

CHAPTER 5

LONG-TERM FINANCING FOR SUSTAINABLE DEVELOPMENT IN AFRICA



Africa is at a critical development juncture. It seeks to accelerate economic growth to meet national development goals in line with the Sustainable Development Goals (SDGs) and the African Union's Agenda 2063, and to do so in a financially and environmentally sustainable way. The cost to achieve the SDGs by 2030 in Africa is estimated at about \$1.3 trillion a year, according to the United Nations. That could increase to \$19.5 trillion as a result of population growth—projected to be 43 per cent over 2015–2030. African countries' capacity to achieve the SDGs by 2030 is estimated, on average, at 53 per cent of what is needed—particularly for the goals to end extreme poverty, hunger and inequality; tackle climate change and build resilient infrastructure.

A central challenge for Africa to meet the SDGs and achieve sustainable and inclusive development is to mobilize the investment needed in key sectors such as health, energy, transport, construction, agriculture, education and manufacturing. Large investment gaps exist, particularly in sectors such as infrastructure (even while that sector has immense potential to drive economic growth).

Another challenge is to deliver urgently needed climate change adaptation—at the same time that infrastructure expands while urban environments grow. Africa has “extreme vulnerability” to climate change, which threatens to undermine the continent's major development gains and gives it a high stake in meeting climate challenges (UNECA, 2015; World Bank, 2018). An estimated \$18–\$30 billion a year will be needed over the next two decades for climate action and climate change adaptation in Africa, with nearly \$1 trillion worth of investments and projects ready to be financed. One widely advocated option is to increase the role of the private sector in such investments, especially given the low levels of investment by governments and bilateral donors (in official development assistance, or ODA). The availability of long-term finance is a key factor in whether this can be done.

Encouraging governments to mobilize domestic resources and private sources, ensuring more efficient international development financing, and leveraging climate financing will help bridge the substantial development financing gaps. Advancing the private sector and mobilizing private capital presents a transformative approach for achieving development goals.

And development banks at the multilateral, regional and national levels can play key roles to help meet the infrastructure challenge of African economies.

To translate these aspirations into action is a long-term goal. This chapter examines innovations in long-term financing and how the private sector can transform sustainable development in Africa. The chapter focuses on three areas of recent innovation: long-term financing instruments for climate risk, such as sustainable bonds for private sector financing; innovations in public-private investment in infrastructure; and the role of development banks in long-term financing of the private sector to maximize sustainable and inclusive growth

in Africa. The chapter discusses in detail Africa's participation in green bonds. The chapter also examines different funding sources and outlines the key issues and obstacles for private sector investment in African infrastructure. The chapter then briefly examines how development banks (national, regional and global) have encouraged private investment, including in infrastructure. The chapter concludes with policy implications for deepening Africa's participation in sustainability bonds, encouraging private investment in infrastructure, and enhancing the role of development banks in financing private sector development and sustainable development on the continent.

SUSTAINABILITY BONDS

Green, social and sustainability bonds are bonds whose proceeds are exclusively applied to eligible environmental or social projects, such as climate change and adaptation or socially responsible goals.¹ The issuance of these bonds must comply with frameworks embedded in the Green Bond Principles (GBP), Social Bond Principles (SBP) and Sustainability Bond Guidelines (SBG). This emerging asset class has grown exponentially to more than \$6 trillion in the past decade. The integration of environmental, social and governance (ESG) considerations and sustainability increasingly attracts environmentally and socially responsible investors. It also offers Africa a unique opportunity to mobilize private capital for financing infrastructure development and large-scale economic activities.

THE GLOBAL LANDSCAPE

Before 2007, these types of bonds had essentially no market. But by 2019 the combined value of issuances for the green, social and sustainability bond markets amounted to \$321 billion, a record increase of 52 per cent from 2018, and it was forecast to reach \$500 billion in 2020 (Environmental Finance, 2020). About 37 per cent of green, social and sustainability bond issuances were directly aligned to the SDGs, particularly SDG 7, affordable and clean energy; SDG 11, sustainable cities and communities; and SDG 13, climate action. While all three markets saw strong growth in 2019, the green bond market recorded milestones, with total issues valued at \$257.7 billion, up from \$170.6 billion the previous year. Environmental Finance, a news and analysis service, projected the global value of green bond issuances would reach \$350 billion in 2020. The growth of the sustainability

bonds market was also impressive, with issuances more than doubling to \$48 billion in 2019 from \$18 billion in 2018. The social bonds market saw issues of \$17 billion in 2019, up from \$14 billion the previous year (Environment Finance, 2020). In emerging markets, green, social and sustainability bonds issued were valued at about \$57 billion, with the green bonds market accounting for about 80 per cent. Corporates and financial institutions dominate as issuers in the global green and sustainability bonds markets, while agencies issue a large share of social bonds (FIGURE 5.1).

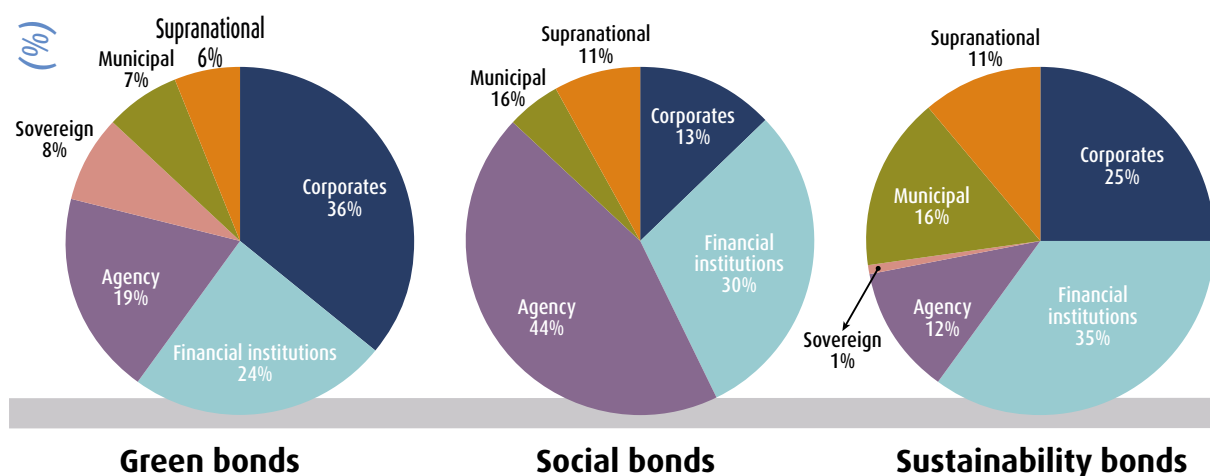
THE GREEN BOND MARKET

As the economic cost of climate change-related disasters grows, countries are exploring new adaptation and resilience measures, opening new opportunities for investment. For instance, the investment opportunity to address climate change in emerging market cities is estimated at \$29 trillion by 2030 (IFC Analysis 2018). The key sectors of such an investment opportunity include green buildings, electric vehicles, public transport infrastructure, climate-smart water, renewable energy and municipal solid waste management. The global market for green bonds emerged in 2007, with the issuance of a €600 million AAA investment-grade green bond from the European Investment Bank (EIB). The market began to flourish in 2013 with the all-time record of one hour from issuance to sale for International Finance Corporation's \$1

billion green bond. In 2019, global green bond and green loan issuance reached \$257.7 billion, an increase of 51 per cent from 2018, representing about 2.5 per cent of the \$100 trillion global fixed income market (CBI, 2019).

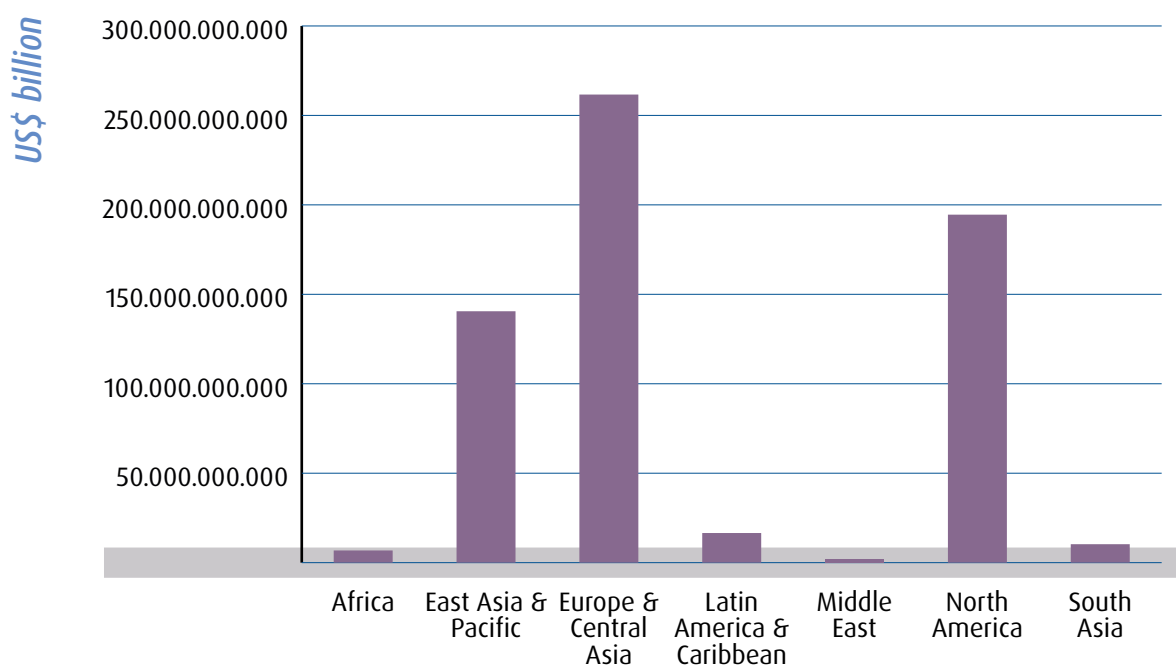
The largest issuing countries in the global green bonds market in 2019 were the United States (\$59 billion), France (\$31 billion), China (\$27 billion), Germany (\$22 billion) and the Netherlands (\$16 billion). Among emerging and developing economies, the most active participants were China and India, making East Asia and the Pacific the third largest regional issuer of green bonds and first among emerging and developing regional markets (see FIGURE 5.2). The market's development has been supported by international financial institutions (IFIs), which are among the top global issuers and are an important source of finance for developing countries for green and social projects. Top issuers include the World Bank's International Finance Corporation (IFC) and International Bank for Reconstruction and Development (IBRD), the European Investment Bank (EIB) and a few bilateral development institutions. Approximately 44 per cent of these funds have been applied to renewable energy, 25 per cent to green transport, and the other 30 per cent to green projects in land management, water and urban environments (World Bank, 2018). IFIs also actively engage private investors, including through blended finance and technical advice to issuers.

FIGURE 5.1 SUSTAINABILITY BOND ISSUERS, 2019



Source: Based on data from Environmental Finance (2020).

FIGURE 5.2 GREEN BOND ISSUANCES BY REGION, 2007–19



Source: Based on Climate Bond Initiative Database (2019).

As the market and investor base have grown, issuers have increasingly diversified away from major IFIs and towards an increasing number of sovereign and corporate issuers. Sovereign issuers are typically financing the greening of public infrastructure, including energy, water and transport. The biggest sovereign issuers in 2019 included the Netherlands (\$6.68 billion), France (\$5.93 billion) and North Rhine-Westphalia state in Germany (\$2.76 billion). The increasing diversity of sovereign issuers includes major emerging economies such as Brazil, China and India, as well as smaller countries such as Fiji, Seychelles and Thailand.

Corporate issuance has also grown, particularly in green energy, where leading companies have acted repeatedly. Among the top 10 global issuers are TenneT, a leading European electricity transmission company, and Engie, a European-listed company investing in green power generation, which has issued green bonds several times to finance offshore wind farms. Engie's green bond issuance in 2019 was valued at \$4.66 billion (Environmental Finance, 2020). Transparency and governance frameworks for using bond

proceeds and a preference for having sustainable bonds listed in secondary markets have crowded in conventional private investors. These have included institutional investors such as pension funds and life insurers, which have been major investors in recent green and social bond issues, adding further dynamism to the growth of the market.

“ . . . pension funds and life insurers, which have been major investors in recent green and social bond issues , adding further dynamism to the growth of the market ”

THE GREEN BOND MARKET IN AFRICA

The African green bond market emerged in 2010. South Africa and the African Development Bank (AfDB) took the lead, followed by Morocco, Nigeria and Seychelles. AfDB made its debut in 2013 with a AAA investment-grade green bond issuance of \$500 million. Between 2012 and 2018, cumulative issuances of green bonds by South Africa reached \$1.4 billion; Morocco, \$356 million; Nigeria, \$30 million and Seychelles, \$15 million. The issuers of green bonds in Africa were largely financial institutions, non-financial corporates, government agencies, sovereigns and municipals. In South Africa, key players in the issuance of green bonds include the Industrial Development Corporation, Nedbank and ACWA Power. Among sectors and projects for which proceeds were earmarked, renewable energy predominated (52 per cent), followed by

building (13 per cent) and transport (11 per cent). According to the Climate Bonds Initiative, cumulative green bond issuances in Africa reached \$2.6 billion as of September 2019, with the 2019 issuances totalling \$898 million. (See **BOX 5.1** for examples of recent bonds from leading countries in Africa.)

In Kenya, the Nairobi Securities Exchange is leading the development of a green bond programme with an accompanying regulatory and governance framework for issuing unlisted or listed green bonds in Kenya in conjunction with the National Treasury and Planning ministry, Central Bank of Kenya, Kenya Bankers Association, Capital Markets Authority and other private financial partners. Steps include training a pool of Kenya-based licence verifiers and seeking to issue a benchmark sovereign green bond. These partners have

BOX 5.1 EXAMPLES OF GREEN BONDS PROGRAMMES IN AFRICA

SOUTH AFRICA'S JSE GREEN BOND PROGRAMMES (2014–2017)

South Africa has supported green bond issuances through the Johannesburg Stock Exchange (JSE), which has a dedicated sector for green bonds. Eligibility to be included in the JSE Green Bond Index requires an independent review of best practice methodology, including disclosure and independent monitoring of the use of proceeds. Examples include Johannesburg's \$137 million green bond programme in 2014, with proceeds financing projects that reduce greenhouse emissions, and Cape Town's \$74 million green bond programme in 2017 to finance water infrastructure.

In 2018 in the financial sector, South African-based property investment holding company Growthpoint Properties issued the first listed green bonds in South Africa, and Bank Windhoek issued the first in Namibia. Both were to finance projects to reduce environmental vulnerability and address climate change issues.

NIGERIA'S SOVEREIGN AND NSE GREEN BOND PROGRAMME (2017–2019)

In December 2018 Nigeria established governance frameworks for subnational and corporate issuers of green bonds listed on the Nigerian Securities and Exchange Commission. There had also been benchmark issues including, in 2017, when the government of Nigeria issued a naira-denominated sovereign green bond for \$29 million with a maturity of 5 years, listed on the Nigerian Stock Exchange. The proceeds are for forestation, environmental and renewable energy projects. The issuance was supported by a wide range of development partners. Although it was to be the first of a number of sovereign green bonds, no further issuances have been completed. In 2019 Access Bank, one of Nigeria's largest banks, issued a corporate green bond for \$41 million. Also issued in naira, it is listed on the FMDQ securities exchange, the largest securities exchange in Nigeria. The bond was fully subscribed and certified under GBP (Green Bond Principles) standards.

MOROCCO'S BMCE \$45 MILLION GREEN BOND (2016)

The Moroccan commercial bank BMCE is a financing facility for private sector companies investing in green energy projects. A one-stop shop for financing and advice, it has financed transport, manufacturing, property development and small-scale stand-alone energy projects. In 2016, its parent company BMCE Bank of Africa raised \$45 million to finance the facility, issued in a public offering with the approval of the Moroccan Capital Markets Authority. In governance the BMCE was GBP compliant and has specified minimum energy savings and amounts of avoided emissions for projects to be eligible.

KINGDOM OF MOROCCO \$118 MILLION GREEN BOND FOR SOLAR POWER (2016)

This bond, issued to finance three solar energy projects in Morocco, was GBP certified. It was issued in local currency and had a sovereign guarantee from the Kingdom of Morocco. The bond was completed through private placement to local banks with the authorization of the Moroccan Authority of Capital Markets.

Source: International Finance Corporation; Financial Sector Deepening (FSD) Africa.

also developed a financing facility that pools green assets for securitization, an interesting innovation for domestic markets (LSEG Africa Advisory Group, 2019a, 2019b).

Green bond issuances in Africa are limited in currency and tenor. Globally more than 90 per cent of green bonds are issued in hard currency, with the US dollar and euro dominating. Only a handful have been issued in the currencies of low-income or lower middle-income countries. In Africa, four green bonds were issued in South African rands, and others more recently in Moroccan dirhams and Nigerian naira. The tenors of bonds issued in Africa are also limited. Global markets since 2007 have generally seen bond maturity lengthening from an average of 5 years in 2007–2013 to consistently more than 10 years by 2019, with several bonds dated as long as 25 years. For developing countries the pattern is mixed, with South and West Asia's tenors being among the longest globally, while African bonds have the shortest, averaging 6–7 years.

DEEPENING AFRICA'S PARTICIPATION IN SUSTAINABILITY FINANCING

Despite global, regional and national initiatives aiming to scale up sustainability financing in Africa, efforts at raising capital and financial investments have yet to accelerate the development of environment-friendly, socially responsible and climate-resilient economies on the continent. First, Africa's engagement in bond capital markets is fairly weak—both in developing domestic markets and in issuing bonds in international capital markets. Bond markets, which provide a deep investor base and an established regulatory and legal framework for issuances, are a prerequisite for developing such new instruments as green and social bonds. Second, the needs of the region, particularly for green infrastructure that requires long-term finance, are mismatched with the current average tenor of green bonds. So, infrastructure projects need to be repeatedly refinanced during their lifetime, exposing them to major risks of unfavourable changes in currency and interest rates.

These factors put Africa in an unattractive position compared with developing countries in, for example, Asia and Latin America, where investment risks are lower, including risks of foreign exchange, political stability and macroeconomic stability. Many investors avoid foreign currency risk in volatile emerging market currencies. The volatility of some African currencies, including in Ghana, Nigeria and Zambia, has

hardened this aversion. Investors' most common response to such foreign exchange risk is to require that securities be denominated in hard currency—thus transferring the risk to the issuer, possibly with negative consequences for the issuer's debt sustainability (Tyson, 2015a, 2018; PWC, 2019).

These risks are difficult to hedge—in some cases, impossible. Foreign exchange markets for hedging instruments are either absent or illiquid.² Political risk insurance is expensive and cumbersome, and making claims is difficult. The Multilateral Investment Guarantee Agency, for example, has reportedly paid on only seven claims in the past decade (Tyson, 2018). In addition, there are insufficient “bankable” green and social assets or projects suitable for bond financing. This is common in infrastructure, where projects in Africa take, on average, six years to plan and up to a decade to bring into operation. Financing early-stage project planning and construction through bond markets is particularly difficult because investors avoid the higher risk during development and prefer mature assets with income flows (Tyson, 2018).

These issues have resulted in private non-foreign direct investment cross-border capital flows to Africa being dominated by high risk-high return investors, such as private equity funds, and investors with a longer-term investment horizon, such as sovereign wealth funds or non-traditional bilateral investors (for instance, China). Sovereign wealth funds and Chinese investors have made major investments in infrastructure and industrialization, supporting economic growth.

“Sovereign wealth funds and Chinese investors have made major investments in infrastructure and industrialization, supporting economic growth”

These issues of risk are also acute for socially responsible and international institutional investors. Such investors have either high governance standards for green and social goals or fiduciary and regulatory responsibilities that limit the riskiness of assets in which they can invest—effectively excluding them from investing in green bonds in many African countries.

Mitigating these risks is essential to crowding more investment into the African sustainable bond market. Deepening Africa’s participation in sustainable bonds will then require closing the gap in investor appetite for African green and social assets, developing and enhancing domestic frameworks for them and engaging African issuers in capital markets.

CLOSING THE GAP ON INVESTOR APPETITE

Risk pooling through funds, and innovation in asset classes could be important approaches to mitigating risk for African market investors. Institutional investors (pension funds and insurance companies) could find these methods especially helpful because they have huge pools of capital, a risk appetite allowing long-dated assets and a need for assets matching their long-term liabilities. Private investors typically manage investment risks through a portfolio that diversifies risks across many assets and so hedges risks. This increases the risk appetite of investors.

The development of hedging instruments tailored to the risks private investors face in bond markets offers another valuable approach to mitigating risk. IFIs and development finance institutions have supported innovations relating to foreign exchange. The finance institutions provide equity to seed-fund instruments for pooling hedging risk and allowing specialized hedging instruments so investors can benefit from portfolio

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diversification. An example is the currency-exchange fund (TCX), which was seed-funded by a consortium led by FMO, a Dutch entrepreneurial development bank, and provides foreign exchange and interest rate hedging futures. Recent scaling up of TCX promises to provide hedging instruments more widely. Further TCX-type hedge providers in other risk dimensions—such as political risk, credit risk and interest-rate risk—would extend such ways of crowding in private investors (Tyson, 2018).

DELIVERING ON DOMESTIC FRAMEWORKS

Regulatory and governance frameworks for green, social and sustainability bonds are critical to developing the market. Several African governments have recognized this, led by the region’s leading financial hubs in Kenya, Morocco, Nigeria and South Africa. They have introduced green bond governance frameworks, including independent certification and monitoring of proceeds, that align with international best practice. The stock exchanges in Kenya, Morocco, Nigeria and South Africa have established green bond segments, an important component of a country’s green bond market. Such segments give investors, issuers and third parties transparent governance and a specialized avenue for listing and investing, and they concentrate expertise in bond pricing, analysis and secondary market trading. These well-grounded initiatives should accelerate market deepening in social and green bonds.

Regulatory incentives could also be introduced to increase the attractiveness of green and social bonds. For example, the People’s Bank of China (PBoC) allowed green bonds as eligible collateral for central bank operations (BOX 5.2). Such measures could even provide preferential treatment of green bonds as collateral and include central banks holding green assets as part of macroprudential frameworks (several banks are considering this). Both measures would encourage the development of the investor base.

Finally, a stronger pipeline of projects is needed. This issue is not unique to sustainable bonds but applies to broader asset classes, particularly infrastructure. A full discussion of the difficulties of strengthening a pipeline is beyond the scope of this chapter (see Tyson, 2018). Even so, developing national infrastructure capacity should include green bond issuance, and green finance has provided an attractive and liquid source of finance for national infrastructure strategy.

BOX 5.2 CHINA BEST PRACTICE SUPPORT FOR GREEN BOND MARKETS

The Chinese market's development is of interest to Africa because it has been particularly successful in developing domestic markets for local currency green and social bonds. Bonds have been issued on the China Interbank Bond Market and the Shanghai and Shenzhen stock exchanges. All domestic bonds have been issued in local currency. Sectors financed by green bonds include transport, water and energy.

Social bonds make up about 10 per cent of bonds issued. For example, in 2016, a social impact bond issued by the Shandong Yi Nan County targeted poverty alleviation, and in 2018 the Chinese Construction Bank issued a bond to raise funds for affordable housing, education and medical projects via the bank's small and medium enterprise and microfinance activities.

Policy measures led by the People's Bank of China (PBoC) have supported the development of this market. In the early stages, there

were concerns of "greenwashing"—using proceeds for "clean" coal projects that did not meet international standards. In 2015, the PBoC issued green bond guidelines, and financial regulators issued reporting requirements for listed bonds. These included monitoring progress in allocating the proceeds to green projects and quarterly and annual information disclosures on the use and impact of proceeds. Today 85 per cent of bonds by number and 92 per cent by value comply with these standards (CBI, 2018a).

PBoC policy also encouraged the market's development. In 2018 it announced that it would allow eligible collateral for its lending facilities to include green bonds and green loans. It has also enacted macroprudential regulations relating to green risks.

The China Securities Regulatory Commission (the regulator) presides over public bond issuances of listed companies. Both of the stock exchanges on which bonds are listed

have issued standards for disclosure and governance for listed green and social bonds, as well as broader environmental, social and government requirements for listed companies and other measures.

The market has broadened to use different types of financing structures beyond plain vanilla bonds. Since 2016, asset-backed securities (ABS) have been issued. In support the China Securities Regulatory Commission issued Q&A's to deepen knowledge about the products and allowed government subsidies to be used for the underlying assets in renewable energy, green buildings and electric vehicles. Subnational bodies have also issued ABS, including special-purpose vehicles for local government. Five provinces (Guangdong, Guizhou, Jiangxi, Xinjiang and Zhejiang) have begun pilot studies for the issuance of asset-backed securities.

Source: CBI, 2018a.

DEEPENING NETWORKS WITH INTERNATIONAL CAPITAL MARKETS

Global financial hubs have been a critical factor in the growth of the sustainable bond market. Such hubs and their associated networks have provided established and sound regulatory and legal frameworks for primary issuances, specialist exchanges for public offerings and secondary trading and access to the investor base via private financial institutions that structure and market such products. For developing African sustainable bonds, African issuers must become integral to these hubs and networks.

Circulating greater information and increasing familiarity with African economies and assets can only help raise the profile of Africa as a potential investment destination. The sale of African Eurobonds has already led to extended analysis laying the groundwork for further investment. It has familiarized investors with sovereign risks in Africa, and the public listings provide transparent pricing benchmarks. Global financial centres are setting up support for green finance in Africa.

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For example, the London Stock Exchange has established an initiative to support green bonds in Africa.

Innovative thinking is needed about asset classes and financing structures for bonds going beyond conventional sectors such as infrastructure. Africa has the potential to

deliver a strong pipeline of assets with high social returns that green investors and sustainable and responsible investment (SRI) investors want, in sectors important for the region's policy goals, including achieving the SDGs. Recent bonds with new types of underlying assets illustrate such innovations (BOX 5.3).

BOX 5.3 INNOVATION IN UNDERLYING ASSET CLASSES IN AFRICA

SEYCHELLES \$15 MILLION "BLUE BOND" (2018)

In 2018, Seychelles issued a sovereign "blue bond" for \$15 million to support marine conservation and fishery projects. The bond, financed by private institutional investors, was the first green bond earmarked for marine conservation. Although the amount raised was small, the bond illustrates the ability of policymakers to partner with development agencies and private institutional investors to deliver innovative green bonds. The World Bank provided technical assistance, and the projects will be co-managed

by the Development Bank of Seychelles and a leading conservation trust. The sovereign credit risk was also partially guaranteed by the IBRD, with concessional loans to cover interest payments. Private investors included the socially responsible investor Calvert Impact Management. Mainstream institutional investors—the Teachers Insurance and Annuity Association and Prudential Financial—also participated.

KENYA AND SOUTH AFRICA \$50 MILLION RHINO BOND (2019)

The proceeds of a \$50 million five-year impact bond will be used for a black rhino

conservation project in Kenya and South Africa. The proceeds are used for conservation with targets set for increases in the rhino population. If the targets are not met the investors take losses, and if they are met the investors are paid back their capital and a coupon. The bond was arranged by Conservation Capital and the Zoological Society of London. Investors included donors and some private wealth clients with philanthropic investment goals. The bond was not GBP (Green Bond Principles) certified.

Source: World Bank, Financial Times.

INFRASTRUCTURE FINANCING

Africa's infrastructure needs are vast. According to the 2018 *African Economic Outlook* (AfDB, 2018), the continent's infrastructure needs amount to \$130–\$170 billion a year until 2025, with a yearly financing gap of \$67.6–\$107.5 billion. Global financing needs for renewable energy are estimated at more than \$22 trillion by 2050. Africa receives only 2% of the current annual global renewable energy investment of \$309 billion. Both governments and donors have invested

considerably in infrastructure. In most regions, governments have mainly funded infrastructure, but low government revenues in Africa have limited the success of this model, helping explain Africa's low investment in infrastructure. Overall, African governments are one of the largest sources of funding for infrastructure in Africa, with commitments accounting for 37 per cent of infrastructure investments in 2018. In most countries across the world, banks and bond markets

have traditionally been the intermediary between domestic private savers and private borrowers to help finance private investment in infrastructure. Recently, donors, particularly non-traditional ones, have significantly increased their infrastructure investment in Africa. For instance, according to data from the Infrastructure Consortium for Africa, China alone accounts for more than 25 per cent of all infrastructure funding in Africa (ICA, 2018). Some 80–90 per cent of the assistance China provides is in the transport and electricity sectors.

PRIVATE INVESTMENT IN INFRASTRUCTURE

Private capital is increasingly mobilized to complement government revenues and official development assistance (ODA) for financing infrastructure development. Stand-alone private investment flows into infrastructure in developing countries started growing in 2008 and surpassed loans and credits from multilateral development banks and private co-financing since 2009. But private infrastructure financing was concentrated in countries with fairly good macroeconomic and investment environments (mostly middle-income countries), and in sectors that could provide strong returns or required capital-light infrastructure (such as energy and information and communications technology, or ICT).

In Africa as in many other developing countries, the infrastructure sector does not attract much private investment and funding. Private financing accounted for only 11 per cent of infrastructure funding in Africa in 2018, though private participation made it possible to fund large-scale investment and reportedly to make efficiency gains. The energy and ICT sectors represented more than 90 per cent of private sector investment. The concentration of private sector financing in those two sectors is partly due to the heavy protection provided by guarantees from the host government or from multilaterals (ICA, 2018). Those sectors can generate enough revenue through user fees to help service debt and provide a return on investment, explaining their attractiveness to private investors and private debt providers in Africa. Africa's ICT funding gap amount to \$4-7 billion per year. Investment commitment into the ICT sector was at \$7.1 billion in 2018, mostly from private sector financing.

Except in the transport sector, where governments had the largest share, the vast majority of infrastructure funding in Africa during 2014–2018 came from international lenders and

donors (FIGURE 5.3). In the energy sector governments spent weakly compared with their overall spending (20 per cent of investment during 2014–2018), while the private sector share of investment was larger than average (67 per cent, or \$98 billion). Overall, private sector participation in infrastructure projects between 2013 and 2018 was marginal, providing only 7.5 per cent of funds.

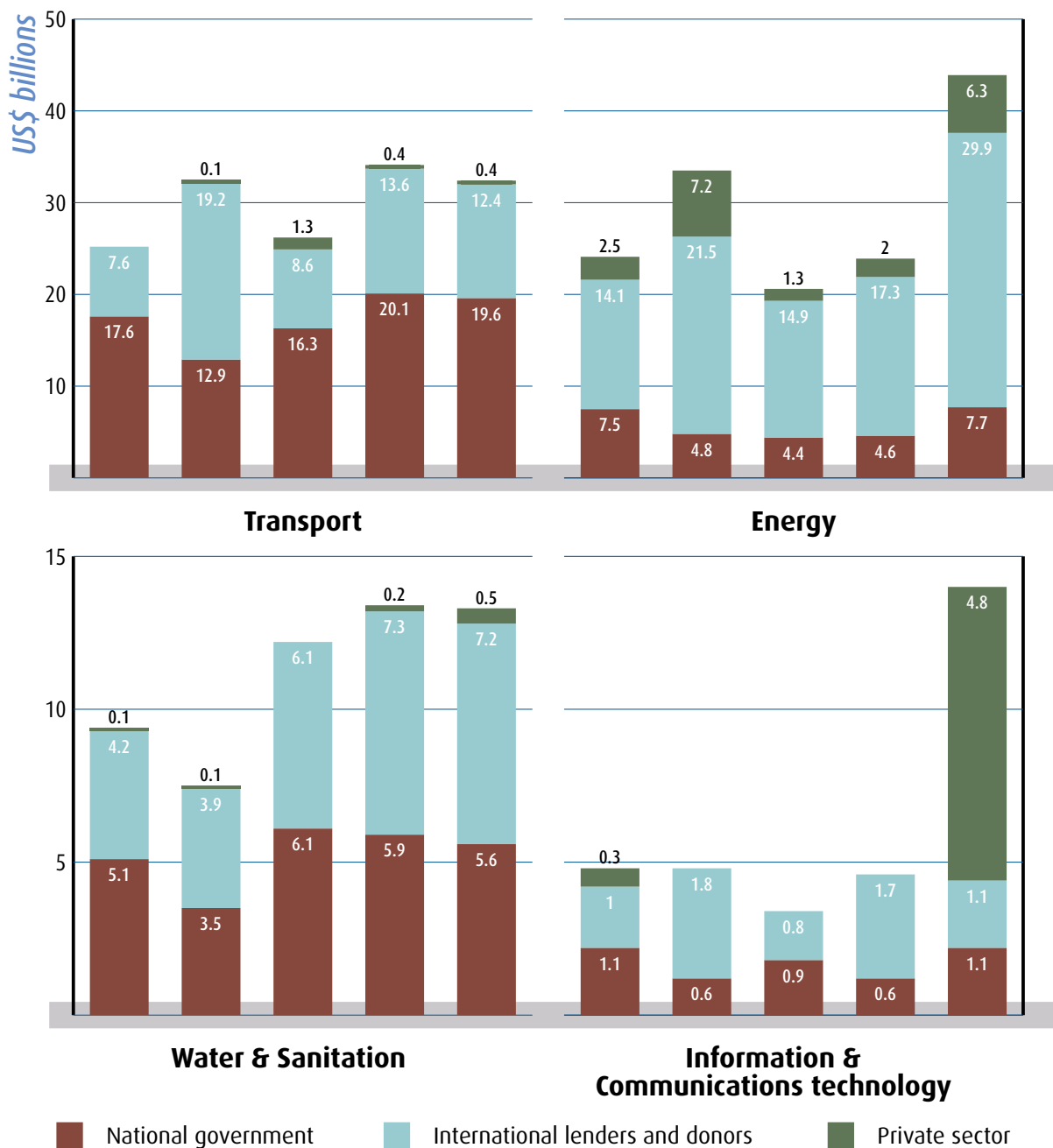
In Southern Africa, private investment is far more meaningful (FIGURE 5.4). Southern Africa receives 66.8 per cent of private infrastructure investment in Africa. The share of private investment in the region's total infrastructure financing is about 33 per cent, showing some of the countries (including South Africa) heavy reliance on non-private investment. For the other subregions, private sector investment represents a small proportion of total investment. In East and West Africa, it is around 9 per cent, and in Central Africa, around 6 per cent.

Private finance has concentrated in countries and sectors that offer “bankable” opportunities because it flows towards opportunities with commercially attractive returns and risks. That attractiveness is determined by both the project-level characteristics of the investment and the broader macroeconomic and investment environment. These fundamental aspects help explain the poor development of private financing for infrastructure in Africa, since an attractive investment must provide either steady flows of income or reasonable certainty of steady returns in the future. The private sector's ability and willingness to bear different categories of risk also determines an investment opportunity's attractiveness. The key is whether expected returns are commensurate with the expected risks.

STRENGTHENING PUBLIC-PRIVATE PARTNERSHIPS

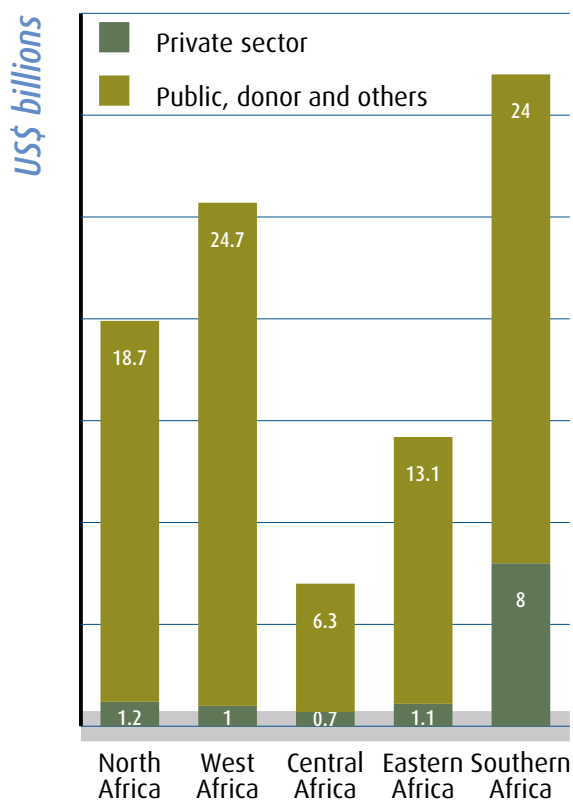
To help bridge their huge infrastructure financing gaps, some African governments have used public-private partnership (PPP) models. That is, they enter into an agreement with private sector partners to fund, deliver or operate an infrastructure project or asset, in exchange for a long-term financial benefit—recouped costs and further benefits from the asset for a set period. At the end of the period, the private partner returns the infrastructure asset to the government. In many developing countries, PPPs have financed the construction and operation of transport infrastructure (toll roads), railways, airports, healthcare centres and oil and gas exploration and production.

FIGURE 5.3 INFRASTRUCTURE INVESTMENT BY INTERNATIONAL LENDERS AND DONORS, NATIONAL GOVERNMENTS AND THE PRIVATE SECTOR IN AFRICA



Source: Based on ICA database (2019).

FIGURE 5.4 PRIVATE SECTOR FINANCING IN INFRASTRUCTURE, BY SUB-REGIONS, 2018



Source: Based on data from ICA database (2018).

Only a few African countries have embarked on PPPs to tap private capital for financing infrastructure. Kenya, Nigeria, Uganda and South Africa account for almost 50 per cent. Energy represents 78 per cent of PPP infrastructure projects in Africa, transport 22 per cent and water and sanitation less than 1 per cent. In South Africa, PPP projects account for about 2.2 per cent of the public sector infrastructure budget. Since 1990, South Africa designed and brought to financial closure 110 PPP projects with a total committed investment of \$25.55 billion. They include the Gautrain light rail concession, with a total investment of \$3.48 billion, and the Mozambique–South

Africa gas pipeline, with a total investment of \$1.2 billion (PPP Knowledge Lab, 2020). In 2018/19, 33 PPP projects with a total value of R89.3 billion (about \$6.33 billion at the 30 December 2019 exchange rate) were completed, with more than 90 per cent realised within two to three years from the signing of the PPP agreement. The successful rollout and delivery of the South African PPP programme can be explained by bankable projects; good project preparation; the transparency, efficiency and effectiveness of procurement; conducive investment and regulatory environments; and adequate project and stakeholder management.

African countries could also learn from other emerging countries that have unlocked flows of private capital into PPPs, including India, China and Brazil. In India, PPP played a critical role in the development of infrastructure, including roads, railways, airports, seaports and urban transit. In restructuring railway infrastructure, 20 PPP projects with a total value of 140 million rupees (then about \$1.8 million) were undertaken to build and operate rail connectivity for ports, station redevelopment, rail-side logistics parks and warehousing, as well as satellite terminals (Dawra and Jagtap, 2016). The improvements contributed substantially to the boom of the Indian economy. At end of 2019, China had about 7,000 ongoing PPP projects with a total investment estimated at 9 trillion yuan (about \$1.3 trillion). About 90 per cent of that investment was allocated to transport, social affairs, urban infrastructure and ecological environmental protection projects.

In both India and China, the development of national PPP policy, the enforcement of PPP laws, the mechanisms coordinating different departments and the financial measures to support the growth of the PPP markets have been major contributors to capital projects and infrastructure upgrades. The policies and measures have created enabling environments for PPPs and expanded the pool of private developers and investors with experience and knowledge of the infrastructure market. African countries imitating these PPP models and putting the required policies and capabilities in place will gain the opportunity to attract increased capital from private investors and lenders and so bridge the infrastructure gap.

DEVELOPMENT BANKS

Multilateral development banks and national development banks have traditionally been catalysts of private or semi-private infrastructure finance. In Africa, such lenders as the World Bank, the African Development Bank (AfDB) and regional development banks have been key (see the successful case of the Development Bank of Southern Africa in **BOX 5.4**). In Latin America national development banks have also been important, as recently highlighted by Griffith-Jones and Ocampo (2019).

African regional and national development banks are pivotal in supporting infrastructure finance, including by catalysing private finance. They should expand in countries where they are active (adding infrastructure finance to their business if they are not already participating in that sector) and should consider going into new countries. Their growth will require deepening local and regional capital markets in Africa (PricewaterhouseCoopers, 2019), as well as increasing international community support through multilateral and regional development banks, bilateral development finance institutions and international climate finance funds, such as the Green Climate Fund.

Countries viewed as having a stable macroeconomic environment with predictable infrastructure regulation have attracted the most private financing in Africa. Their risks are seen as lower, and the expected returns are correspondingly lower. Where misrule, project risk or macroeconomic instability is high enough to discourage private investors, multilateral development banks or development banks often step in. They may provide financial guarantees and help develop alternative regulatory frameworks or provide supplementary financing, which can create a halo effect that encourages private actors to invest. Concessionary resources that lower the cost of borrowing increase the attractiveness of infrastructure investment for private investors.

Infrastructure is generally expensive. Both capital costs and operation and maintenance costs are substantial. Capital costs vary by location, the number of users, the type of technology, and choices made during design. Operating costs vary

“African regional and national development banks are pivotal in supporting infrastructure finance, including by catalysing private finance”

according to usage and the technology chosen. For road, rail and air, operation and maintenance costs increase fairly little as traffic increases, but the cost per user decreases massively as the user base increases. Electricity generation can be nearly free (with renewable energy) or relatively expensive (with fossil fuels), depending on the technology chosen. But cell towers unconnected to the electrical grid or with unreliable electricity suffer high running costs since they require investment in electricity generation.

Considerable risks face infrastructure investment in Africa. Demand must be great enough to cover capital and operating costs, creating risk for those investing large amounts of money in hope of future demand. So, private investors willing to take the risk will demand a large risk premium for their investment, or else guarantees, for example, of traffic. Some infrastructure may never produce adequate return on investment. Appropriate support mechanisms are needed to attract private investment, which does not currently flow to Africa's infrastructure because of high risk and low expected return.

Project preparation is one such support mechanism critical for raising private capital. Since opportunities for profitability may not be easily visible to private investors, governments, development banks and donors may step in to conduct pre-feasibility and feasibility studies to assess the market opportunities. Some African development banks already play

an important role in project preparation. The New Partnership for African Development Infrastructure Project Preparation Facility—a consortium led by the AfDB in partnership with financial donors and major infrastructure consultancy firms—is a notable regional initiative. It has effectively identified and prioritized regional infrastructure projects needing more than \$6 billion in investment in the energy, transport, ICT and transboundary water sectors.

Government and donors have several tools available for financing to enable a project to start. They may provide direct loans to the private sector. They can co-finance with private lenders, which increases their leverage. Local actors such as national development banks or commercial banks can offer local currency loans, an important debt instrument that avoids currency mismatches. To ensure local currency loan availability, governments must support and help develop and deepen local capital markets, which can help development banks finance increased lending, or can directly fund bond issuance for projects.

“Local actors such as national development banks or commercial banks can offer local currency loans, an important debt instrument that avoids currency mismatches”

For financing during infrastructure operation, loan guarantees or revenue guarantees can ensure a low risk for private investors but impose on the guarantor—the government or the development bank—high risks and potential losses. Such guarantees can be useful in unlocking private investment when revenue risk is extremely high or the macroeconomic situation is weak, but they create contingent liabilities for the public guarantor. They can be a costly solution, given the higher cost of private financing together with the need for high returns.

Development banks can provide funds to the private sector through loans or equity. With a diversified portfolio integrating riskier and less risky projects, they can fund their operations through revenues and through funds levied on the market. Development banks coexist at the international, regional and national levels. At the international and regional levels, they may mainly focus on regional integration and trade, while at the national level, they focus more on nationally oriented infrastructure. Development banks have flexibility since they have more leeway to fund themselves through local sources.

Sovereign wealth funds can fund investment or capitalize national development banks. Accumulating revenues from the discovery and exploitation of natural resources, they can partly channel those resources to raise the capital of national development banks, increasing bank headroom for lending to infrastructure and other key sectors. The natural resource curse could thus become a resource blessing.

In South Africa, DBSA and Industrial Development Corporation of South Africa (IDC) mainly raise funds through commercial loans or bond issues in the domestic market. This is also the preferred method of funding for the Industrial Development Bank in South Africa, Worker’s Bank of Egypt and the Botswana Development Corporation. Funding for the Algeria Fonds National d’Investissement, the Development Bank of Ethiopia and Angola’s Banco de Poupança e Crédito are provided by government contributions. Further support to development banks is also provided by governments through capital increases. Other, less used approaches are domestic savings through customer deposits, soft loans from development actors and equity capital from actors other than governments.

Overall, smaller, less capitalized national development banks do not have the capability to invest in large and complex infrastructure projects, which would take up too much of their portfolio. Many African countries find it more practical to seek finance externally for infrastructure projects and direct their development banks to target less equity-intensive sectors of the economy (Bradlow and Humprey, 2016). African national development banks have considerable scope for expanding their scale, which would let them contribute more to financing infrastructure. Together with developing local capital markets, including by issuing bonds with long maturities, they could catalyse private investment and channel more private and public international finance to infrastructure.

International public finance, for example for green infrastructure, should be increasingly available. It could ideally be channelled through African national development banks, provided they have the scale and expertise to absorb it and

use it for their own loans—thus catalysing domestic private finance by blending private sector lending with public sector grants or by unlocking additional private market-rate lending.

BOX 5.4 CASE STUDY: DEVELOPMENT BANK OF SOUTHERN AFRICA OPERATIONS IN SOUTH AFRICA

The Development Bank of Southern Africa (DBSA) is among the most successful development banks in Africa. It was created in 1997 with a core mandate of financing infrastructure. It aimed to create regional and national prosperity and integrated resource efficiency by developing social and economic infrastructure and supporting regional integration and the sustainable use of economic resources. DBSA's primary mission is to promote infrastructure development in South Africa and the countries of the Southern African Development Community (SADC). About 54.4 per cent of DBSA's portfolio is in larger infrastructure, and the remainder mainly in loans to municipal authorities for local infrastructure. Given South Africa's priorities, the large majority (78.92 per cent) of assets held by DBSA are in electricity, with 9.78 per cent in transport, 1.12 per cent in ICT and 0.56 per cent in water and sanitation.

Source: ECA, DBSA, 2018 and OECD, 2019.

DBSA relies mainly on the bond market and targeted government funding as domestic funding sources. Bonds are issued in local currency in the domestic market (thus avoiding currency mismatches) and are most often purchased by domestic buyers. Such specificity may not be possible in most African countries, where savings are lower and capital markets less developed.

Having experienced risky infrastructure investments and their consequences, DBSA has shifted from being purely a financier to participating throughout the infrastructure value chain. It is active throughout the project cycle, offering advice and support in planning, preparing, financing, building and maintaining projects, thus ensuring better and more sustainable outcomes to its activities. Its shift towards project support reduces risks for private and other investors

and opens DBSA towards partnerships with private sector and financial institutions.

A new financial strategic objective for DBSA consists in leveraging other sources of funding, including private sector and other financing bodies. DBSA aims to become a catalyst for infrastructure finance by crowding in third parties. For example, to spur green infrastructure, the DBSA created the DBSA Climate Finance Facility (CFF). The first of its kind on the African continent, the CFF will fund sustainable infrastructure in SADC countries—initially those connected to the Southern Africa Power pool. It aims to co-finance green finance investment with local banks by leveraging equity from outside funds (the Green Finance Fund, or GFF, and other climate funds) as well its own financial capabilities.

INSTITUTIONAL INVESTORS

In many countries around the world, various financial services are provided by non-bank specialist institutions, such as pension funds, sovereign wealth funds, insurance companies, microfinance institutions, export credit agencies, and so on. The emergence and growth of an array of institutional investors to meet the financing needs of firms and households is a mainstay of economic development and private sector growth. In Africa, “non-bank financial institutions” refers to financial institutions not regulated by the central bank. The most active in Africa are insurance firms, housing finance companies, microfinance institutions and savings and loan associations.

Globally, 22 major pension markets had \$46.7 trillion in pension assets and accounted for 69 per cent of the GDP of those economies at the end of 2019 (Thinking Ahead Institute, 2020). Of that, 92 per cent is owned by seven markets: Australia, Canada, Japan, the Netherlands, Switzerland, the United Kingdom and the United States. The money from pension funds is commonly invested in listed and private companies around the world to generate high returns for their contributors. But the pension fund industry may suffer a crisis, even globally. First, shifting demographics are lowering the ratio of workers to retirees, increasing the pressure on pension funds. And second, long-term interest rates have been falling since the global financial crisis, significantly reducing the profitability of pension funds and raising concerns about their liquidity. The negative interest rate policy in some countries is expected to further lower rates on bonds, financial instruments institutional investors commonly use.

African pension funds have been expanding in recent years, though from a low base, thanks to the rise of the middle class and regulatory reforms that bring more people into the social security net (ECA, 2019). Pension funds in the six largest African markets could grow to an estimated \$7.3 trillion by 2050 (from \$800 billion in 2014). At that growth rate, if they invested about 20 per cent of their annual assets in infrastructure, they would add \$77 billion to help finance the continent’s infrastructure deficit (ECA, 2018). But pension investments in Africa have been focused mainly on government securities,

real estate and bank deposits, with smaller proportions in equities and corporate bonds. Pension schemes differ across African countries. While the South African pension system is a mix of public and private financing, in other countries such as Morocco, the pension system is dominated by the public sector (BOX 5.5).

Pension and sovereign wealth funds in Africa could play a catalytic role in mobilizing capital for infrastructure by dedicating a share of their assets specifically to infrastructure as anchor and direct investors (AUDA-NEPAD-CBN 5% Agenda Report; Sy, 2017). That practice is common in other countries around the world. But in Africa many constraints prevent the transformation of pension and sovereign funds’ assets into infrastructure investments. In many African countries, institutional investors are kept from investing in infrastructure as an investable asset class, partly because their investment policy statements, investment mandates and adjusted risk return criteria are not aligned with that asset class. Their lack of expertise in structuring appropriate investment vehicles and instruments, the dearth of investable projects and the absence of a vibrant secondary market for infrastructure assets to facilitate exit compounds the problem in many cases.

To help Africa reduce its infrastructure financing gap, the 5% Agenda, an African Union Development Agency–New Partnership for Africa’s Development initiative, was developed

“African pension funds have been expanding in recent years, though from a low base, thanks to the rise of the middle class and regulatory reforms that bring more people into the social security net (ECA, 2019)”

under the guidance and recommendation of the Programme for Infrastructure Development in Africa (PIDA) Continental Business Network and the African Sovereign Wealth and Pension Fund Leaders Forum. The 5% Agenda is a pact in which African governments commit to collaborate on designing projects and aligning infrastructure investment policy regimes with African asset owners' investment mandates. It includes pursuing a new Institutional Investor Public Partnership (IIPP) model like those successfully used by pension funds and the governments of Australia and Canada. In return, African institutional investors agreed to increase their allocations to African infrastructure investment to 5 per cent of assets under management and to support the African Institutional Infrastructure Co-Investment Platform initiative, in which African sovereign investors and international pension and sovereign fund peers collaboratively co-invest in each other's markets across the continent.

The 5% Agenda's IIPP model, which was endorsed by African Union Heads of State, offers:

- World class, essential and well-maintained infrastructure assets for governments with limited funds and competing expenditure requirements.
- Reliable infrastructure delivery, budgetary discipline and long-term real investment returns for consumers and civil society.
- Institutional infrastructure investment over the full life-cycle of the asset or assets, not merely for an investment, economic or political cycle. So, the prospects for the assets to catalyse and increase economic and private sector development, job creation and regional and domestic trade and investment competitiveness are much improved.

The 5 per cent share of African institutional investment will also have the following key impacts on Africa's infrastructure development and financing:

- African institutional savings capital is unlocked to implement regional, domestic and trade-related infrastructure projects on the continent and industrial infrastructure projects that benefit the African Continental Free Trade Area (AfCFTA).
- PIDA and the African Union Presidential Infrastructure Champions Initiative (PICCI) projects are brought to financial close for improved energy, transport, digital and trade-related infrastructure.
- African primary and secondary capital markets, which are currently shallow, are broadened and deepened.
- Regional integration and job creation are boosted.
- Partnerships are formed with international institutional investors and financiers, which have been hesitant to allocate financing to African infrastructure in the absence of African anchor institutional co-investment partners.

BOX 5.5 PENSION FUND SYSTEMS IN SOUTH AFRICA AND MOROCCO

SOUTH AFRICA

The South African pension system is composed of a defined-contributory, means-tested public benefit programme, various pension and provident fund arrangements and voluntary savings. It includes private pension funds, provident funds, retirement annuity funds, umbrella funds, preservation funds, unclaimed benefit funds and beneficiary funds.

The public benefit insurance scheme consists of social assistance for persons resident in South Africa, over age 60, whose income and wealth are below a threshold. This scheme is financed by taxes and provides up to R1,410 per person per month.

In addition, a defined benefit pension fund has been established for public servants. The contribution of the employees is 7.5 per cent, while that of the employer (government or provincial government) varies from 13 per cent to 16 per cent of pensionable salary. At retirement, the employee with fewer than 10 years contributing to the fund receives a lump sum payment. After 10 years of contributing, the pensioner receives a lump sum payment plus a pension.

In the private sector there are many employer-sponsored pension funds with or without compulsory membership. The majority consist of funded defined contribution plans that

pay a lump sum or a pension upon retirement. Pension funds and their investments are regulated by law and enjoy a favourable tax on contributions paid into the fund and benefits paid. The legal retirement age is 60 years.

MOROCCO

The legal retirement age in the public sector in Morocco is 63 years. The Moroccan pension system is based on a compulsory basic scheme managed by the Moroccan Pension Fund, the National Social Security Fund and the Group Retirement Allowance Plan. The Moroccan Pension Fund manages, on a pay-as-you-go basis, the retirement of civil and military officials, as well as officials of local governments and public institutions. Contributions to the fund, divided equally between the employee and the employer, amount to 14 per cent of the reference salary. In return, the pensioner receives a pension equal to 2.5 per cent of the earnings that constituted the contribution base times the number of annuities, with a limit of 40.

The National Social Security Fund (CNSS) is responsible for the pay-as-you-go management of the basic pension for employees in the private sector. Old-age insurance contributions amount to 11.89 per cent of salary up to 6,000 dirhams. The pension is granted to a worker who has ceased all activity and has accumulated at least 3,240

days of contributions to the fund. The basic amount is equal to 50 per cent of the reference salary, capped at 6,000 dirhams. The rate increases by 1 per cent per block of 240 days of contribution beyond the 3,240 basic days up to 70 per cent of the reference salary, for a maximum monthly pension of 4,200 dirhams in addition to the basic amount. Given the weakness of the basic pension service provided by the CNSS, the Moroccan Inter-Professional Retirement Fund, a mutual company for retirement savings, offers companies an additional optional pension scheme to support retirement by granting beneficiaries a fair pension.

The third institution is the Group Retirement Allowance Plan. It covers the staff of organizations subject to the financial control of the state, as well as non-permanent agents and contractors of the state and local communities. Contributions amount to 18 per cent of the reference salary, with a ceiling of four times the average salary of the scheme—16,600 dirhams a month in 2016. The contributions are borne two-third by the employer, one-third by the employee. The old-age pension is paid to participants who have accumulated at least three years of contributions to the plan. It represents 2 per cent of the revalued average career salary times the number of years of contribution to the plan.

Source: ECA's compilation.

CONCLUSION

This chapter has addressed ways the private sector could tap innovative financing mechanisms and mobilize private capital for sustainable and long-term financing in Africa. It took stock of the state of the sustainable bonds market, addressed infrastructure investment needs and highlighted new roles of long-term capital from development banks. It reviewed the green, social and sustainability bond markets, finding that, although the global market has seen exceptional growth since 2007, Africa's participation has been muted. Although international investor appetite is generally strong, it is conservative in the face of political, macro and environmental risks in Africa.

The sustainability bond market offers a source of incremental capital that could alleviate financing constraints and put to other uses the scarce finance that is available, including that from public resources. Strengthening relationships with partners such as IFIs and global financial hubs can mitigate risks for private investors and so crowd finance into the region. Recent innovative funds and risk mitigation strategies are important in this regard but need increased asset allocations by the funds and other financing vehicles for Africa.

The chapter has shown the considerable gap in business infrastructure and the great importance of obtaining long-term private finance to cover that gap for future inclusive and sustainable growth on the continent. Currently, private finance and private investment flows go only to certain infrastructure subsectors, such as energy, and to certain categories of countries, especially the richer ones, such as countries in Southern Africa, and those with deeper capital markets, such as those in North Africa.

African development banks, in combination with other actors, can increasingly work to finance infrastructure by leveraging private resources. There are two pre-conditions: the development bank must have large enough scale and be able to fund

investment in infrastructure, and financial markets must be fairly well developed and deep. Institutional investors (pension funds and insurance companies) must be large and regulated so a proportion of their assets can be invested in infrastructure. Large development banks can then help catalyse significant amounts of private finance for both private, public and public-private investors to co-finance infrastructure. Such financing can be provided in local currency, avoiding the problem of currency exchange risks and other fiscal imbalances.

So, an absolute requirement for increasing private finance and investment in African countries' infrastructure—using mainly domestic resources—is to deepen capital markets and increase the scale of development banks. Smaller economies, of which there are many in Africa, could create or deepen and enlarge regional institutions—development banks, institutional investors and capital markets.

Clearly other actors need to be involved. National governments have an important role, not just in providing resources to capitalize development banks, but also in providing guarantees for development bank loans, which increases their credit rating. National governments also contribute through appropriate regulatory frameworks for infrastructure and for actors such as institutional investors. Foreign donors and multilateral development banks, including the AfDB, need to provide more financial resources and guarantees to encourage private investment in infrastructure. Donors, development finance institutions and specialized international funds such as the Green Climate Finance Fund can provide valuable grants, concessional resources or guarantees that can allow blending of resources. Such funding and guarantees can attract private finance to infrastructure projects that might not otherwise have been sufficiently attractive, especially in certain subsectors and countries.

REFERENCES

- AfDB (African Development Bank). 2018. *African Economic Outlook 2018*. Abidjan, Côte d'Ivoire: AfDB.
- AGF (African Guarantee Fund). 2018. *2018 Annual Report & Financial Statements*. Nairobi, Kenya: AGF. <https://africanguaranteefund.com/wp-content/uploads/2019/09/AGF-Annual-Report-2018.pdf>.
- Bradlow, D., and C. Humprey. 2016. "Sustainability and Infrastructure Investment: National Development Banks in Africa." Global Economic Governance Initiative Working Paper 2, Boston University, Boston, MA. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2802713.
- CBI (Climate Bonds Initiative). 2018a. *China Green Bond Market 2018*. London: Climate Bonds Initiative. https://www.climatebonds.net/files/reports/china-sotm_cbi_ccdc_final_en260219.pdf.
- CBI (Climate Bonds Initiative). 2018b. "Taxonomy." Accessed on 29 July 2019 at <https://www.climatebonds.net/standard/taxonomy>.
- CBI (Climate Bonds Initiative). 2019. "Explaining Green Bonds." Accessed on 29 July 2019 at <https://www.climatebonds.net/market/explaining-green-bonds>.
- Dawra1, A., and M. S. Jagtap. 2016. "Public-Private Partnership (PPP) Role in Infrastructure Development in India in Transportation Sector." *Advances in Economics and Business Management (AEBM)* 3 (3, April-June): 327-331.
- DBSA (Development Bank of Southern Africa). 2018. *Bending the Arc of History towards Shared Prosperity: 2018 Integrated Annual Report*. Johannesburg, South Africa: Development Bank of Southern Africa.
- ECA (United Nations Economic Commission for Africa). 2015. *Innovative Financing for the Economic Transformation of Africa*. Addis Ababa, Ethiopia: ECA.
- ECA (United Nations Economic Commission for Africa). 2018. *Financing Infrastructure in Africa: The Role of Pension Funds*. Addis Ababa, Ethiopia: ECA.
- ECA (United Nations Economic Commission for Africa). 2019. *Regulating and Supervising Pensions Funds to Finance Infrastructure in Africa*. Addis Ababa, Ethiopia: ECA.
- Environmental Finance. 2020. *Sustainable Bonds Insight 2020*. London, UK. www.environmental-finance.com
- Financial Times. 2019. "'Rhino Bond' Breaks New Ground in Conservation Finance." 16 July. <https://www.ft.com/content/2f8bf9e6-a790-11e9-984c-fac8325aaa04>.
- Griffith-Jones, S., and J. A. Ocampo. 2019. *The Future of National Development Banks*. London: Oxford University Press.
- ICA (Infrastructure Consortium for Africa). 2018. *Infrastructure Financing Trends in Africa 2017*. Abidjan, Côte d'Ivoire: ICA.
- IFC (International Finance Corporation) 2018. *Green Bond Impact Report, Financial Year 2018*. Washington, DC: World Bank. https://www.ifc.org/wps/wcm/connect/edb2ec6d-15fa-4f5eddb1a17cfb4f/IFC_Green_Report_FY18_FINAL.PDF?MOD=AJPERES&CVID=mp65SOL/.
- LSEG Africa Advisory Group. 2019a. *Developing Offshore Local Currency Bond Markets for Africa*. London: LSEG. https://www.lseg.com/sites/default/files/content/documents/Africa_OffshoreLF_MWv10.pdf.
- LSEG Africa Advisory Group. 2019b. *Developing the Green Bond Market in Africa*. London: LSEG. https://www.lseg.com/sites/default/files/content/documents/Africa_GreenFinancing_MWv10_0.pdf.
- NEPAD (New Partnership for Africa's Economic Development). 2017. *AUDA-NEPAD Continental Business Network (CBN) 5% Agenda Report: Mobilising Domestic Pension and Sovereign Wealth Capital for PIDA and Other African Infrastructure Projects through Institutional Investor Public Partnerships (IIPPs)*. Lusaka, Zambia: NEPAD.
- OECD (Organisation for Economic Co-operation and Development). 2019. "Aid (ODA) by Sector and Donor Statistics [DAC5]." Paris: OECD Publishing.
- PPP Knowledge Lab 2020. PPP Knowledge Lab Country Data [database]. <https://pppknowledgelab.org/>.
- PricewaterhouseCoopers. 2019. *Africa Capital Markets Watch 2018*. Johannesburg, South Africa: PricewaterhouseCoopers. <https://www.pwc.co.za/en/assets/pdf/africa-capital-markets-watch-2018.pdf>.
- Sy, A. 2017. *Leveraging African Pension Funds for Financing Infrastructure Development*. Washington, DC: Center for Global Development. <https://www.un.org/en/africa/osaa/pdf/pubs/2017pensionfunds.pdf>.
- Thinking Ahead Institute. 2020. *Global Pension Assets Study 2020*.
- Tyson, J. 2015. *Sub-Saharan Africa and International Equity: Policy Approaches to Enhancing Its Role in Economic Development*. London: Overseas Development Institute. <https://www.odi.org/publications/9927-sub-saharan-africa-and-international-equity-policy-approaches-enhancing-its-role-economic>.
- Tyson, J. 2018. "Private Infrastructure Financing in Developing Countries: Five Challenges, Five Solutions." Working Paper 536, Overseas Development Institute, London.
- World Bank. 2018. *Survey of National Development Banks*. Washington, DC: World Bank. <https://elibrary.worldbank.org/author/World+Federation+Of+Development+Financing+Institutions>.
- World Bank. 2018. "Seychelles Launches World's First Sovereign Blue Bond." Press Release, 29 October. <https://www.worldbank.org/en/news/press-release/2018/10/29/seychelles-launches-worlds-first-sovereign-blue-bond>.

ENDNOTES

- 1 Green taxonomies typically include renewable energy, energy efficiency, adaptation to climate change, waste management, pollution prevention, water management, biodiversity and ecosystem protection, sustainable transport, sustainable agriculture, and green buildings (CBI, 2018b).
- 2 Such as foreign exchange (FX) futures and options.

