food insecurity. This was a result of the decline in food production: maize and millet decreased by 26 percent and 89 percent,

FIGURE 3.2 Composition of Namibia's horticulture export basket, 2019



Source: Observatory of Economic Complexity.

FIGURE 3.3 Agriculture, forestry, and fishing, value added



Source: World Bank staff.

respectively, between 2018 and 2019.[33] These climatic shocks have resulted in expansionary fiscal policies for drought relief.

Together, land degradation and climate change threaten food production, food security, natural resource conservation, and economic development. Land degradation encompasses the loss of the productive capacity of land due to a combination of human-induced factors, such as soil erosion, acidification, nutrient leaching, and compaction. In Namibia, land degradation is estimated to cost 19 percent of GDP. The annual cost of land degradation per capita is US$797.40—the highest in analysis done by the World Bank covering 19 Sub-Saharan African countries. As a comparison, the average cost for the 19 countries was US$107.40, and the second highest after Namibia was Botswana, with a cost of US$188.20 (see appendix C).[34]

There is a dualistic agricultural economy, composed of predominantly smallholder and subsistence farmers and medium- to large-scale commercial producers. In the northern and north-central regions, approximately 50 percent of farmers are smallholder and subsistence farmers who operate on land held under a communal tenure system. The farming systems for these types of farmers are often mixed systems that include small fields of crops, vegetables, and livestock largely for domestic consumption. Approximately 40 percent of households own or have access to cattle. This subsistence sector suffers from poor-quality yields and land degradation issues, overgrazing, water scarcity, and an overall lack of investment in upgrading production, which contributes to low incomes and poverty. The commercial sector is dominated by commercial cattle and small stock farming, in particular south of the veterinary cordon fence (VCF), which is free of foot-and-mouth disease (FMD). The commercial sector is export oriented, productive, and more competitive, with some links to smallholder producers in the south and limited links to those in the north.[35] Evidence from other countries helps identify opportunities to strengthen the links between large agribusiness and commercially oriented smallholder farmers (see appendix D).[36]

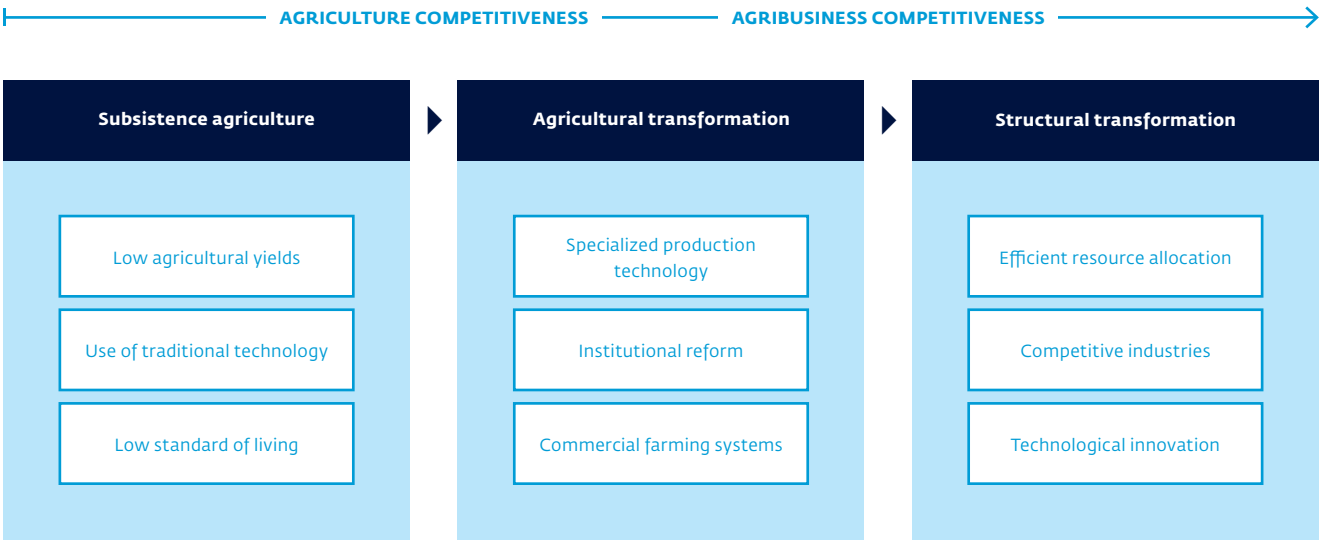
The growth of the commercially oriented smallholder agriculture sector is hampered by land tenure issues and a lack of knowledge and capacity. Inadequate land tenure arrangements and a lack of land rights for smallholder farmers in Namibia affect incentives, medium- to long-term investment choices, and soil management practices. Limited access to land places further pressure on land resource management in horticulture-suitable lands, particularly in the central-north part of Namibia where they are under communal land tenure regulations. Moreover, because the Communal Land Reform Act of 2002 stipulates that customary land rights are designed for subsistence producers, the commercial use of these areas entails a complex and long process to obtain a leasehold from the local authority. Additionally, the lack of knowledge and capacity affects output potential and productivity levels, soil fertility maintenance, conservation agriculture, and regenerative agricultural approaches.

Access to financing is another constraint that affects small- to medium-scale farmers. Several Namibian commercial banks have financial offerings for agribusiness, but these are largely for larger corporate entities. The state-owned Agribank has historically experienced lending underperformance and institutional weaknesses that require reforms.[37] The challenges of access to finance stem from lack of collateral (due to the historical legacy of exclusion and the lack of land titling on communal land). Other hindrances to lending include a mismatch between the financing needs of farmers and the financial products offered by banks, risk of low yields, and frequent climatic shocks and water shortages.

Various mechanisms exist that can improve agricultural productivity, including increased mechanization and commercialization and more efficient use of natural resources while repairing ecosystems.[38] As figure 3.4 shows, there are several pathways for agricultural transformation that could shift the composition and distribution of farm sizes to increase the share of medium farms (defined as 5–100 ha) or large farms.[39] Medium farms have helped drive rural transformation by attracting agricultural service providers that also benefit smaller farms and create off-farm employment.[40]

The livestock value chain can be globally competitive and offers opportunities for expansion. Between 2014 and 2018, the export of live animals increased by 111 percent,

FIGURE 3.4 Agriculture competitiveness and structural transformation framework



Source: Babu and Shishodia 2017.

while meat exports declined by 17.7 percent.[41] There is substantial potential to grow the meat export sector further. The livestock value chain is well organized and regulated, meets high quality requirements and sanitary and phytosanitary standards, and has a good animal identification and traceability system. All these characteristics have enabled Namibia to penetrate high-value markets. In 2016, the United States approved the importation of boneless meat and other beef products from Namibia, making it the first African country to export beef to the United States. Exports to the United States are expected to reach over 5,000 tons by 2025.[42] Other key export markets are the European Union and Norway. There is room to expand production and diversify markets, given the high level of sophistication in Namibia's livestock industry.

Climate-smart horticulture value chain

Climate-smart horticulture production offers opportunities for income generation and employment. Fruits and vegetables are among of the fastest-growing agricultural markets in developing countries, and opportunities exist in Namibia for developing commercial-scale production, especially in the fruits subsector (such as grapes), as well as diversifying farming systems and commodities (such as asparagus and mushrooms) and developing a competitive and labor-intensive smallholder sector to increase income and employment prospects. A robust horticulture sector will also require producers to adjust to and deal with new climate requirements and climate-smart practices—for example, by using climate-friendly pesticides, adjusting to environmental grades and standards, and mitigating risks such as pest outbreaks, price volatility, and environmental pollution.

There is a dichotomy between the formal and informal segments of the horticulture market. The formal market is served both by domestic production and imported commodities, where most of the commodities found are produced by medium- and large-scale producers.[43] While Namibia produces an increasing quantity of its horticulture requirements, approximately 56 percent of the total quantity consumed is imported.[44] Large-scale farmers dominate the production of potatoes and grapes, the latter being largely exported, while commercial small-scale farmers produce a range of horticulture commodities mostly geared to the domestic market.

In contrast to the formal market, the informal market serves rural and some less affluent urban and peri-urban consumers through open-air markets. These markets are represented by individual traders who generally buy at farm gate from small-, medium-, and large-scale producers. The informal market is dominated by domestic production. Product standardization is low, as often commodities are procured from various sources in small quantities, and commercial relationships between producers and traders are generally not formalized.

There are several Namibian government initiatives to promote and develop the agricultural and horticulture sector, which have had mixed outcomes. The two main government-sponsored initiatives are the market-share promotion (MSP) and the green schemes. The MSP was first introduced in 2005 following an import substitution policy and requires importers of fresh horticulture produce to source a minimum percentage of their products from Namibian producers as an import permit qualification each quarter. The Agro-Marketing and Trade Agency (AMTA)—established in 2015 as a specialized agency to better coordinate and manage the marketing and trading of agricultural produce in Namibia—implement the scheme under the Ministry of Agriculture, Water, and Forestry (MAWF) working closely with the Namibian Agronomic Board (NAB). The initial MSP threshold was set at 5 percent when it was first introduced and now stands at 47 percent.

The Green Schemes were introduced in 2013 by the MAWF to promote domestic production, contribute to food security, and improve access to land and financing through a series of public investments. The schemes were designed to develop the infrastructure and operations of the private sector, also including the granting of leasehold to farmers. The program was revised in 2018 to include a public-private partnership framework. Currently, there are 11 Green Schemes in operation in the country, ranging in size from approximately 150 ha to 2,500 ha; 56 percent of the schemes' total area is under production. A number of commercial horticulture farmers operate in the Green Schemes; approximately 105 of the 520 registered vegetable producers participate in the schemes.[45] Production practices and the types of producers depend on the geography and the climatic conditions of each scheme.[46] Participation in the Green Schemes can bring benefits, including facilitated access to land in the communal areas in the north, access to agricultural training courses, and better access to finance. Approximately 60 percent of the schemes' participants have access to an Agribank loan.

The operationalization of the Green Schemes has suffered several setbacks. Initially, AgriBusDev, a parastatal organization, was created to oversee the schemes, while private operators led the activity. But several issues became clear, including the failure of larger private operators to follow the rules; poor repayment rates for inputs and services by producers, who needed the government to step in to bail out AgriBusDev; and limited inclusion of smallholder farmers. The Namibian government stopped financing AgriBusDev in 2019 as part of a broader withdrawal of public support for parastatals under the Public Enterprises Governance Act 2019. Three Green Schemes have already been transferred to the private sector, but this was done before clear rules for use, repayment, and inclusion were drawn to ensure responsible investment. In addition, private investors who responded to tenders to farm on the Green Schemes are reportedly still awaiting decisions after more than two years.

Because of several challenges confronting it, horticulture production has not reached its full potential. These challenges include (1) inadequate land use arrangements (in particular, unclear land tenure arrangements); (2) sandy soils and increasing soil salinization in the south; (3) water supply breakdown or interruptions; (4) delayed input supplies such as fertilizers, seeds, and farming services; (5) lack of or insufficient pest management support, such as for the armyworm infestation of 2016; and (6) lack of specific knowledge on horticulture production and on sustainable land and water management.

There are opportunities to improve the performance of both AMTA and AgriBusDev in supporting smallholder producers. AMTA's mandate was to manage the Fresh Produce Business Hubs and National Strategic Food Reserve infrastructure, with a goal of reaching food safety and security. AMTA was expected to work closely with AgriBusDev to address production aspects and with the NAB in relation to regulatory aspects, while helping to support access of smallholder producers to the formal market, including large retailers and supermarkets. Significant public investments were channeled into the development of two 5,000 m^2 Fresh Produce Business Hubs in the northern part of the country, as well as state-of-the-art bulk cold storage and marketing facilities with logistical platforms; future additions for processing facilities, especially for smallholder farmers, were promised.[47] The envisaged business model was that wholesalers would join the hubs, aggregate smallholder producers' produce, and send it to their distribution centers or partner retailers and supermarkets, thus ensuring access to the formal market. In reality, large established wholesale traders never joined the hubs, as they had existing direct commercial partnerships with medium and large producers and their own existing collection and distribution infrastructure. Hubs were not able to aggregate enough volume from smallholder producers,

who underdelivered in terms of quality, quantity, and timing. Smallholders often ended up frustrated with the storage costs at the hubs and the final prices obtained, and they reverted to their existing market channels and sold through the informal sector.

There are new investment opportunities for expanding production in blueberries and grapes, and diversifying into asparagus, mushrooms, and indigenous green leafy vegetables. In 2020, Namibia began exporting blueberries to Germany, Hong Kong SAR, China, the Netherlands, the Russian Federation, and Spain, with a share sold domestically.[48] In the first year of production, over 450 rural women were employed in the Kavango region and over 100 tons of berries were produced. Given the increasing global demand for blueberries, particularly from the European market, there are opportunities to attract new investments.[49] Regarding grapes, Namibia has one key competitive advantage: the harvest window. Namibian grapes ripen and are ready for harvest during a three-week window when there is no supply of grapes in Europe; that is why every major South African grape producer also has an operation in the Aussenkehr Valley (box 3.1). Diversification toward new horticulture products is dependent on agriculture research, climate-smart adaptation, the necessary input supply chains, and training of producers. Asparagus, mushrooms, and indigenous green leafy vegetables have been identified as high-potential commodities. Asparagus adapts to arid climate and salinized soil conditions, while mushroom production has minimum water requirements and provides opportunities for smallholder producers with moderate initial investments. There are potential local and foreign markets—including Morocco, Niger, Norway, South Africa, Spain, and Tunisia—for several fruits (including indigenous ones) and niche vegetables.

BOX 3.1 Grape production in the Aussenkehr Valley

Red table grape varieties are commercially produced in the Aussenkehr Valley of southern Namibia along the Orange River. Approximately 95 percent of Namibian table grapes are exported, and they are an important foreign exchange earner in the country. Main export destinations include the European Union, South Africa, and the United Kingdom. In 2016/17, nearly 200,000 hectares of land were under grape production, employing over 11,000 permanent and seasonal workers. In addition, total exports increased significantly in the 2017–19 period, reaching N$840 million (US$57.3 million) in 2019 with over 33 million kilograms of table grapes exported. Most table grape producers are medium- or large-scale organizations that are private companies or participants in public green or irrigation schemes, such as the Aussenkehr irrigation scheme, the Namibia Development Corporation at the Naute Dam, or the Orange River Irrigation Project under the Green Scheme program.

Success for table grape production in southern Namibia is due first to the harvest period in November–December, when only southern hemisphere grapes (including from global competitors Chile and Peru) are available for the European market. Second, the agroclimatic conditions, including little rain and low humidity, enable production of grapes of exceptionally high quality, which historically have attracted premium prices. Third, the production area is relatively close to Cape Town and its cold chain export facilities. The main challenges are water stress and seasonal frosts. Production is highly dependent on irrigation from the lower Orange River, which experiences low water levels during protracted droughts. The Orange River is affected by international water abstraction and upstream dam construction, and, according to estimates, the river water flow has been reduced by two-thirds in the last few years. Irrigation is also subject to shared watercourse agreements with Botswana, Lesotho, and South Africa through the Orange-Senqu River Commission. Frosts can significantly impact crop outputs and the level of grape exports for a particular year; this was the case in 2017, when unusually low temperatures caused disruptions in the industry.

Sources: New Era Live 2017; Fresh Plaza 2020; World Bank 2021a.

Livestock value chain

Overall, the Namibian livestock industry is well organized and regulated, meets high quality requirements, including sanitary and phytosanitary standards, and has a good animal identification and traceability system. The industry consists of two very different sets of actors: a well-developed and organized commercial sector with privately owned farms, and a very large communal sector on state-owned land. North of the VCF, the Northern Communal Areas (NCAs) houses 55 percent of the Namibian smallholder livestock farmers. These farmers face high barriers to participation in the high-value export-beef value chain, including high transaction costs and monetary fees related to animal quarantine and vaccinations, as well as high transportation and logistics costs that further limit the extent of their market participation. In contrast, the beef value chains south of the VCF are well developed and export oriented. This zone has approximately 4,000 commercial livestock farmers (managing 52 percent of the national herd) and 65,000 communal farmers (managing 8 percent of the national herd), who benefit from FMD-free status.[50] There are opportunities to expand the FMD-free zone (see appendix E).

The VCF effectively divides the beef industry into two value chains, commercial and communal, and more than 60 percent of the cattle are located north of the VCF. Despite its small size (0.25 percent of the total global herd population), Namibia's cattle industry is valued at approximately N$4.6 billion (US$324 million) and accounts for 4.3 percent of all goods and services produced by Namibia annually. In addition, Namibia is a net exporter of beef; approximately 85 percent of exported beef (N$2.6 billion) goes to South Africa, the European Union, Norway, Russia, China, and Angola, with the rest exported to other African and emerging market countries. In 2017, Namibia was the world's 26th largest exporter of bovine meat, up from 38th position in 2016.[51]

The Namibian livestock value chain south of the VCF enjoys several competitive advantages. First, Namibia is the only African country recognized as having negligible risk for bovine spongiform encephalopathy, with the World Organization for Animal Health–approved zones free from FMD, peste des petits ruminants, and contagious bovine pleuropneumonia. Second, Namibia is recognized for its livestock identification and traceability system (NamLITS) that offers disease management and validated meat safety guarantees in accordance with the FAN (Farm Assured Namibian) Meat quality assurance scheme. Third, the country produces high-quality natural meat from free-range, grass-fed cattle that are free of antibiotics. The Namibian livestock value chain is well developed and includes input suppliers of genetic materials for breeding and feed along with veterinary inputs such as vaccines, preventive care, and extension services. Other actors include animal feed manufacturers,[52] nine registered livestock agents and auctioneers (who provide a valuable interface between the producers and the abattoirs), 20 small to medium feedlots, and a very large feedlot (with a capacity for more than 9,000 cattle) that is operated by the Meat Corporation of Namibia (MeatCo), the largest meat processor in the country and partly state owned.

There are opportunities to increase value addition in the beef sector. Farmers have to decide between producing weaners for live sale at the age of seven months versus fattening the ox to a 27-month age for sale to MeatCo or other abattoirs. Given the historic price ratio, once the weaner price is above 60 percent of the ox carcass weight price, it is typically more profitable to produce for the weaner market, including for export to South Africa. Because South Africa has richer pasture and feed resources than Namibia, where rangeland productivity is low and imported feed costs are high, South Africa can offer prices that make exports to that destination more attractive than selling finished animals to MeatCo.

The uncompetitive prices offered by MeatCo may reflect insufficient competition and the limited pressure on MeatCo to cut costs. Improving efficiency within MeatCo and productivity in beef fattening, including through improved rangeland management, can unlock opportunities to add more value to beef in Namibia.

There are also opportunities to fully capitalize on the market potential of existing trade agreements to boost exports.[53] While in recent years the meat-products export basket has marginally diversified, it still consists of a relatively concentrated set of products. Namibia's export specialization is highest in frozen beef carcasses, chilled or frozen sheep carcasses, and fresh or chilled lamb carcasses. South Africa remains Namibia's top export destination for frozen beef and sheep meat, while the United Kingdom is the main market for fresh or chilled beef. Looking at market share penetration levels, Namibia has steadily maintained a strong position in the Norwegian and South African markets. However, the overall market reach remains low, with only slight improvements in value addition and product diversification; low market reach was also found to be one of the constraining factors for large producers such as MeatCo. Lastly, although Namibia's cost to export is high, time to export is relatively low, which enables the county to maintain its quality margin of fresh beef exports. Thus, better use of trade concessions and a more conducive legislative environment for export promotion could bring down costs and boost the sector's growth in the future.

The climatic challenges highlighted earlier—such as semi-arid to arid country conditions with pronounced water scarcity, high climate variability in precipitation and temperature, and high evaporation rates—also pose important challenges to the livestock industry. Extensive production systems require investment in water-conserving high-efficiency irrigation technologies, while degraded rangeland with bush encroachment adds further pressure to the set of challenges. Under current climate conditions, approximately 880,000 units (43 percent of total) are affected by drought. This number is expected to increase to 1.8 million (90 percent of the total) under future climate conditions. Moreover, the current herd is approximately 60 percent of its peak of over 3 million achieved in 2018, and the average offtake is only 14 percent and currently likely to be only 8 percent, as owners rebuild herds after the 2016–2020 drought years. The current herd is approximately 60 percent of its peak of over 3 million achieved in 2018, and the average offtake is only 14 percent and currently likely to be only 8 percent, as owners rebuild herds after the 2016–2020 drought years.[54] This situation has meant that in 2020 the volume of cattle offered is about the same as local demand, which limits availability of supply to export markets. Other issues relate to the limited scope and attention that animal health has had as a mainstream industry issue. At present, all efforts to promote animal health coverage and good practices are focused on the NCAs. A broader focus is needed to improve livestock production systems and resilience to climate change across all regions.

Another factor affecting water availability, land productivity, and grazing capacity is bush encroachment of farmlands. Bush encroachment has lowered the livestock carrying capacity of rangeland by up to two-thirds and reduced the probability of groundwater recharge to approximately one-third compared to nonencroached areas. A policy to control bush encroachment and develop a bush-based animal feed value chain presents opportunities for restoring rangeland, developing a new industry, and positively impacting biodiversity. Bush-based animal feed production has been a growing practice in Namibia during periods of severe droughts, and opportunities exist to commoditize it.[55]

Namibia has proactively spearheaded preparation of its nationally determined contributions (NDCs) to combat climate change. These include specific industry recommendations

for climate-smart livestock practices such as improved feed management, improved animal health, improved rangeland management, and use of drought-tolerant breeds. Recognizing the carbon footprint of the livestock industry through enteric fermentation, the NDCs offer mitigation options and strategies for the extensive production system, such as improved livestock production in feedlots to reduce methane emissions, and restoration and rehabilitation of grasslands and savannahs to reduce emissions from soil degradation.[56]

The Small Stock Marketing Scheme has had limited success. The Small Stock Marketing Scheme was designed to control the export of live sheep to South Africa and divert the trade to internal abattoirs to boost value addition. With the introduction of the scheme in 2004, the volume of livestock marketed dropped by over 500,000 (more than 50 percent). Given the lower price differential in the domestic market, an estimated N$40 million (US$2.8 million) per year in revenue was lost for the communal sheep farmers. The export restriction policy resulted in a near doubling in abattoir capacity to 1.3 million head and the estimated creation of approximately 300 jobs, but this figure does not consider the job losses in livestock production and live trade sectors. During the 2018/19 drought, the government temporarily lifted the scheme to allow farmers maximum opportunity to market.[57] As a result of the Small Stock Marketing Scheme, there was a significant loss in market for communal (including fat-tailed) sheep farmers, which in turn resulted in large revenue losses for the Namibian economy and particularly for the southern regions of the country.[58]

Improving digital infrastructure can help support growth of livestock and horticulture value chains. During COVID-19, the private sector turned to online auction sales, which opened up new markets for livestock, as there was an increase in the number of buyers outside Namibia. Digital literacy training and upgrading rural connectivity can support smallholder farmers to participate in online trading platforms.

Policy reforms for the livestock value chain are needed to address production constraints, maintain export quality, promote investments in product diversification and local value addition, and strengthen resilience to climate change. There are several reforms needed to enhance the global competitiveness of the livestock value chain and support inclusive and green growth of the industry. These include (1) addressing the nontariff and logistics barriers that hinder access to competitively priced inputs; (2) leveraging trade agreements and the African Continental Free Trade Area to develop strategies for market diversification into other African and Middle Eastern markets, and to establish strategic partnerships with Botswana; (3) establishing measures to increase domestic production of bush-based animal feed and fodder, including through the Green Schemes, and (4) effectively implementing the industry recommendations under the NDCs for climate-smart livestock practices such as improved feed management, improved animal health, improved rangeland management, and use of drought-tolerant breeds to reduce the industry carbon footprint.

TABLE 3.4 Recommendations: Climate-smart agribusiness

	Responsible agency
Short-term actions	
Improve access to finance for smallholder farmers by (1) establishing a window/envelope under the newly launched credit guarantee scheme for agribusiness, (2) strengthening availability of reliable data on smallholder farmers, and (3) supporting the entry of fintech/agtech players to provide new financial products.	MOF, DBN, BON; NASRIA, participating financial institutions
Improve water availability for the Green Schemes by (1) updating the hydrological assessment and identifying potentially irrigable land in the Northern Communal Area for Green Scheme expansion; (2) updating tariffs to ensure that irrigation services are priced to ensure full cost recovery for operation and maintenance of irrigation schemes; (3) investing in improved water metering to ensure abstraction is aligned with water licenses; and (4) exploring opportunities for PPPs in irrigation service delivery in Green Schemes.	MAWF
Explore new export markets for boneless and processed meat from the NCAs to countries with equal or poorer FMD status, thus creating value-added meat products for export.	MIT; Meat Board of Namibia
Establish clearer rules for private operators for any future Green Scheme transfer (for example, rules for use, repayment, and inclusion) to ensure that private operators can more easily implement the programs and scale them effectively.	MAWF
Medium- to long-term actions	
Increase land tenure. Increase period of land leases (currently three to five years) to enable longer-term investments. Explore linking land lease adjudication process to commercially driven smallholder farmer links program.	MLR
Enhance private participation in the Fresh Produce Business Hubs. Amend legislation (1) to modify the role of the AMTA so that it acts as a custodian of land to be leased to private operators; (2) to ensure private investors have technical support to meet food safety and other regulations for operating Fresh Produce Business Hubs; and (3) to facilitate partnerships between private hub operators and farmers.	NAB
Strengthen FMD monitoring. Examine the feasibility of building a secondary temporary VCF further north of the existing VCF, excluding the regions where FMD is endemic (that is, Zambezi region) and with due notice to the World Organization for Animal Health. To increase supply of livestock, implement a medium- to long-term FMD-monitoring project between the two fences and potentially get approval for a larger FMD-free area and/or compartmentalized FMD.	Directorate of Veterinary Services – MAWF
Leverage Green Schemes for animal feed producers. Promote market entry of new bush-based animal feed and fodder producers.	MAWF

Note: BON = Bank of Namibia; DBN = Development Bank of Namibia; FMD = foot-and-mouth disease; MAWF = Ministry of Agriculture, Water and Forestry; MIT = Ministry of Industrialisation, Trade and SME Development; MLR = Ministry of Land Reform; MOF = Ministry of Finance; NAB = Namibian Agronomic Board; NASRIA = Namibia Special Risks Insurance Association; NCAs = Northern Communal Areas; PPP = public-private partnership.

3.3 Housing

There is increasing and unmet demand for formal housing in Namibia due to rapid urbanization. Namibia is experiencing annual urbanization of around 3.8 percent, translating to 50,000 people (13,500 new households) annually. The share of the urban population is expected to increase from 52 percent to 60 percent by 2030. Formal housing delivery is not keeping pace with demand, resulting in a rapid growth of informal settlements. There is an estimated housing backlog of around 300,000 units (with an estimated backlog of 84,000 units just in Windhoek).[59] Approximately 15,000 new households require accommodation each year in urban areas, and if the backlog is to be eradicated within a decade, an additional 30,000 housing units will be required annually, for a total of about 45,000 new housing units per year. This need offers a key economic opportunity. The housing sector creates spillovers across other sectors along the value chain, and thus has a high job-creating potential. Housing accounts for 10–30 percent of a country's consumption, and 50–90 percent of household wealth and savings.[60] The high economic multiplier in the housing construction sector offers significant potential to support economic recovery by influencing demand for intermediate manufacturing and services inputs into the housing sector.[61] In addition, research shows that the multiplier effect is particularly strongest in the most constrained segments of the housing market serving the middle- and low-income households, which is the target segments in Namibia.[62]

Unmet demand for housing is leading to a rapid growth in informal settlements in urban areas. There were an estimated 140,000 shacks in Namibia in 2017;[63] informal structures are projected to outnumber formal structures in urban areas by 2025. Only 9,000 formal housing units were constructed in 2017, compared to 13,000 informal units.[64] The City of Windhoek estimates that the number of people living in shacks has increased from 3,000 households (80,000 people) in 2011 to 22,000 households (160,000 people) at present. [65] A similar trend in the growth of informal settlements is being observed in other towns as the delivery of formal housing fails to keep up with demand. This trend highlights the urgency of developing a sustainable housing market in Namibia.

Accelerated delivery of housing is a key priority of the Namibian government in the National Development Plan and Harambee Prosperity Plans. The government is targeting accelerated urban land and housing delivery, improved land servicing through PPPs, creation of a national housing information system, and better-coordinated urban and regional development as key improvement strategies.[66] Other priorities are informal settlement upgrading, housing delivery, and provision of basic municipal services such as water and sanitation and bulk infrastructure. There is also a proposal for an Urban Development Fund to be developed through bilateral cooperation with development partners with the aim of supplementing funding for serviced land and housing delivery. The Ministry of Urban and Rural Development (MURD) is reviewing the National Housing Policy, drafting a new National Informal Settlement Strategy, and trialing a new Flexible Land Tenure System that fast-tracks basic tenure for informal settlers. In collaboration with the Ministry of Agriculture, Water and Land Reform, the MURD will continue to implement the Flexible Land Tenure System, with a focus to increase tenure security in informal settlement areas. The Flexible Land Tenure System covers all the types of land titles in Namibia—starter, land hold, and freehold. Immediate interventions should concentrate on alternative forms of land title (starter and land hold) which could be simpler and cheaper to administer than existing forms of land title. These forms could then be upgraded to freehold, once all required processes are completed.

Namibia's mortgage finance market is relatively large and robust but is facing significant constraints to growth. There are five private mortgage loan providers, which collectively are estimated to have had a total portfolio of 73,396 mortgages in 2020.[67] This number of mortgage loans as a proportion of total households is high by African housing market standards. However, these mortgage loans are mainly granted to upper-income households, so this figure also masks the unequal access to housing finance: in particular, the access of middle- and lower-income groups to mortgage finance is very limited. For instance, some of the four big banks require a minimum annual salary of approximately US$50,000 to qualify for a mortgage. Furthermore, mortgage lending in Namibia is currently facing elevated delinquency (slow and nonpayment of mortgages), primarily due to the impact of the COVID-19 pandemic on household incomes. This situation reduces the appetite of mortgage institutions for lending in the housing market, especially among medium- and low-income segments, which remain underserved.

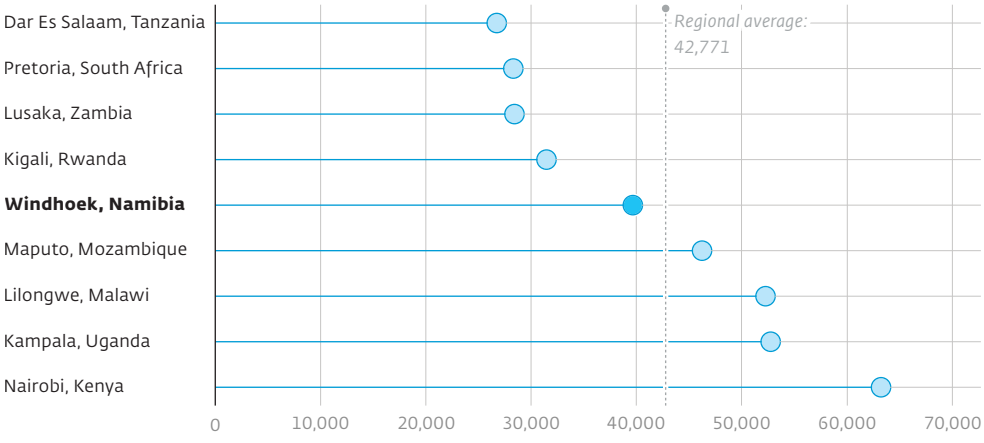
Up to 75 percent of Namibia's urban households could afford mortgage-financed housing if appropriate products were available.[68] It is notable that, as indicated just above, Namibia already has a portfolio of 73,396 mortgage loans (representing approximately 22 percent of urban households), provided mainly by Namibia's top three financial institutions (Bank Windhoek, First National Bank, and Standard Bank). These figures indicate a high level of mortgage finance penetration among the upper-income segment of the population and a growing penetration into the middle-income segment. There are indications that the high-income market is close to saturation.[69]

With appropriate interventions, Namibia has the potential to reduce the costs of housing delivery. A benchmarking study of 15 countries in Sub-Saharan Africa by the Centre for Affordable Housing Finance in Africa (CAHF) showed that while the cost of building a house is higher in Namibia than in its closest neighbor (South Africa), it is still lower than the regional average (figure 3.5).[70] Moreover, the increases in the cost of building houses in Namibia have significantly slowed down (at a rate faster than the decline in inflation) over the past five years (figure 3.6).

The economic downturn has dampened the housing market and slowed down growth of formal housing. Since the 2016 recession, participation of developers and contractors in formal housing development has stagnated and has worsened during the COVID-19

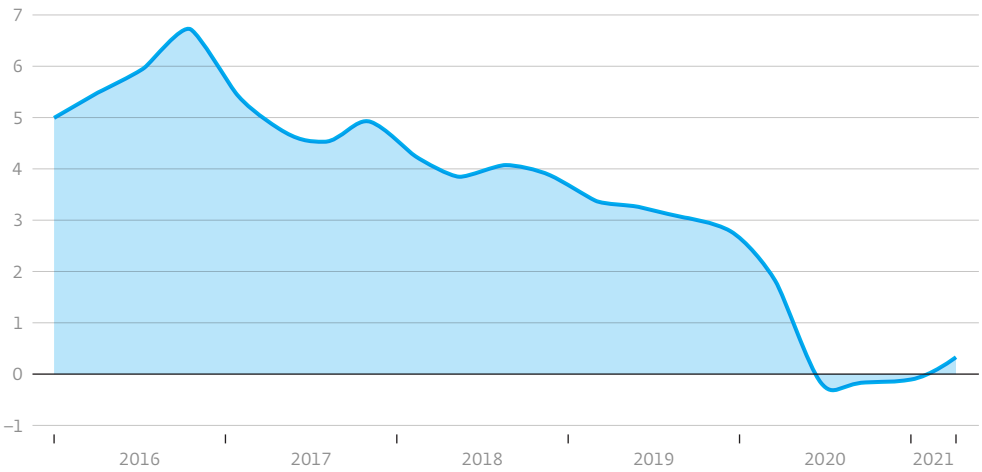
FIGURE 3.5 Comparison of house building costs

Windhoek, Namibia and selected cities in Sub-Saharan Africa (US$)



Sources: First Capital Namibia 2021; CAHF 2017.

FIGURE 3.6 House Building Cost Index: Y-o-Y change



Source: First Capital Namibia 2021. Note: Y-o-Y = year on year.

pandemic. Formal housing production before the pandemic was estimated to be less than 9,000 units a year nationally, while informal housing grew at around 13,000 units a year.[71] This growth has now significantly worsened due to the impacts of COVID-19 and the prolonged recession. Large contractors operating from South Africa withdrew from Namibia during the recession, and some of these ultimately went bankrupt for various reasons.[72] Local developers and contractors have found limited housing development opportunities over the last five years.[73] However, several private developers continue to operate in Namibia, generally in two specific ways. First, there are some growing "new town" developments driven by private ventures such as Ongos in Windhoek and Osona near Okahandja. These large greenfield developments, located in large, newly proclaimed urban areas on the fringes of existing towns, include multiple housing typologies.[74] Secondly, several smaller land servicing and housing development projects are in development through partnership arrangements between local authorities and private companies. These are very promising opportunities for further developing the formal housing sector.

The National Housing Enterprise (NHE) could potentially contribute more toward meeting the demand for formal housing. The NHE is a state-owned enterprise that is mandated to deliver housing to low- and middle-income Namibian households by undertaking and financing housing projects. From its inception in 1993 to mid-2019, it developed only 17,113 houses countrywide, many of which are two- and three-bedroom units, and few of which are affordable to lower-income groups.[75] The NHE has focused most of its delivery on civil servants but is increasingly focusing its projects down-market, with simple bedsits and one- and two-bedroom houses. The opportunity exists for the NHE to expand its housing delivery contribution through a better-focused strategic approach such as development of strategic partnerships (including PPPs) to recapitalize existing and finance new housing projects. However, such an approach would require interventions to restructure, recapitalize, and repurpose the NHE to enhance the delivery of housing through its programs.

Public sector efforts to develop mass housing have not been successful to date. The Mass Housing Program was intended to deliver 185,000 houses at a rate of over 10,000 a year between 2013 and 2030 through cofinancing with the private sector. The program did not yield the expected scale of delivery, and utilization of houses constructed through this scheme

was affected by affordability constraints, as most units were too expensive to ensure effective demand from households. The Build Together Program, which intended to use microcredit driven by municipalities to assist with home building, also had limited success. Several factors explain why these public sector programs were not successful: they had municipalities operate as retail finance intermediaries for household-level loans (instead of building capacity of specialist financial service providers); they lacked sufficient wholesale financing to grow microcredit books; and they were insufficiently rigorous in loan book management, capital recovery, and scaling of rollout. As a part of the Mass Housing Program, an annual grant to the Shack Dwellers Federation of Namibia (SDFN) has helped widen the reach of government funding to low-, ultra-low-, and ultra-ultra-low-income households through savings schemes and self-help building programs. Through this program, the government has recognized the critical role of community-based group saving schemes such as the SDFN, as a viable and sustainable solution to informal settlements and the provision of affordable housing. This effort has yielded constructive results that have potential for larger-scale reach of government support to lower-income households through engagement with nonprofit organizations, specifically with a target of the most vulnerable and historically disadvantaged groups.

The Namibian construction industry is mostly unregulated. The Construction Industries Federation (CIF) is lobbying for legislation that would regulate the industry so as to clarify the capabilities and development needs of construction sector operators in the country.[76] There are opportunities to benefit from the experience of South Africa's Construction Industry Development Board (CIDB), which helps categorize the ability of developers and contractors to undertake contracts at various scales and helps build industry capacity over time. There are opportunities to strengthen the role and impact of the Namibia Standard Institute and the Habitat Research and Development Centre (HRDC) within the MURD for the adoption of alternative building materials and technologies especially, for affordable housing provision.

Innovative projects emerging in the private sector are driving housing development in Namibia and could offer blueprints for scalable housing delivery models in the future. There are several private initiatives, including a few in trial phase (as highlighted in box 3.2), that offer lessons for scaling private participation if constraints to urban land delivery are addressed. In addition, efficient delivery of serviced urban land will enable these developers to provide more housing stock for middle- to low-income households. International Housing Solutions (IHS), a real estate fund manager with assets in various Sub-Saharan countries, has commenced projects to deliver rental housing in Windhoek, Okahandja, and Walvis Bay, which will be among the first medium-density (three-story rowhouse) developments in Namibia. At the lower end of the income profile, the Namibia Housing Action Group

BOX 3.2 Success stories: Private initiatives to increase the delivery of formal housing in Namibia

The Government Institutions Pension Fund (GIPF) is playing a critical role in supporting private players in the housing sector. Königstein Capital's Property Investment Fund, which is primarily backed by the GIPF, has invested in around 25 projects that deliver housing for the middle-income market, leading to the development of 2,500 units over 10 years. A new fund will focus primarily on affordable housing projects.

Other private initiatives include the Namibian Housing Action Group Project, which mobilizes funding for scaling up housing construction in informal settlements, and the Development Finance Facility Design with Pupkewitz Foundation and Megabuild on the construction of a financing facility for the delivery of serviced land and housing across smaller towns in Namibia.

(NHAG), a Namibian service organization that aims to support and add value to the activities and processes of the Shack Dwellers Federation, has raised capital from government,[77] Standard Bank, First National Bank, and other private companies to support informal settlement upgrades with public authorities. The NHAG facilitates basic housing construction through a community-driven process,[78] with projects financed at 5 percent interest over 11 years from a revolving fund. It has plans to upgrade 26 informal settlements countrywide, including 1,088 plots in Gobabis and 720 plots in Karibib.[79]

The capacity, including financial capacity, of local authorities to provide serviced land, infrastructure, and housing is severely limited, even in larger cities. This situation creates significant bottlenecks and delays in the process of land identification, planning, release, and servicing. Furthermore, the levying and collection of rates and service charges is not efficiently implemented. Local authorities increasingly rely on development partnerships with private developers and contractors, in which land is contributed to a development pool and the private partner drives the planning, proclamation, servicing, housing construction, and sale of units. This model could be an effective mechanism to increase private participation in the provision of formal housing. However, to increase the capacity of local authorities, there is a need for clearer development partnership mechanisms, entailing less political interference, less potential for corruption, fewer administrative delays, and greater potential for scale replication. Clear roles, responsibilities, and funding parameters would also create more certainty for these partnerships.

Namibia's paper-based urban land delivery processes (including design, approval registration, titling, and transfer) are inefficient and tend to delay housing development. It is commendable that the Urban and Regional Planning Act, 2018 that replaced/ repealed the Township and Division Land Ordinance 11 of 1963, and the Town Planning Ordinance 18 of 1954, came into effect on September 3, 2020, following the promulgation of the Regulations. The Act makes provision for decentralization of some functions to speed up the land delivery process. However, lack of capacity within regional and local authorities is delaying effective implementation of the decentralized serviced land and housing delivery. In addition, corrupt practices at the local-authority level add a further constraint to streamlined land release. Delays in these processes limit the ability of developers to identify, mobilize, procure, plan, and develop serviced land and housing at scale. This issue is exacerbated by developers' increased holding costs that arise due to institutional delays in approvals. These land delivery processes could be significantly streamlined and improved through the adoption of digital systems, which are used in many other countries.

High costs and delays associated with buying property constrain access to housing in Namibia. Registering property in Namibia costs almost 14 percent of the value of the property. This is almost double the average for Sub-Saharan Africa and more than three times the average in Organisation for Economic Co-operation and Development countries. Coupled with a relatively high threshold to qualify for mortgage finance, these high costs have severely constrained access to housing. In addition, the delays in obtaining compliance certificates from local authorities make buying a property in Namibia unnecessarily cumbersome and costly, despite a relatively well-functioning deeds registry.

Rapid delivery of serviced land in all urban areas is a critical for the recovery and growth of the housing market and for efforts to address inequality in land ownership. An immediate concerted effort is required from the national and local governments support effective implementation of the Urban and Regional Planning Act, 2018 and the Flexible Land Tenure System to expedite land identification, planning, and release for development by most local authorities. Further, support programs to drive the conceptualizing, design, and

implementing of rapid serviced land delivery will be critical to achieve this. These support programs will need to be augmented by capacity development programs that improve local authorities' knowledge and their ability to plan, identify, and release land for development and partner with private entities to undertake development.

Broadening and deepening the supply of wholesale and retail housing finance in Namibia's housing market will create opportunities for loan portfolio growth and stabilization and will stimulate demand. While Namibia's banking fundamentals are generally solid, the capacity to extend housing lending is constrained by high existing ratios of housing lending to other types of debt and by dwindling household affordability. New mechanisms are needed to increase access to wholesale finance for the purchase of land and services, and to deepen housing lending to middle- and lower-income groups. In addition, development and construction finance facilities will help stimulate demand by improving the ability of private developers to plan, implement, and sell housing products. The market could be further opened by initiatives that allow retirement fund members to access accumulated withdrawal benefits as collateral for housing finance. The government could also consider innovative approaches to improving the capacity of financial institutions to provide alternative housing finance products, along with innovative mechanisms for freeing up Namibia's mortgage institutions to allow further lending.[80] Lastly, on the public front, it will be key to finalize and implement the Urban Development Fund, which can supplement funding for serviced land delivery, through bilateral cooperation with development partners.

A proposed Small Towns Civil Servants Housing Program[81] remains an untapped opportunity. Atenu, a private development company, is developing appropriate housing schemes in smaller towns to meet the significant housing demand from Namibian civil servants (for example, health care and education workers). This program could increase the supply of housing across smaller towns in Namibia and could help make mortgages available outside of the larger cities and
towns. Resources to help develop this program and take it to scale could yield significant housing returns and begin formal housing delivery across a wider proportion of urban Namibia.

Climate finance can support a more resilient recovery as well as growth of the housing construction and real estate economy. Though still undeveloped in Namibia, climate housing finance will enable the country to mitigate climate risk while offering financial institutions an opportunity to develop new products and diversify their portfolios. Climate housing finance products can be developed alongside green bonds and can include household-level renewable energy investments. In addition, climate housing finance requires investment in nascent—or yet undiscovered—technologies in industries such as plastics, cement, steel, batteries, and solar panels. However, there is no regulatory framework for climate risk management or climate finance, meaning there is no framework for monitoring and responding to risks associated with climate-linked assets in the portfolios of financial institutions. One key gap is the lack of data about the transmission of climate-related physical and transition risks to financial risks. There are opportunities to leverage a Climate Risk Forum or a Green Banking Academy to accelerate the green transformation of the banking sector while tackling climate change.

Improving construction industry regulation could open opportunities to accelerate green buildings and the Excellence in Design for Greater Efficiencies (EDGE) certification. EDGE certification seeks to unlock the potential for green construction and development in emerging markets by identifying the most cost-effective green designand construction solutions. While green building certification is nascent in Namibia, there is growing interest in the water and energy savings that green building design could bring to projects. This is evidenced by the number of housing and hotel projects in the process of receiving their EDGE certification,

which in turn will create new markets for the use of innovative materials and housing designs (such as alternative building materials and 3D-printed houses following a low-carbon process).

Building on the early success of the national informal settlement upgrading support program, opportunities for private participation in the housing sector can be tapped. Upgrading informal settlements is an important vehicle for addressing inequality in Namibia. However, the strategy and approach to settlement identification, assessment, planning, servicing, and housing development need to be redesigned to attract more private players. The institutional and funding framework for the upgrading program also needs to be further refined. Local authorities (especially in Windhoek) are central to the success of the informal settlement upgrading program; hence they require capacity building, both financial and technical. Given its importance to urban housing development, Bank Windhoek can be an important channel to leverage private investment in the sector, assuming it can effectively deliver on its mandate.

TABLE 3.5 Recommendations: Housing

	Responsible agency
Short-term actions	
Support the finalization and implementation of the housing strategy, drawing upon global experience, to promote sustainable urban development. The strategy will provide a transparent and accountable framework for innovative partnerships and should cover (1) urban land reform; (2) flexible land tenure system; (3) national serviced land delivery support; and (4) the national informal settlement upgrading programs.	MURD
Leverage lessons from the student village and Windhoek housing projects to refine the housing PPP framework. PPPs are critical for the deployment of bulk infrastructure since local authorities often lack needed financial and technical capacity. The enhanced PPP framework will also help identify support mechanisms required from the state to facilitate an efficient PPP.	MURD; MOF
I**mplement digitalization measures to improve cost and efficiency of the entire land delivery process, including land design, titling, approval, and registration**. This will require (1) building capacity for process redesign; (2) strengthening technological readiness; and (3) in the medium term, improving availability and cost of digital infrastructure to enable accessible and scalable registration by local authorities. These measures can reduce key barriers, including slow processing and high cost of registration.	MURD; Office of the Prime Minister; MAWF; MICT
Medium- to long-term actions	
Introduce EDGE certification in collaboration with the Construction Industries Federation. EDGE complements digitalization efforts as it is a cloud-based platform that calculates the cost of going green and determines utility savings. EDGE certification can support PPPs by providing the private sector with the speed and market intelligence needed to focus on constructing houses with green building certifications. EDGE certification will also create opportunities for the introduction of innovative low-carbon housing mechanisms such as 3D-printed housing.	MURD; MAWF
Create the regulatory framework for the issuance of green housing finance. This will require ensuring that regulatory authorities have the capacity to monitor and respond to risks associated with the increasing share of climate-linked assets in the portfolios of financial institution. A Climate Risk Forum and a Green Banking Academy will support this work to accelerate the green transformation of the banking sector.	BON; NAMFISA; MOF; commercial banks
Introduce innovative market-appropriate financial products for the low- and middle-income housing market. This includes (1) exploring certain instruments to leverage private funding such as credit guarantee schemes for informal income earners and home savings scheme to help pay for down payment; (2) determining optimal risk-sharing mechanisms for the deployment of relevant financial products, such as mortgage refinance and securitization, through a study; and (3) identifying mechanisms (regulations and incentives) to increase participation of institutional investors in the housing sector.	BON; NAMFISA; financial institutions

Note: BON = Bank of Namibia; EDGE = Excellence in Design for Greater Efficiencies; MAWF = Ministry of Agriculture, Water and Forestry; MICT = Ministry of Information and Communication Technology; MOF = Ministry of Finance; MURD = Ministry of Urban and Rural Development; NAMFISA = Namibia Financial Institutions Supervisory Authority.

Notes

1. Namibia's second nationally determined contribution makes an ambitious commitment to avoid 91 percent of business-as-usual emissions by 2030 and achieve net-zero emissions by 2050. For more information on Namibia's climate action plan, see the United Nations Framework Convention on Climate Change website at https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Namibia%20First/INDC%20of%20Namibia%20Final%20pdf.pdf.
2. Kruger, Alao, and Eberhard (2019).
3. Based on data from the World Development Indicators database.
4. Kruger, Alao, and Eberhard (2019).
5. Estimates are based on World Bank Group (2021).
6. Namibia, Office of the President. 2004. "Namibia Vision 2030: Policy Framework for Long-Term National Development." Windhoek. https://www.npc.gov.na/national-plans/vision-2030/.
7. For more information on Namibia's climate action plan, see the United Nations Framework Convention on Climate Change website at https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Namibia%20First/Namibia%27s%20Updated%20NDC_%20FINAL%2025%20July%202021.pdf.
8. Kruger, Alao, and Eberhard (2019).
9. Ibid.
10. Risk allocation under the power purchase agreements is being revisited by the ECB based on an interpretation of the REFIT policy. A decision has yet to be reached on the treatment of contracted capacity versus installed capacity and the tariffs that apply to each (REFIT versus avoided cost).
11. Kruger, Alao, and Eberhard (2019).
12. Other relevant policy and regulatory frameworks include the National Energy Policy 2017, the Renewable Energy Policy Framework 2016, and the Rural Electrification Distribution Master Plan (redeveloped in 2011).
13. ECB (2021a).
14. USAID (2019).
15. The exception is REDs, which are able to procure up to 12 percent of their total electricity consumption under the previous framework, and some captive and embedded generation.
16. Namibia, Ministry of Mines and Energy. 2019. "Electricity Supply Industry: Detailed Market Design." Windhoek. https://www.ecb.org.na/images/docs/Rules_and_Regulations/MSB/MSB_Detailed_Design_Report.pdf
17. Based on a presentation by the Electricity Control Board on March 2021.
18. ECB (2021b).
19. These challenges were derived from consultations with multiple stakeholders from the private, public, and financial sectors and also informed by IFC (2021).
20. The duck curve is a graphic representation of higher levels of wind and solar on the grid during the day that leads to a high peak load in mid to late evening.
21. For more details on the projects, see the Namibia PPP Conference's website at https://namibiapppconference.com/wp-content/uploads/2021/06/Projects-Book.pdf.
22. Ibid.
23. Namibia Power Corporation 2021.
24. Erastus (2021).
25. World Bank (2021).
26. The OGEMP complements the Rural Electrification Program, which itself is based on the Rural Electrification Distribution Master Plan.
27. UNAM (2018).
28. The challenges discussed are based on Hoeck and others (2021).
29. IRENA (2018).
30. Thomas (2007).
31. Based on data from the Observatory of Economic Complexity database.
32. SASSCAL (2020).
33. For an overview of Namibia's acute food insecurity situation, see the Integrated Food Security Phase Classification website at https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1152360/.
34. World Bank (2020a).
35. World Bank (2021b).
36. For more information, see Amatheon Animal Health at https://www.amatheon.com/; World Bank, Stakeholder Surveys, Responsible Investment, 2015; Innovations for Poverty Action's "The

Global Agricultural Development Company" at https://www.poverty-action.org/organization/global-agricultural-development-company-gadco.

37. IMF (2018).
38. Babu and Shishodia (2017).
39. Such shifts have occurred in Ghana, Kenya, Malawi, Rwanda, Tanzania, and Zambia.
40. Jayne and others (2016).
41. Based on data from the World Bank's World Integrated Trade Solution database, available at https://wits.worldbank.org/.
42. For an overview of market opportunities in Namibia, see the US Department of Commerce International Trade Administration's website at https://www.trade.gov/country-commercial-guides/namibia-market-opportunities.
43. As of September 2019, there were 85 active horticulture traders registered by the Namibian Agronomic Board the Agro-Marketing and Trade Agency, with Windhoek playing a central role as a hub for the aggregation, distribution, and consumption of fruits and vegetables.
44. World Bank (2021c).
45. Ibid.
46. Small and medium horticulture farmers are mostly present in the northern part of the country in the current schemes (that is, in the Kunene and Kavango regions), while medium and large horticulture farmers producing grapes operate in the schemes in the southern and Orange River areas.
47. World Bank (2021c).
48. IBO (2020).
49. CBI (2021).
50. World Bank (2021b).
51. Meat Board of Namibia (2020).
52. Feedmaster is one of the largest animal feed manufacturers in Namibia, producing 120,000 tons of animal feed annually and directly competing with South African producers.
53. Meat Board of Namibia (2019).
54. SADRI (2021).
55. World Bank (2021d).
56. For more information on Namibia's climate action plan, see the United Nations Framework Convention on Climate Change website at https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Namibia%20First/Namibia%27s%20Updated%20NDC_%20FINAL%2025%20July%202021.pdf.
57. World Bank (2020b).
58. Ibid.
59. CAHF (2020).
60. Wharton–University of Pennsylvania International Housing Finance Program presentation to World Bank Group staff, September 2021.
61. The CAHF (2017) estimates a housing direct impact output multiplier of 3.22 times for South Africa. Although South Africa's housing multiplier is likely to be higher than in countries with well-developed credit markets, Namibia's financial markets are comparable to South Africa, and, given the strong link between the two economies, the multiplier for Namibia could be around this range. Lockwood (2020).
62. Acolin and Hoek-Smit (2020).
63. According to a paper by Weber and Mendelsohn (2017), indicates a high figure of 8,900 for formal houses constructed each year; that figure is referenced here in the absence of any other evidence to the contrary.
64. The disparity is likely to have grown since 2017.
65. According to stakeholder interviews.
66. These strategies envisage the development of structure plans for all local authorities and the densification of existing urban areas to combat urban sprawl.
67. CAHF (2020).
68. Maximum housing affordability in high-, middle-, and low-income categories is calculated with the Centre for Affordable Housing Finance in Africa's Affordability Calculator, using prevailing loan terms (20-year term, 9 percent interest, 20 percent deposit, 25 percent of income spent on repayments). It is assumed that households earning US$1,000 (N$15,000) per month could regularly repay a mortgage given current mortgage terms in Namibia. Ultra-low and ultra-ultra-low housing product affordability are indicative, as these would depend on the nature of land access, ability to mobilize finance, and the terms of such finance.
69. According to stakeholder interviews, the lack of high-income households to which mortgages can be extended means Namibian banks now face the challenge of driving mortgage penetration into middle-income groups to grow the mortgage portfolio (as was required in South Africa over the last decade).

70. Although there are limitations to this comparison, it is informative about the cost of building a standard house in Namibia. Namibia was not included in the CAHF (2017) study. The cost for Namibia was obtained from the study by First Capital Namibia (2021), which estimated the cost of a standard three-bedroom house. The CAHF (2017) estimated the cost based on a 55 m² house on a 120 m² plot.
71. Weber and Mendelsohn (2017).
72. Group 5 became the third large construction company operating in Namibia to file for bankruptcy in 2019. Wasserman (2019).
73. According to stakeholder interviews.
74. The development in Ongos Valley has begun construction and sales and plans to develop 28,000 units of mixed-typology housing in a town that includes all services and sociocultural facilities—essentially a satellite town of Windhoek. This project will provide bank-mortgaged housing, as well as an innovative rent-to-own scheme based on a securitized housing finance model backed by a locally subscribed domestic medium-term note.
75. Iikela (2019).
76. According to stakeholder interviews.
77. In 2021, N$10 million was received for the construction of 300 houses.
78. This process delivers 34 m2 units for around N$37,000 (US$2,600). Servicing of informal settlements is generally financed by the MURD or local authorities.
79. According to stakeholder interviews.
80. For this CPSD, only limited engagement with the large mortgage banks was possible. Further discussion is required to determine whether mortgage securitization is seen as a useful initiative to free up further down-market lending. It is not yet clear whether a secondary mortgage market institution or securitization of portions of banks' mortgage loan books could be useful in this context.
81. According to stakeholder interviews.

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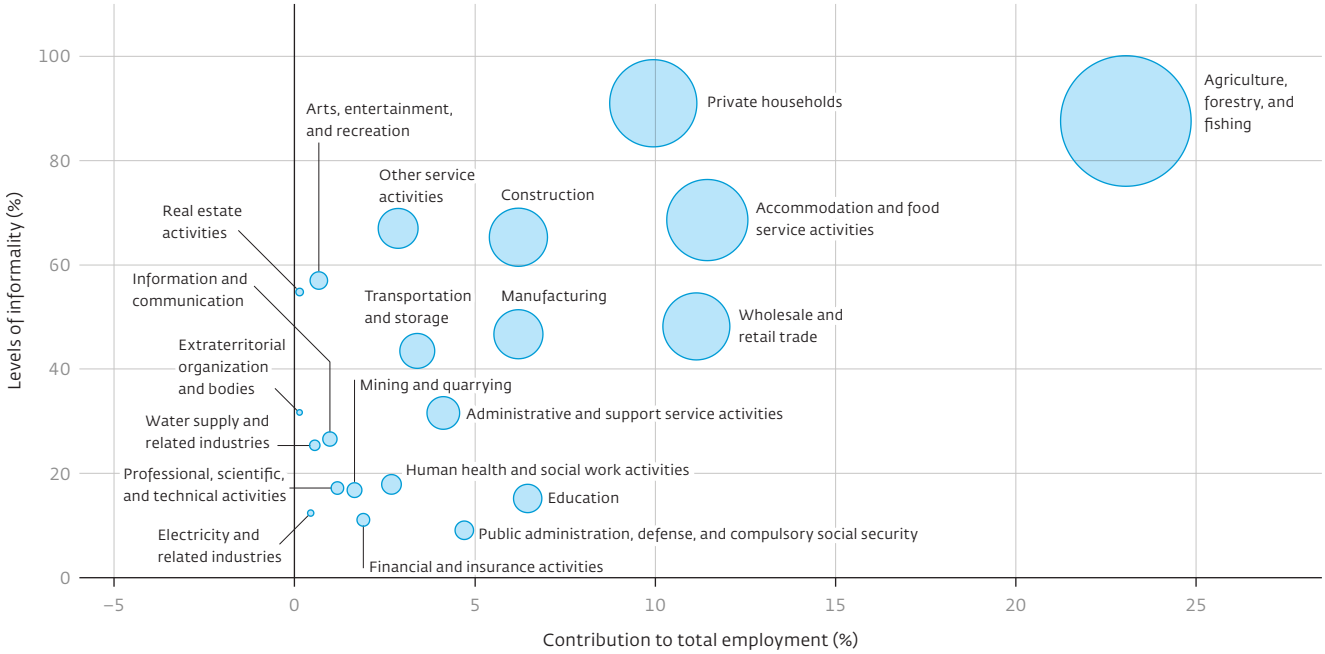
APPENDIXES

APPENDIX A INFORMALITY IN NAMIBIA

The informal sector employs about 57.7 percent of the employed population and is primarily concentrated in rural areas. According to the 2018 Namibia Labour Force Survey, 41.8 percent of those living in urban areas are employed in the informal sector, compared to 78.9 percent in rural areas. The sectors with the highest rates of informality were households (91 percent), agriculture, forestry, and fishery (87.6 percent), and accommodation and food service activities (68.6 percent). The sectors that absorb the largest amounts of employment are the sectors with the highest shares of informality (figure A.1).

Women are more likely to be employed in the informal sector, and there is better gender parity in labor force participation rates in rural areas. Women are 6.5 percentage points more likely to be employed in the informal sector than men. The gender gap in labor force participation is larger in urban areas than rural areas. In urban areas, there is a 5.9 percentage point difference between male labor force participation (78.4 percent) and female labor force participation (72.5 percent). This compares to a 2.4 percentage point difference between male participation (67.5 percent) and female participation (65.1 percent) in rural areas. Women largely work in agriculture, forestry, and fishing (21.2 percent of employed women), in accommodation and food service activities (17.5 percent), and in households (14.2 percent).[1] The recurring droughts have been particularly challenging for women, given that many women are subsistence farmers, and given that women tend to be responsible for household's food production and management. Droughts also force women to travel further distances to secure water.[2]

FIGURE A.1 Level of informal employment by sectors



Source: NSA 2019.

APPENDIX B RATIONALE FOR SECTORAL DEEP DIVES

The energy sector was chosen for this Country Private Sector Diagnostic because Namibia has some of the highest levels of solar irradiation in the world and excellent wind resources, and hence is well positioned to play an important role in the clean energy transition. Strengthening renewable energy will have multifaceted benefits. First, it will reduce Namibia's reliance on South Africa for electricity—thereby improving supply, reducing tariffs, and making it easier for households and businesses to connect to the grid—and will help expand off-grid generation in rural areas. Second, based on global estimates, the sector has substantial potential for large-scale job creation. The US Bureau of Labor Statistics has forecasted that the two fastest-growing jobs through 2026 will be solar installers and wind technicians, with growth rates of 105 percent and 96 percent respectively.[3] Not only do wind and solar energy create jobs, but the subsectors also have better gender labor dynamics than conventional energy subsector. In the United States, for example, women hold 32 percent of renewable jobs, compared with 21 percent of fossil fuel jobs.[4] Third, renewable energy has an important role to play in reducing a key cross-cutting constraint—water shortages. Namibia is home to one of the first-ever fully solar-powered desalination plants, which turns water from the Atlantic Ocean into potable water. In addition to increasing water supply, the plant offers other benefits: compared to conventional systems, its lifecycle costs are 70 percent lower because there are no energy costs; and its emissions are drastically reduced since no fossil fuels are required.[5] Finally, in the longer term, Namibia could become a leading regional exporter to the Southern African Power Pool, of which Namibia is a member, and could also become a global competitor for green hydrogen.

The agribusiness sector was selected given the urgent need to build climate-smart agriculture, increase productivity, and diversify production in labor-intensive crops. Although livestock accounts for just over half of all agricultural output in Namibia and 90 percent of export earnings, the subsector is among the least labor intensive within the agricultural sector. The 2019 drought—the worst in 90 years—saw an estimated 90,000 livestock deaths (by September 2019).[6] While there are strong growth prospects to enhance investments and productivity in the sector, particularly in horticulture, there are critical challenges as well. First, the country's vulnerability to climate change impacts is increasing. Second, access to arable and productive land is inequitable. Some 70 percent of commercial agricultural land is owned by a small minority, [7] while most smallholder producers are confined to communally owned land, which is highly degraded, overgrazed, and exposed to bush encroachment. Third, communal and emerging farmers have limited access to finance.

Finally, the third sectoral deep dive focuses on unlocking opportunities in housing, as demand for affordable housing has far outstripped supply.[8] In the early 1990s, about one-fourth of Namibians lived in cities. Today, nearly half of the population lives in cities, and by 2050 the share will increase to three-fourths. Formal housing delivery is not keeping pace with demand, resulting in a rapid growth of informal settlements. There is an estimated housing backlog of around 300,000 units (with an estimated backlog of 84,000 units just in Windhoek).[9] Approximately 15,000 new households require accommodation each year in urban areas, and if the backlog is to be eradicated within a decade, an additional 30,000 housing units will be required annually, creating demand for about 45,000 new housing units per year. This need represents a huge economic opportunity. The housing sector creates spillovers across other sectors along the value chain.

APPENDIX C HIGH LAND DEGRADATION COSTS IN NAMIBIA

Land degradation encompasses the loss of the productive capacity of land due to a combination of human-induced factors such as soil erosion, acidification, nutrient leaching, and compaction. In Namibia, land degradation is estimated to cost 19 percent of gross domestic product. The annual cost of land degradation per capita is US$797.40—the highest in analysis done by the World Bank covering 19 Sub-Saharan African countries.[10] As a comparison, the average cost for the 19 countries was US$107.40, and the second highest after Namibia was Botswana, with a cost of US$188.20 (table C.1).

TABLE C.1 Integrated landscape management indicators for selected African countries

	Cost of land degradation as a share of GDP (%)	Annual cost of land degradation per capita (US$)	Benefit-cost ratio of integrated landscape management
Benin	8	58	4
Botswana	3.2	188.2	6.2
Burkina Faso	26	126.3	5.7
Central African Republic	40	166.8	3.6
Eswatini	2.9	95.9	4
Ethiopia	5.3	40.9	4.3
Gambia	9	42.7	8.5
Ghana	6	61	4.8
Guinea	12	53.8	4.1
Kenya	4.5	34.4	4.1
Lesotho	3.6	28.7	6
Madagascar	23	87.5	3.6
Malawi	6.8	18.3	3.9
Namibia	19	797.4	3.7
Niger	3.9	29	6
Senegal	8.4	80.8	4.5
Sierra Leone	19	67	4.8
Tanzania	13.7	40.1	3.8
Zimbabwe	6.3	31.2	3.2
Minimum	2.9	18.3	3.2
Average	11.8	107.8	4.7
Maximum	40	797.4	8.5
Standard deviation	10.1	173.4	1.3

Sources: GM 2018; IFPRI and ZEF 2016.
Note: For the indicator "land degradation cost as fraction of GDP: white = 0%, blue = 50%, and navy blue = 100%. For the indicators "annual cost of land degradation per capita" and "benefit-cost ratio of integrated landscape management": white = low, blue = medium, and navy blue = high.

APPENDIX D EXAMPLES OF SUPPORTING COMMERCIAL SMALLHOLDER FARMERS

Cross-country examples of commercially driven smallholder farmer links programs

Cross-country regional smallholder farmer links programs offer examples and lessons for Namibia. Specifically, they raise the possibility of expanding these programs in the south and of developing similar programs targeting smallholder farmers in the North; the goal is to strengthen farmers' capacity and resilience and improve their commercial links with larger buyers and distributors. In Zambia, for example, the Amatheon Outgrower program uses its commercial farms as a nucleus to support and trade with thousands of smallholder farmers. By utilizing the newly constructed processing and storage facilities, Amatheon guarantees the highest hygiene and food safety standards for all products grown by smallholder farmers. The Amatheon program has injected over US$1 million into the local economy and has reached 10,000 farmers.[11] By incorporating smallholders into the rural value chain, Amatheon has helped build vibrant outgrower networks, fostered entrepreneurship, stimulated local productivity, and diversified incomes for smallholder farmers, while also increasing product diversification.

Other examples come from Tanzania and Ghana. In Tanzania, Kilombero Plantations Ltd. (KPL) runs a rice production and milling operation on 5,800 ha and provides a market for local smallholder rice farmers. In collaboration with the Kilombero Sugar Company (KSC), a sugarcane production and processing operation, KPL has established and is driving a technology-transfer program for smallholder farmers. In addition, KPL has introduced a system for rice improvement using village farmer groups, and KSC has provided training and technology transfer in cooperation with the Ministry of Agriculture. In Ghana, the Global Agriculture Development Company operates a modern hub farm, with an initial focus on rice production; the resources and infrastructure of the hub farm are leveraged to provide smallholder farmers with critical production services, inputs (including high-yield seeds), and access to end-consumer markets in high-growth food categories. Since its inception, the program has developed six to eight products packaged under a common brand, built a solid 15–20 percent market share over a six-year period, and established robust consumer demand and strong growth for localized products through continuous market testing.

A regional cross-country study shows that overall, Namibia's agricultural competitiveness falls in the medium category, while agricultural productivity falls in the low category (table D.1).

TABLE D.1 Cross-country agricultural productivity and competitiveness matrix

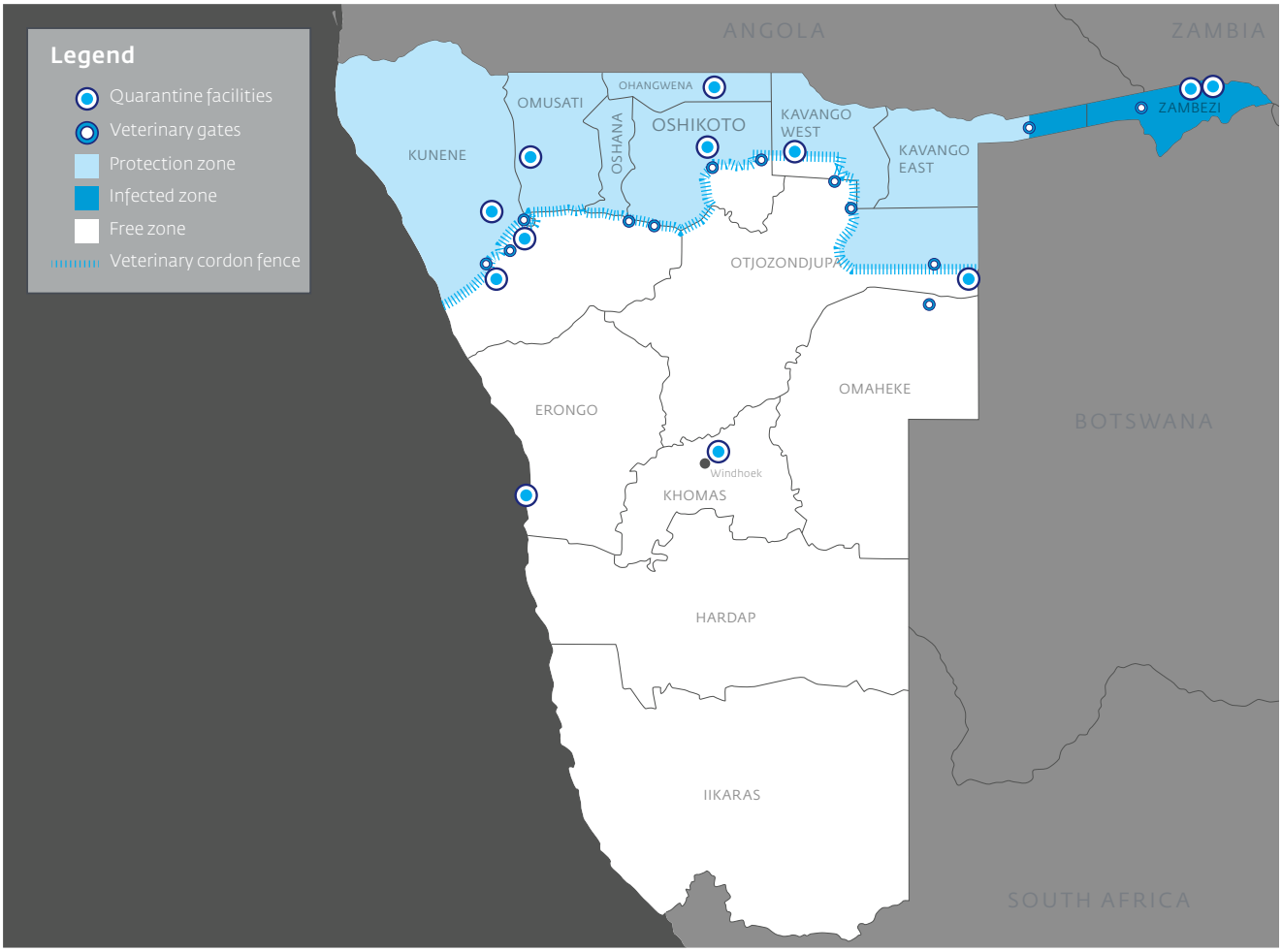
AGRIBUSINESS COMPETITIVENESS	AGRICULTURAL PRODUCTIVITY: Low	AGRICULTURAL PRODUCTIVITY: Medium	AGRICULTURAL PRODUCTIVITY: High
Low	Algeria, Burundi, Chad, Congo, Dem. Rep., Djibouti, Guinea, Liberia, Mauritania, São Tomé and Príncipe, Seychelles, Zimbabwe	Chad, Central African Republic, Togo	Burkina Faso, Niger
Medium	Mozambique, Mali, Botswana, Lesotho, Madagascar, **Namibia**, Senegal, Tunisia, Uganda	Côte d'Ivoire, Egypt, Arab Rep., Gabon, Gambia, The, Malawi, Nigeria, Tanzania, Zambia,	Benin, Cameroon, Ethiopia, Ghana
High	Mauritius, Morocco	South Africa	Kenya, Rwanda

Source: Babu and Shishodia 2017.

APPENDIX E CONTROLLING FOOT-AND-MOUTH DISEASE IN NAMIBIA

Map E.1 shows Namibia's status in terms of the risk and prevalence of foot-and-mouth disease in livestock. The veterinary cordon fence (VCF), a barrier to prevent livestock and wildlife movements from the protection zone, divides the country into two parts: the area north of the VCF, commonly referred to as the Northern Communal Area (NCA), and the area south of the VCF. No live cattle or untreated meat products can pass from north of the fence to south of the fence. There are three foot-and-mouth disease (FMD) risk management zones, namely the infected zone, the protection zone, and the free zone. The infected zone's status is mainly due to the risk presented by the presence of free-roaming African buffalo.

MAP E.4 Foot-and-mouth disease zones



Source: Directorate of Forestry, Forest Monitoring and Mapping.

The protection zone has had infrequent FMD outbreaks. Official FMD vaccination is practiced in parts of the zone bordering high-risk neighboring countries and game management areas. The zone below the VCF is free of FMD without vaccination being practiced, and it was officially recognized as such by the World Organization for Animal Health in 1997. In fact, it has been free of FMD since July 1965. The VCF has a huge impact on the marketing of livestock and livestock products from the north.[12]

The 2015 FMD outbreak was the worst in 40 years. In total, 14 regions in the NCAs reported FMD cases between January to June 2015. Getting the outbreak under control cost N$180 million (about US$13 million).[13] With European Union funding of N$280 million, there are plans to move the VCF. The move would allow farmers in a number of locations—Kavango East and West, Mangetti, Ombuga, areas south and west of Oshikoto and Omusati, and parts of southern Kunene south, including Sesfontein and Fransfontein—to be included in the area south of the VCF. The move will be complemented by investments in quarantine facilities and abattoirs.

Notes

1. NSA (2019).
2. World Bank (2021).
3. Torpey (2018).
4. IREA (2019).
5. For more information on how Namibia is using solar energy to make clean water from the Atlantic Ocean, see Solar Water Solutions' website at https://solarwatersolutions.fi/en/article/in-drought-faced-namibia-clean-water-is-now-made-from-the-atlantic-ocean-using-solar-energy/.
6. SASSCAL (2020).
7. World Bank (2021).
8. Remmert and Ndhlovu (2018).
9. Nkhonjera (2020).
10. World Bank (2020).
11. For more information on Amatheon Agri's "Outgrower Progamme," visit their website at https://amatheon-agri.com/sustainability/outgrower-programme/.
12. Namibia National Farmers Union (2019).
13. Prinsloo (2019).

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