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# Supercharging Africa's Startups: The Continent's Path to Tech Excellence

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## Foreword

**The tech revolution continues to redefine what is possible for individuals, states and societies.**

Technology can help to address inequalities, manage the climate crisis, transform food production, democratise world-class education and health care, and give people a say in the decisions that affect their lives. It can enable governments to improve public services and accelerate the achievement of the United Nations' Sustainable Development Goals. It is the leaders who embrace technology and its potential who are best placed to transform the lives of all of their people.

**Africa is a future tech superpower, with a rapidly expanding tech startup ecosystem, but it still lags far behind the rest of the world.** The continent has already been on the leading edge of using technology to leapfrog traditional development paths, bypassing landlines and moving straight to mobile phones, and adopting e-banking and mobile money while traditional banking rates were still low. Home to the world's largest free-trade area, and with the highest rates of entrepreneurship, African tech creators are already generating some of the most exciting innovations in the world. The potential for tech on the continent is limitless, and the time for action is now.

**We can only harness the power of tech for good when we have a healthy innovation ecosystem that enables the best ideas to grow to scale.** The closer the creators of new technologies are to the challenges they address, the more effective they are likely to be. Developing vibrant tech ecosystems in Africa puts the continent on the path to digital sovereignty: building the technology and setting the rules that will shape our global future. Increasing Africa's capacity to create technology will accelerate its ability to shape its digital future.

**African governments need to rapidly build and deploy a digital economic policy that will open up and connect economies while creating opportunities for its growing youth.** This should address three key challenges:

1. **Reaching \$90 billion in tech financing by 2030.** This will require new investment tools, both local and foreign, to de-risk tech startup investment, with governments and donors partnering with the private sector to achieve this.
2. **Improving the business environment.** The cost of unclear and bureaucratic regulatory compliance across 54 countries is high for tech startups that want to scale. Leaders need to develop a harmonised common framework that promotes easy access to the regional markets.
3. **Strengthening support networks.** More connected ecosystems are stronger and grow faster. African leaders should support ecosystem players and launch a pan-African tech startup network to strengthen and support tech startups.

**With a supportive business environment, sufficient funding flows and strong connections, Africa can become a tech superpower.** This roadmap sets out the steps leaders can take to build thriving, competitive tech startup ecosystems that generate world-changing innovations. Tech in Africa has an exciting future, and my Institute and I look forward to supporting leaders as they help to create it.

**Tony Blair**

**Executive Chairman**

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## Executive Summary

While Africa is punching below its weight in the international race to develop technology, the continent has the potential to become a startup superpower in the tech sector. Home to an exploding fintech scene and more than half the world's mobile-money users, Africa is a pioneering space for commercial innovation and the most entrepreneurial continent. Pre-pandemic, 22 per cent of the working-age population had set up their own businesses.

However, cumbersome regulations, the digital-skills gap, limited funding and fragmented markets mean that Africa accounts for just 0.2 per cent of the value of global startups.

Action is being taken, not least to attract more tech-startup funding, which is now growing at a rate six times faster than the global average: in 2021, \$4.9 billion was raised, the amount more than tripling in one year. Leaders across the continent are also legislating to improve the business environment. The founding of the African Continental Free Trade Area (AfCFTA) in 2018 means the continent hosts one of the world's largest free-trade areas, with the power to boost economic output by \$29 trillion by 2050.

This is welcome, but more must be done to seize this moment so that Africa is able to fulfil its huge promise: our ten policy recommendations show just how Africa's leaders and policymakers can transform their continent by putting it on the path to tech excellence.

### Transforming Africa into a Startup Superpower: Ten Recommendations

#### **Close the Funding Gap to Secure Investment of \$90 billion for Tech Startups by 2030**

Despite a notable growth in funding for Africa's tech startups over the past five to seven years, investment still lags behind the rest of the world. Investors are deterred by a lack of reliable information, fluctuating exchange rates, and weak regulatory and legal systems. With these concerns applying to both domestic and international investors, governments need to address these information deficiencies, develop financing vehicles that reduce risks and unlock capital by diversifying the investor base. We make the following recommendations:

1. Establish a public data-sharing platform on tech startups
2. Develop innovative financing vehicles
3. Unleash capital from institutional and corporate investors

## **Build a Flourishing Business Environment for Tech Startups**

In many parts of Africa, the cost of business is too high and markets are challenging to enter. Weak digital infrastructure and the digital-skills deficit in some African countries result in higher operational costs for startups on the continent. In the immediate term, governments should engage with startups to implement new policy and legislation, including regulatory sandboxes that allow for products and services to be trialled under the supervision of regulators in a low-risk environment. There needs to be a push for individual governments to implement the AfCFTA while, in the long term, concerted action is needed on infrastructure, skills and startup-visa initiatives as part of the effort to retain and attract tech talent. We make the following recommendations:

4. Create a single digital market (SDM) by prioritising implementation of the AfCFTA
5. Generate demand for local tech solutions
6. Implement legislation to support tech startups and seek their regular feedback
7. Improve digital skills
8. Strengthen digital infrastructure

## **Nurture Connections Through Tech Networks**

Africa's poorly connected startup ecosystem means that founders miss out on the support, advice, openings and knowledge exchange so vital to their existence. Rather than being left to fend for themselves, Africa's tech startups would benefit from networks that connect founders, tech hubs, universities and government bodies to help identify business opportunities, overcome skills shortages and attract the required talent. As part of the solution, the launch of a "Pan-African Startup Network" to incorporate and support key stakeholders would address many of these challenges while supporting improved policymaking. With this accountable forum to share best practice and address issues that arise from startup legislation, entrepreneurs and support organisations would have the chance to feed into the policies that directly affect them. We make the following recommendations:

9. Boost the capability of startups and support organisations
10. Launch a "Pan-African Startup Network"

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## Introduction

Africa has the potential to become a startup superpower in the tech sector. Home to the world's largest free-trade area and a vibrant entrepreneurial culture, the continent saw 22 per cent of Africa's working-age population start new businesses before the pandemic. People in Africa have shown a willingness to embrace the use of technology, for example bypassing landlines to adopt mobile phones or embracing e-banking and mobile money in place of traditional banking. Funding for tech startups on the continent is growing at an impressive rate – six times faster than the global average – and a record \$4.9 billion was raised in 2021, the amount more than tripling in one year. But this is still a fraction of the total: African startups account for just 0.2 per cent of the \$3.8 trillion value globally. Cumbersome regulations, the digital-skills gaps, limited funding and highly fragmented markets continue to hold Africa's startups back.

### Why African Countries Need Thriving Tech Ecosystems

The case for action is clear: the digital economy is a critical lever of economic and social development for African nations, enabling governments to improve public services and achieve the United Nations' Sustainable Development Goals quicker.

**Tech ecosystems drive economic growth.** The digital economy will contribute an estimated \$300 billion to African GDP by 2025, providing much-needed employment on a continent where three to four times more people enter the job market than actual roles are created. In Nigeria, the technology sector contributed more to the country's GDP than the oil and gas sector between 2010 and 2019. Meanwhile, Kenya's information and communications technology (ICT) sector was on course to contribute up to 8 per cent of the country's GDP through IT-enabled services, also generating up to 250,000 jobs by the end of 2021.

**To fully benefit from the tech revolution, African nations must be creators, not just users of tech.**

Vibrant tech ecosystems will put the continent on the path to digital sovereignty: this means creating the technology and setting the rules that will shape the continent's future, while proactively driving the fourth industrial revolution. Expanding Africa's capacity to innovate as well as its ability to retain world-class tech talent will ensure the continent is the master of its own digital destiny.

**Technology significantly increases living standards for all.** From transforming the delivery of education and health care to improving food production and protecting people from worsening climate crises, tech innovations can forge solutions to longstanding challenges. And the closer tech creators are to the challenges they address, the more effective they are likely to be. Innovation for Africa should be driven

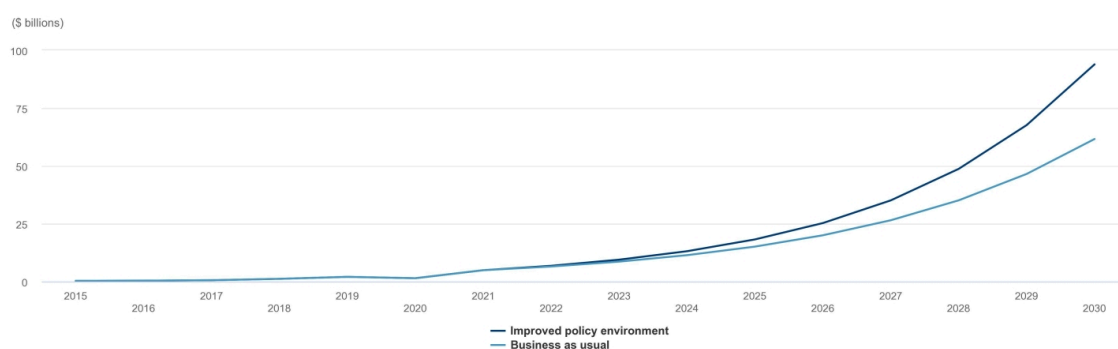
by its own homegrown innovators, and we should also see and champion more Africa-led solutions to global challenges.

**A thriving tech sector can boost post-pandemic recovery.** Africa has experienced an unprecedented economic shock as a result of the Covid-19 pandemic. While African governments and regional bodies face a daunting task in facilitating recovery, new growth sectors will be crucial to swift economic development and job creation. African governments need to rapidly identify and deploy a digital economic policy to open up and connect markets, and to generate opportunities for their burgeoning youth populations.

### Seizing This Moment

This is an **extremely hopeful moment** for the African tech ecosystem. While investment in African tech startups is far behind other regions, it is accelerating at pace, with the sector having attracted \$4.9 billion in funding in 2021, a 243 percentage change on 2020. Recognising the importance of these ecosystems for jobs and growth, governments are putting in place bold measures to support tech entrepreneurs. With the creation of the AfCFTA, the possibility of a continent-wide single digital market (SDM) is now real. If current positive trends are sustained, and the transformative potential of technology is unlocked, Africa could secure tech-startup funding of more than \$90 billion by 2030.

**Figure 1 – Projecting growth in tech-startup funding under two scenarios: business as usual versus an improved policy environment**



Source: TBI based on data from Partech's 2020 Africa Tech Venture Capital Report

Using data that cover the past six years, we project a business-as-usual case versus an improved policy-environment case above. Based on Africa's lowest positive year-on-year growth rate of 32 per cent between 2015 and 2016, the business-as-usual case comprises a funding projection of \$62 billion by 2030. This assumes limited government and stakeholder intervention in fostering the tech ecosystem; a business environment that continues to stifle startup growth; no significant incentives to attract additional investment; and underdeveloped networks.



The improved policy-environment case is based on the compound annual growth rate of venture-capital (VC) funding to Africa between 2015 and 2020. Projected until 2030, this scenario sees Africa reaching \$93.9 billion, based on the assumption that gains from the past few years are maintained.

### **Swift Action on Funding, the Business Environment and Networks**

Far-reaching policies at the national and regional levels are needed so that African startups can reach their potential. For this to happen, they need access to funding at every stage of their growth, markets that generate demand for their solutions, institutions that help to bring down costs and strong support networks. Falling broadly under three main challenges that require action and are described below, we also set out ten policy recommendations in the chapters to come.

First, tech startups face funding and liquidity challenges throughout their lifecycles. The average amount for African startup seed rounds is \$1.5 million, versus \$4.6 million and \$5.7 million in India and Latin America respectively. Investors are deterred by the lack of information, perceived risks and a shortage of suitable financing vehicles. To close this funding gap, policy measures that unlock local financing, diversify investor profiles and facilitate global funding inflows will be required.

Second, next-generation tech startups need an agile and responsive business environment so that the costs of starting and scaling tech solutions across the continent can be reduced. Africa's Ease of Doing Business ranking, according to the World Bank, is well below the global average (a score of 51.8 for sub-Saharan Africa versus 78.4 for high-income countries), with the continent facing major infrastructure gaps and a digital-skills deficit that results in high operational costs.

The third challenge arises from the poor networks between startups, and between the private and public sectors. Weak connections within the ecosystem affect the knowledge-sharing and support mechanisms that are so essential to tech startups in overcoming operational and business challenges. Africa's tech startups would benefit from greater cooperation between founders, tech hubs, universities and the state in order to open up opportunities, overcome the skills shortages, and attract and retain talent.

## Close the Funding Gap to Secure Investment of \$90 Billion for Tech Startups by 2030

There has been rapid growth in funding for Africa’s tech startups since 2015, as shown in Figure 2, but the gap between the continent and other regions is increasing. For example, Africa attracted just over \$1.4 billion in 2020, which more than tripled to \$4.9 billion in 2021. Latin America meanwhile secured \$4.2 billion in 2020, which more than quadrupled to \$19.6 billion in the same period. At the other end of the spectrum, North America attracted \$150 billion in 2020, a figure that rose to \$330 billion in 2021.

**Figure 2 – Funding from venture capital for Africa’s tech startups over the past seven years**

	Venture-capital funding (\$ billion)	Year-on-year percentage change
<b>2015</b>	0.28	
<b>2016</b>	0.37	32%
<b>2017</b>	0.56	53%
<b>2018</b>	1.16	108%
<b>2019</b>	2.02	74%
<b>2020</b>	1.43	-29%
<b>2021</b>	4.90	243%

Sources: s Partech and Briter Bridges

Growth in Africa is skewed towards the “big four” markets of Nigeria, South Africa, Kenya and Egypt, with these countries accounting for 87 per cent of tech-startup funding between 2010 and 2020. The four sectors of fintech, agritech, health tech and energy tech secured approximately 60 per cent of funding deals in 2020. Last year fintech continued to be the leading sector, receiving up to five times

more funding than the second-placed sector of health. Lessons on how to attract more investment and innovation to the continent can be learned from the fintech sector so that leaders can make tech an enabler across all economic sectors. Also notable are gender inequalities, with all-male tech-startup founders raising 78 per cent of funding versus just 0.6 per cent for all-female.

Tech funding is dominated by money from outside Africa, with international investment accounting for 73 per cent of VC deals in 2020. This could go some way to explaining why nearly 20 per cent of funded African startups have their headquarters in North America – it is a useful strategy for those who need to meet the compliance requirements of foreign VCs. In order to widen the diversity of tech startups securing investment, Africa needs more local funding sources and mechanisms to complement this international capital. As is the case globally, funding for tech startups represents a higher risk for investors, which limits the types of funding and investor profiles. Yet governments and the private sector can implement innovative financing vehicles and protective policies to reduce and redistribute risk, and make investment feasible to a wider range of potential investors.

By 2030 Africa could attract more than \$90 billion in funding for tech startups, up from the current \$4.9 billion. To achieve this, governments will need to decisively address the factors affecting funding of tech startups. The existing investment landscape presents challenges and deters investors: our analysis takes a deep dive into the risks, the economic and regulatory disincentives, and the lack of diversity in funding solutions. We then follow up with policy recommendations to address these challenges.

## The High-Risk Climate

Both real and perceived risks deter investors based outside the continent, including:

**Information Asymmetries:** There is a positive correlation between the quality of data that investors have access to and the likelihood of investment. Asymmetries (i.e., an imbalance of knowledge between parties) diminish the ability of investors to take decisions, thus weakening how markets are able to function. Information flows across Africa remain a problem for stakeholders seeking to complete due diligence on tech-startup opportunities. Both investors and startups need trusted information on the people, financials, product (technology and services offered, and market coverage) and regulations involved. The absence of official databases in Africa on tech-startup investments adversely affects the regularity and rhythm of investment on the continent.

### Figure 3 – Investors and investing institutions are often deterred from exploring tech-startup opportunities in Africa because of a lack of reliable information

#### Investors

- Absence of information on the quality of the product
  - Inadequate details on the skillsets of the startup team
  - Unable to determine whether the team has the ability to execute the idea
- 

#### Financial and investing institutions

- Lack of information on the creditworthiness of startups

Source: TBI based on the work of [Peng Du et al](#)

Compared to the Single Digital Gateway in the EU, the US Small Business Administration and the Startup India Portal, Africa does not have reliable and comparable public information on tech startups. In 2020 close to 48 per cent of VC deals on the continent were either partially or entirely undisclosed. There is also a shortage of information on tech-startup revenues and governance, which can result in misreporting and misrepresentation. The near absence of credible public databases increases the costs of transactions and due diligence while reducing investor confidence and diminishing financing inflows to tech innovators.

**Volatile exchange rates:** In Africa, exchange rates fluctuate significantly, increasing the risks to investors. For tech startups, the price of many components (for example, servers located abroad) are in a foreign currency, partly due to underdeveloped technical and physical infrastructure in the countries of operation. Yet subscription fees and other revenue channels remain in local and national currencies. Risk-mitigation tools to address fluctuation are often cost-prohibitive and inaccessible, so unpredictable exchange-rate movements affect the bottom line of startups and their potential to grow and scale, which in turn puts off investors. In Nigeria, back in 2015, iROKOTV introduced an annual NGN3,000 (\$18) subscription plan for audiences but two years later, this fee had more than halved in dollar value due to currency depreciation, resulting in the company scaling back its Africa operations in 2020.

**Limited sources of investment:** The African investment landscape is not diversified. Between 2014 and 2020, 57 per cent of investment came from VC and private-equity investors while just 1 per cent came from institutional investors and 10 per cent from corporates. Local funding in tech startups was sparse, with only 22 per cent of investors participating in VC deals of African origins, compared to close to 40 per cent from North America. In the current landscape, startups are missing out on the funding but also

the knowledge and expertise that institutional and corporate investors bring to an investment landscape. Limited investment flows originating from within Africa results in tech gains being siphoned away from the continent, and not enough reinvestment returning to the ecosystem.

**Lack of engagement among institutional investors:** Different investors are needed by startups throughout the pre-seed, seed, growth and mature stages of their lifecycles. Institutional investors play a crucial role in providing finance at the growth and expansion stages during which startups seek to scale up and expand to new markets, moving into high-growth phases. The three major institutional investors – pension funds, sovereign-wealth funds and insurance companies – hold \$1.8 trillion assets in Africa. However, sovereign-wealth funds, for example, only contributed \$50 million – equivalent to 1 per cent – to tech startups between 2014 and 2020. Globally, the funding landscape is experiencing much more diversification of investment sources, with institutional investors playing a far larger role than in Africa.

Three factors explain this hesitancy. First, in most African countries, institutional investors such as pension funds can only invest 10 per cent of assets under management into private equity, with actual allocations often far lower. Second, these investors are often unfamiliar with tech and tech startups as an asset class. Finally, most institutional investors favour both low risk and return on investment, which are not typically offered by tech startups.

**Limited corporate VC activity:** Corporate venture capital (CVC) – when large corporations invest in innovative startups – is an integral part of any tech ecosystem, providing growth financing and serving as a launchpad for startups. Globally, the share of CVC funding for startups generally has risen significantly of late, reaching \$73.1 billion in 2020, an increase of 24 per cent on 2019. In Africa, however, the share of CVC participation in VC deals between 2014 and 2020 was just 10 per cent. Solutions must be found to unlock CVC, which represents an important potential source of funding; the value of Africa's top 250 companies increased by 69 per cent last year from \$425.5 billion in 2020 to \$710.2 billion in 2021.

**Unfavourable commercial loans:** Financial institutions accounted for just 2 per cent of tech-startup funding between 2014 and 2020. Very high interest rates of between 18 and 25 per cent, in addition to complex application procedures, high-collateral requirements and stringent credit criteria, mean that commercial loans do not tend to be suitable for startups. Furthermore, startups often require more than just finance from their investment partners, with other needs typically including management training and mentorship. These are unlikely to be provided by institutions such as banks in Africa or indeed other parts of the world.

**Underdeveloped investment vehicles:** Africa suffers from an absence of financing vehicles. While there is potential for more capital to be channelled to startups especially at the early stages, the existing mechanisms are limited. Innovative investment vehicles for smaller ticket sizes (relatively small

investments by VCs) at the funding phases of early stage, pre-seed and seed would help to address gaps in funding that other sources may not.

**Few exit options:** In the African tech ecosystem, exits are seen as the exception, rather than the norm, because of insufficient liquidity events, i.e., an event that allows early investors in a company to cash out some/all of their equity. There are four stock exchanges (South Africa, Morocco, Egypt and Nigeria) in Africa with a market value of more than \$30 billion. There are only two African startups that have exited through an initial public offering (IPO): e-commerce platform Jumia was the first, but was listed on the New York Stock Exchange, while Egyptian fintech Fawry went public on African soil.

Besides the stock market, mergers and acquisitions as well as future funding rounds provide other options for exits. There have been notable acquisitions in recent years yet African tech startups still do not have the profile to boost confidence in the ecosystem and expectations around exits. Potential investors continue to overlook the tech sector as an exit option for their investments.

## Recommendations to Close the Funding Gap

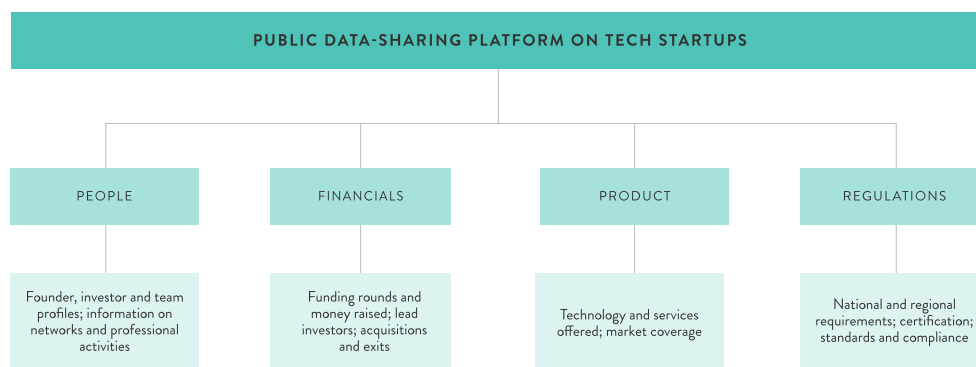
In the short to medium term, governments should focus on the necessary policy levers to attract funding from foreign and domestic investors. The measures should focus on addressing information asymmetries through public databases and developing the necessary financing vehicles.

### Establish a Public Data-Sharing Platform on Tech Startups

Governments should provide a platform on which investors can access reliable information about tech startups to reduce information asymmetries. While individual countries should prioritise building national databases in the short term, these should be harmonised into a regional database as soon as is practical, with clear guidance on national tech-investment laws and regulations to reduce the transaction costs for cross-border activities. Efforts to make information on tech startups publicly available have been launched by VC4A, Partech, The Big Deal, Briter Bridges, Disrupt Africa and others but most – for now – are partial in coverage or available only to paying subscribers. A framework for a national platform is outlined below.

National governments should actively set up and maintain databases driven by public-private collaboration. While each government can define its own standards, regional bodies such as the AfCFTA, the African Union (AU) and the United Nations Economic Commission for Africa (UNECA) should define common standards for a regional database on tech startups that connects all the national databases.

**Figure 4 – Data about the people, financials and products of tech startups should feature in new national and regional public databases**



Source: TBI

While governments should lead the process of maintaining public data, they should also actively engage the private sector in the design and implementation process. Tech-startup information, such as company tax and ownership data, can be provided by statutory agencies. Certified incubators and hubs should also play a role in feeding information about startups under their umbrella into the national database. Of course, any platform is only as useful as the data it contains, and the active and direct participation of tech startups and investors is essential.

For registered database members who do maintain high-quality data, including tech startups and investors, they should have access to government- and donor-backed funding incentives. For example, government procurement contracts relevant to tech startups could be advertised and promoted to founders and investors who are engaging with the platform. In terms of compliance and certification, government agencies can expedite the application process for registered members. The benefits to startups and investors who maintain quality data should include opportunities that are exclusive to database members.

### **Develop Innovative Financing Vehicles**

Closing the funding gap requires the development of innovative financing mechanisms that meet the needs of the African tech ecosystem.

### **Innovation Funds**

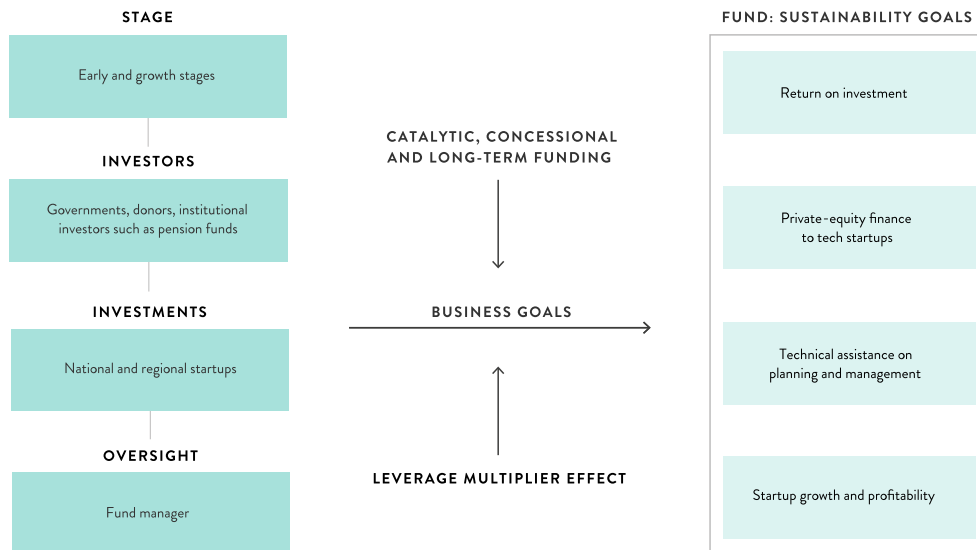
Governments should establish an innovation fund as a critical investment vehicle to de-risk, catalyse, and crowd-in investment and commitment from the private sector and donor community into the tech-

startup ecosystem. Leading examples include the Rwanda Innovation Fund, formulated to support local innovation.

The donor community, including the World Bank, the International Finance Corporation (IFC) and the African Development Bank (AfDB), should support the development of innovation funds by providing the catalytic, flexible, patient and risk-tolerant capital needed to attract investment into nascent tech ecosystems. More financing initiatives, such as the \$30 million concessional loans the AfDB provided to Rwanda to support the establishment of the Rwanda Innovation Fund, need to happen across the continent.

The fund should provide capital to startups at the seed and early stages, which operate at both the national and regional levels. Beyond providing capital, the fund should also offer technical assistance to build capacity for business planning and management to ensure growth and sustainability. Investments should be complemented by an initial government commitment to the fund, and this would play a de-risking and catalytic role to attract more investment from other sources.

**Figure 5 – Set up government-backed innovation funds to support founders and investors with catalytic capital**



Source: TBI

**Fund of Funds**



In partnership with donors and investors, governments should establish a “fund of funds” to develop risk capital (funds allocated to speculative activity) for startups at the early stages of their growth. Like the innovation fund, the fund of funds should be managed independently by a fund manager with experience of the Africa tech ecosystem. This fund would provide the necessary risk capital to VC funds in the ecosystem to then invest in early-stage startups. Such a move would be particularly crucial in nascent ecosystems with underdeveloped VC networks. A recent example of a national fund of funds is ANAVA, the Tunisian vehicle established to scale up funding for startups and innovative enterprises. The fund launched with a target size of €200 million to invest in 13 VC funds dedicated to startups in the seed, early and late stages.

### **Investment Syndicates**

For the purposes of this report, syndicates are innovative special-purpose investment vehicles that channel financing from various investors into tech startups. Syndicate partners with experience of the tech-startup ecosystem take the lead. An example of a syndicate is local or regional angel networks that invest in startups to support local innovation. Syndicates allow investors to back several deals with small amounts of money, investing as little as \$1,000. This approach lowers the barrier to entry, democratising access to tech-startup investment. The scope of investment for syndicates is mainly focused on pre-seed, seed and early-stage startups operating at national and regional levels. This way of operating reduces risk, as smaller investments are spread out across a number of tech startups. Within this investment landscape, governments should set out regulations that guide the formation of these investment vehicles while also protecting investors.

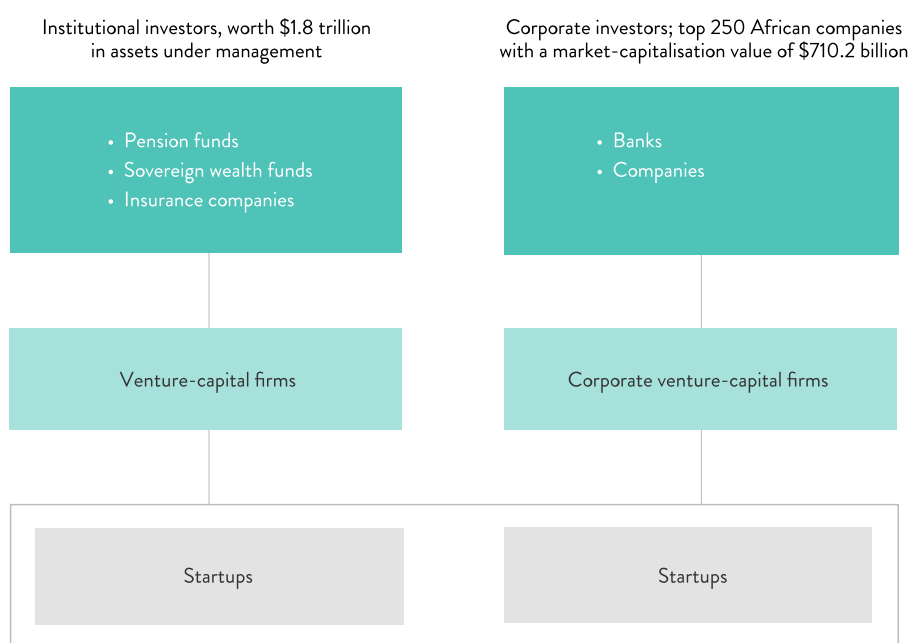
### **Crowdfunding Platforms**

Crowdfunding platforms can increase access to finance for startups and make investment attractive to a range of investors. Crowdfunding in Africa is still in its infancy but has significant potential given Africa’s keen adoption of digital finance, including mobile money and e-banking, and the relatively low penetration of traditional financial institutions. There are several crowdfunding platforms operating on the continent such as Women Fund, GetEquity and Afrikstart; however, the scale at which they operate is still small. Crowdfunding platforms should focus on pre-seed, seed and early-stage startups. Operators of crowdfunding platforms should leverage innovation around mobile technology and mobile money to realise the opportunities open to many in Africa, including using Unstructured Supplementary Service Data (USSD) infrastructure for offline users. Operators should provide incentives to encourage users to invest in local startup ecosystems and implement performance-based scoring systems. To offer certainty and stimulate volume, governments should regulate users and investors as Nigeria did in January 2021.

## Unleash Capital from Institutional and Corporate Investors

In the longer term, Africa's tech ecosystem including governments needs to diversify its sources of funding to encompass institutional and corporate investors who can bring in much-needed domestic capital.

**Figure 6 – Unleashing flows of capital from both institutional investors and corporates**



Source: TBI

### Pensions

Africa's institutional investors have seen a significant rise in their assets under management – a total of \$1.8 trillion in 2020, up from \$1.2 trillion in 2017 – more than half of which is placed in pension funds. Pension funds have the biggest reach of any institutional investor on the continent but often lack the expertise, resources and risk appetite to invest in tech startups. But unlocking them as a source of investment for tech startups could be undertaken safely and securely, offering mutual benefits. Examples of where institutional investors, namely pension funds, are investing in tech startups include Sweden, where 16 per cent of VC funding comes from pension funds, and Israel, where institutional investors are offered safety nets by the government in case of losses.

Tech-startup investment is typically too high risk for a pension fund's investment model. Given the critical nature of money managed by pension funds, risk-reduction measures need to be put in place to protect workers' pensions. Pension funds should be allowed to invest only a small percentage of their assets under management, with a cap on startup investment, and guidelines limiting the focus to high-growth and post-revenue opportunities, including via co-investment. Governance of this type of investment could take place through innovatively designed vehicles such as government- or VC-run funds.

While marginal in terms of the overall pension-fund market, such steps could be transformative. Even a small allocation would translate to a significant amount of capital channelled to the tech-startup ecosystem. Based on estimates from 2019, if the five leading pension funds in Africa (based in Nigeria, Kenya, Namibia, Botswana and Mauritius) were to allocate just 2 per cent of their assets, this would release over \$1.4 billion into tech startups.

### **Corporate Venture Capital**

Corporate venture capital is also key to unlocking growth of the tech-startup ecosystem, offering the opportunity to go beyond financing and serving as launchpads for expansion. An [example](#) is the recent corporate partnership between MarketForce, a Kenyan B2B retail and financial-service-distribution startup, and Cellulant, a pan-African payments company, which enabled MarketForce to expand to new markets.

Governments can encourage corporates to invest by:

1. Enacting regulations that increase the capacity of corporations to allocate assets to private-equity and VC firms. In Nigeria, the government has passed the Banks and Other Financial Institutions Act (BOFIA) 2020, which allows the banks to allocate up to 40 per cent of assets to equity investment, including in technology startups. This legislation enables banks to collaborate with other VCs to set up their own corporate VC arm.
2. Embedding tech-startup financing as a core component of corporate social responsibility for companies, and reviewing the codes and standards that govern these investments in order to prioritise large corporations that demonstrate a strong commitment to local tech-ecosystem development.

## A Tale of Three Sectors: Fintech, Agritech and Climate Tech

Fintech and agritech are two of the most important tech sectors in Africa today, each having ranked in the top five of VC equity deals in 2020. Climate tech is currently limited in scale but has been identified as a future growth area. Each of these technology types faces different challenges and growth drivers.

Fintech is the largest and fastest-growing tech sector on the continent, and attracted 54 per cent of total tech funding in 2019, representing growth of nearly 400 per cent since 2016. Africa is a hotbed of financial innovation and is second in the banking market globally by growth and profitability. The continent is home to a growing number of fintech “unicorns” with four – OPay, Wave, Swvl and Flutterwave – achieving this status or being “minted” in 2021. Africa’s fintech success is driven by mobile money, with the continent accounting for about half the world’s mobile-money customers. Working closely with mobile-network operators allows fintech firms to leverage their existing network of infrastructure, airtime agents and customers.

### Why is fintech a key sector for Africa?

An estimated 350 million adults in sub-Saharan Africa – approximately 31 per cent of the total population – remain without access to any banking services. Fintech has the potential to leapfrog the traditional banking sector and expand financial inclusion across the continent. The first mobile-money product in Africa was launched in Kenya in 2007. The sector has evolved rapidly since then, and mobile-money products now include savings, lending, insurance and money transfers. As devices have become more affordable and data costs continue to fall, more sophisticated products have emerged serving new customer bases – such as small and medium-sized enterprises – often ignored by traditional lenders.

### The African landscape

Mobile money continues to dominate in Africa both by usage and investment. Fintech firms specialising in digital payments dominate sub-Saharan Africa’s tech-investment landscape while those dedicated to digital banking and lending follow closely behind. Traditional banks are now seeking to catch up with Africa’s mobile-driven fintech revolution, with some repositioning themselves as fintech providers. Equity Bank (now Equity) in Kenya has announced that it is transforming itself from a bank into a tech company. Ecobank seeks to support new tech startups, and launched the Ecobank Challenge in 2017 to identify fintechs with the potential to be scaled up.

Kenya and Ghana account for much of the mobile-money fintech market in Africa. In Kenya, financial-services transactions through mobile wallets and phones represent 87 per cent of the country’s GDP, while in Ghana, they account for 82 per cent. Factors including market size, opportunities for frictionless transactions and data-sharing among companies ultimately determine

growth: the stronger they are, the more favourable it is for those countries' potential fintech growth.

Low market penetration by traditional banks combined with increasing connectivity and smartphone use mean the African fintech market is ripe for further growth. By 2025 the continent will be home to 1.5 billion people, most of whom will have grown up in the internet era. With one of the fastest-growing middle classes in the world, consumers are demanding more sophisticated but efficient financial products. The AfCFTA will include a plan for a pan-African payment and settlement system, greatly enabling interoperability among providers. These factors attract customers to fintech and encourage investors.

### **Areas for policy action**

**Invest in connectivity and mobile access:** Key to the continued expansion of fintech is the expansion of connectivity and adoption of mobile phones by those who have been historically excluded from this sector, including women, people with disabilities and rural residents. Governments must also invest in the broader telecommunications infrastructure required for effective and affordable network and internet access, especially in last-mile communities.

**Improve interoperability:** Without a critical mass of customers and third-party providers building on fintech products, their use to retail customers is limited. Many African countries' markets are too small by themselves for providers to reach that critical mass, but prospects for a pan-African market are improving. The AfCFTA offers huge potential for the interoperability of continent-wide payments and policymakers should support the implementation of the newly launched Pan-African Payment and Settlement System.

**Rationalise taxation:** Too often governments view the telecommunications sector as an easy source of tax revenue. However, excessive taxation (see Figure 8 below) can have longer-term, adverse effects on economic development goals such as financial inclusion. Taxation on mobile-phone airtime and transactions may not expand the tax base significantly but, rather, may reverse the gains on retail-based electronic payments and financial inclusion. Increasing taxes on mobile-phone transactions may risk stalling progress on digitalisation and fiscal-policy design as well as on revenue administration.

**Ensure consumer protection:** Policymakers must put in place the appropriate consumer- and data-protection rules to ensure consumer trust. This is especially important as the sector innovates with new products, such as digital micro-credit, that are directed to sectors of the population who are currently poorly served, and for which legislation has yet to be devised and put in place. A set of principles that ensures customers' wellbeing and a good-faith approach from fintech providers is key.

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## Build a Flourishing Business Environment for Tech Startups

An enabling business environment is a prerequisite for a thriving tech-startup ecosystem, and to developing the national and regional markets that support its growth locally and across borders. The right regulatory and policy frameworks will drive investment, promote innovation, foster competition and encourage sustainability.

African tech startups face several challenges that inhibit tech entrepreneurs from launching and growing their businesses. Sub-Saharan Africa remains one of the lowest-performing regions according to the World Bank's Ease of Doing Business ranking, with an average score of 51.8, well below the high-income economy average of 78.4 and the global average of 63. An entrepreneur in a low-income economy typically spends around 50 per cent of the country's per-capita income to launch a company, compared with just 4.2 per cent for an entrepreneur in a high-income economy.

Concerted action is being taken by leaders to improve the business environment with the implementation of dedicated legislation in many countries and the creation of AfCFTA, which promises an SDM across the continent. But for African tech to fulfil its potential, policymakers need to implement transformative measures to improve the business environment, addressing the challenges that limit growth: the digital-skills gap, insufficient infrastructure, mixed institutional capacity, restrictive or inconsistent policy conditions, and an inability to access competitive regional and international markets.

### The Skills Gap

African policymakers are clear that tech is instrumental to providing good-quality employment opportunities for their large and burgeoning youth populations. In the Institute's discussions with African leaders, this was unanimously highlighted as the key motivation for prioritising the tech-startup ecosystem in their countries. Yet Africa's human-capital challenge is also a factor in inhibiting growth of the tech-startup ecosystem.

To become competitive as a tech superpower, building digital and entrepreneurial skills is critical – in particular in applications development, artificial intelligence, digital-content production and data processing. An estimated 230 million jobs across the continent will require digital skills by 2030 yet there is short supply of tech-related skills in Africa compared with more mature tech ecosystems. The World Economic Forum reports that 65 per cent of African CEOs believe the skills gap impacts their ability to innovate effectively and 45 per cent of young Africans feel their skills are inadequate for their

jobs. The loss of tech talent – individuals and startups – is a major challenge for countries trying to nurture the local tech ecosystem. Each year, 70,000 skilled professionals leave the continent, diminishing the development of industries that require their skills.

Indirect jobs created through digital innovations positively impact regional economies. In Kenya, the growth of mobile money has created 300,000 mobile-money agent roles since 2007. Additionally, widespread access to mobile money has allowed 185,000 women to pivot from subsistence agriculture to retail and the development of small businesses.

## Inadequate Digital Infrastructure

Reliable and affordable digital infrastructure is fundamental to the success of tech startups. Where this infrastructure is insufficient, especially where there is limited connectivity, there is an increased cost to tech providers.

**Internet access:** Only 28.2 per cent of people in Africa use the internet compared with 83 per cent in Europe. The figures are lower for women than for men. Limited connectivity on the continent not only limits the user base and the market for tech innovations, but also means that such life-changing innovations fail to bridge the digital divide. Consequently, entrepreneurs can face high costs in securing the connectivity they need to achieve success.

**Cloud technologies:** As an enabler of flourishing tech ecosystems, cloud technologies offer extensive benefits to tech startups. Hyperscale cloud technologies provide greater computing and data-storage capacity, higher performance and better security at lower costs compared to on-premises alternatives. They also lower barriers to innovation, allowing businesses to increase their computing capacity many times over. But the adoption of hyperscale cloud technologies is uneven across countries. Concerns about data security and jurisdiction, and about the reliance on a small number of powerful global players, have meant that many African countries have continued to use on-premises infrastructure, storing data locally. Less than 20 per cent of low- and middle-income countries (LMICs) have modern data infrastructure, such as co-location centres and direct access to cloud-computing facilities, and this is a major barrier to making cloud technology accessible to all.

**Fragmented digital infrastructure:** Despite the significant growth of Africa's digital space, the supporting infrastructure remains siloed and fragmented at the national and regional levels. Africa has more than 171 mobile-money wallets – the majority of which are non-interoperable – more than 1000 banks, and more than 12 card networks in 55 countries with little integration. This increases the cost of scalability for tech startups, which struggle to access cross-border markets due to technical barriers. In markets such as Nigeria and Egypt, where the financial infrastructure has been harmonised and

integrated through policy, there is a corresponding growth in these countries' tech ecosystems, especially within fintech. Globally, levels of payment interoperability have a correlation with levels of investment, and the costs of starting and scaling businesses, as illustrated below.

**Figure 7 – Correlation between technical integration, tech investment and the cost of doing business**

Region	Interoperability ATMs/Point- of-sale	Investment per capita (\$)	Cost of starting business (% of gross national income)
North America (USA and Canada)	97%	224.47	0.6
Europe	97%	44.14	3.38
Asia	75%	18.77	10.56
Latin America	10%	9.52	38.67
Africa	25%	1.04	33.35

Sources: [TheGlobalEconomy.com](http://TheGlobalEconomy.com) and [Bis.org](http://Bis.org)

### Restrictive Institutional and Regulatory Frameworks

Restrictive and inconsistent policy conditions are also holding back the growth of the tech-startup ecosystem in many African countries. Business registration for tech startups takes far longer than in other parts of the world. In Australia, for example, the process requires two procedures that can be completed in just two days at a cost equivalent to 0.8 per cent of the country's per-capita income. An entrepreneur in Djibouti, on the other hand, needs to go through 11 procedures that take 37 days, and cost the equivalent of 195 per cent of the local per-capita income from inception through to completion.

**Regulatory incoherence:** At the regional level, regulatory and policy fragmentation is a major issue. There are different regulatory bodies in each of the 55 countries, with different requirements for tech companies and investors. Stakeholders who seek to offer their services across the continent must absorb the costs of scaling in different markets. Founders and investors must pay to meet different regulatory



requirements in areas such as minimum capital, taxes, work permits and intellectual property rights. This makes the region uncompetitive compared with the EU, India, China and North America, where regulations are harmonised and tech startups only have to deal with one regulator.

Even at the national level, consistency is paramount. Entrepreneurs who contributed to this research noted that in many contexts, a lack of consistency between policies meant that regulations aimed at supporting tech startups – such as tax incentives – were being undermined by restrictive regulations elsewhere.

**Inconsistent taxation of digital services:** The digital boom in Africa has made digital services an attractive and easy source of tax revenue for governments. This has the potential to harm tech startups. Revenue from telecommunications, for instance, represents one of the most lucrative and reliable income streams for many governments on the continent, but there is significant evidence that taxing mobile-money transactions, for example, comes with costs that far outweigh benefits, shrinking the market for mobile-money providers, setting back financial inclusion and disproportionately affecting the poorest. Following Uganda’s introduction of a mobile-money tax, usage decreased by 24 per cent. Many African countries have introduced or are considering the implementation of a mobile-money tax, despite the high costs to consumers and tech providers.

Digital taxes, if not progressively implemented with safeguards for low-income groups, could affect adoption and therefore increase digital exclusion. They are also likely to limit the growth of digital services, and associated jobs and revenue. Leaders seeking to digitally transform their economies may require additional regional and global encouragement, as well as financial incentives to reduce taxes on the ICT sector. This could take the form of donors offering governments cash incentives to push through transformative policies, including liberalising the sector or increasing transparency in spectrum-allocation measures, in order to increase ICT competition. It might include other types of financial and non-financial incentives to encourage ministries of finance to accept painful short-term revenue cuts in exchange for the promise of medium-term economic benefits from increased internet access.

**Figure 8 – Comparing mobile-money tax regimes in African countries**

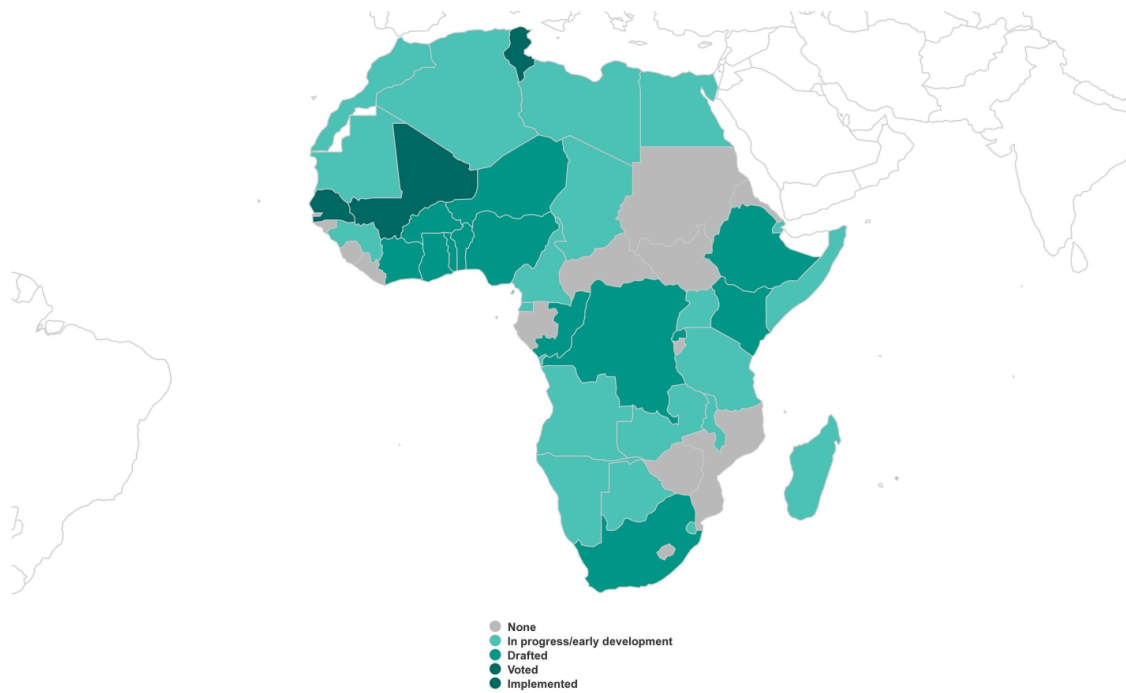
Country	Type of tax	Date/proposed date	Taxation threshold	Mobile-money accounts
Uganda	Mobile-money levy	July 2018	0.50%	27 million

Zimbabwe	Mobile-money levy/e-levy	October 2018	2%	9.4 million
Tanzania	Mobile-money levy	July 2021	Minimum 0.1%	33 million
Ghana	E-levy	February 2022	Proposed 1.75%	12 million
Cameroon	Mobile-money tax	January 2022	0.20%	19.5 million

Source: [Rest of World](#)

**Startup acts:** Several African governments are working to remove and rationalise the barriers to tech-startup growth through the implementation of legalisation aimed at supporting tech entrepreneurs. Dedicated startup legislation to promote startup growth has been or is being developed in 35 African countries.

**Figure 9 – Plotting the progress of startup legislation across Africa**



Source: TBI

This legislation sets out far-reaching policies that aim to create a conducive environment for high-growth technology-enabled businesses: supporting entrepreneurs to start businesses, increasing incentives for investors to put their money into promising companies and making it easier for startups to operate. Measures include tax holidays and other tax incentives, intellectual property laws, streamlined processes and one-year leave periods for entrepreneurs with the right to return to their previous jobs.

**Figure 10 – A matrix of policies included in African startup legislation**

Country	Dedicated authority to manage implementation of the law	Provisions for startup business support (training, legal, accounting)	Financial support for startups	Tax incentives for startups	Tax incentives for investors	Strengthens research and development	Intellectual property protections	Support to accredited incubators
Ghana	x	x	x	x	x	x	x	x
Kenya		x	x			x	x	
Senegal	x			x				x
Tunisia	x	x	x	x	x		x	
Mali	x	x	x			x		
Ethiopia	x							x
Nigeria	x	x	x	x	x	x		

Source: TBI

### Inability to Access Competitive Regional and International Markets

Africa has the lowest rate of global intra-continental trade among four continents, accounting for 16.6 per cent of total exports in 2017, compared with 68.1 per cent in Europe, 59.4 per cent in Asia and 55 per cent in America. It is also still significantly more expensive to trade with Africa than with other regions around the world. Fragmented markets across the continent limit the ability of African tech startups to scale their businesses, inhibiting efficiency and constraining economic growth. African consumers typically have low purchasing power: average disposable income is \$5 per day, compared with \$6 per day in India. Although India has similar purchasing power, startups in India have access to a harmonised market of 1.4 billion people. African startups still face challenges scaling across borders due

to the multiplicity of regulatory bodies and intra-jurisdictional barriers such as work permits, licences and taxes. This impacts their ability to leverage economies of scale to achieve meaningful growth and profitability.

The AfCFTA agreement, passed in January 2021, forms the world's largest free-trade area by connecting close to 1.3 billion people, with a combined GDP of \$3.4 trillion, and consumer and business spending valued at \$4 trillion. Achieving the agreement's full potential will depend on each nation ensuring enforcement and implementation. The AfCFTA is a positive step for tech startups and holds great potential for the ecosystem's growth. Providing tech startups with access to a market of 55 countries will facilitate cross-regional expansion, which in turn will attract more funding. Studies show that startups with a multi-regional presence attract more VC funding than those that operate in one country or a single region. And in addition to increased funding for startups, a harmonised African market will enable citizens to gain access to more relevant and lower-cost digital content and services, and will promote the skills and opportunities necessary to participate and thrive in the new economy. It will also increase revenues and return on investments for tech startups, investors and governments.

## **Recommendations for Building a Flourishing Business Environment**

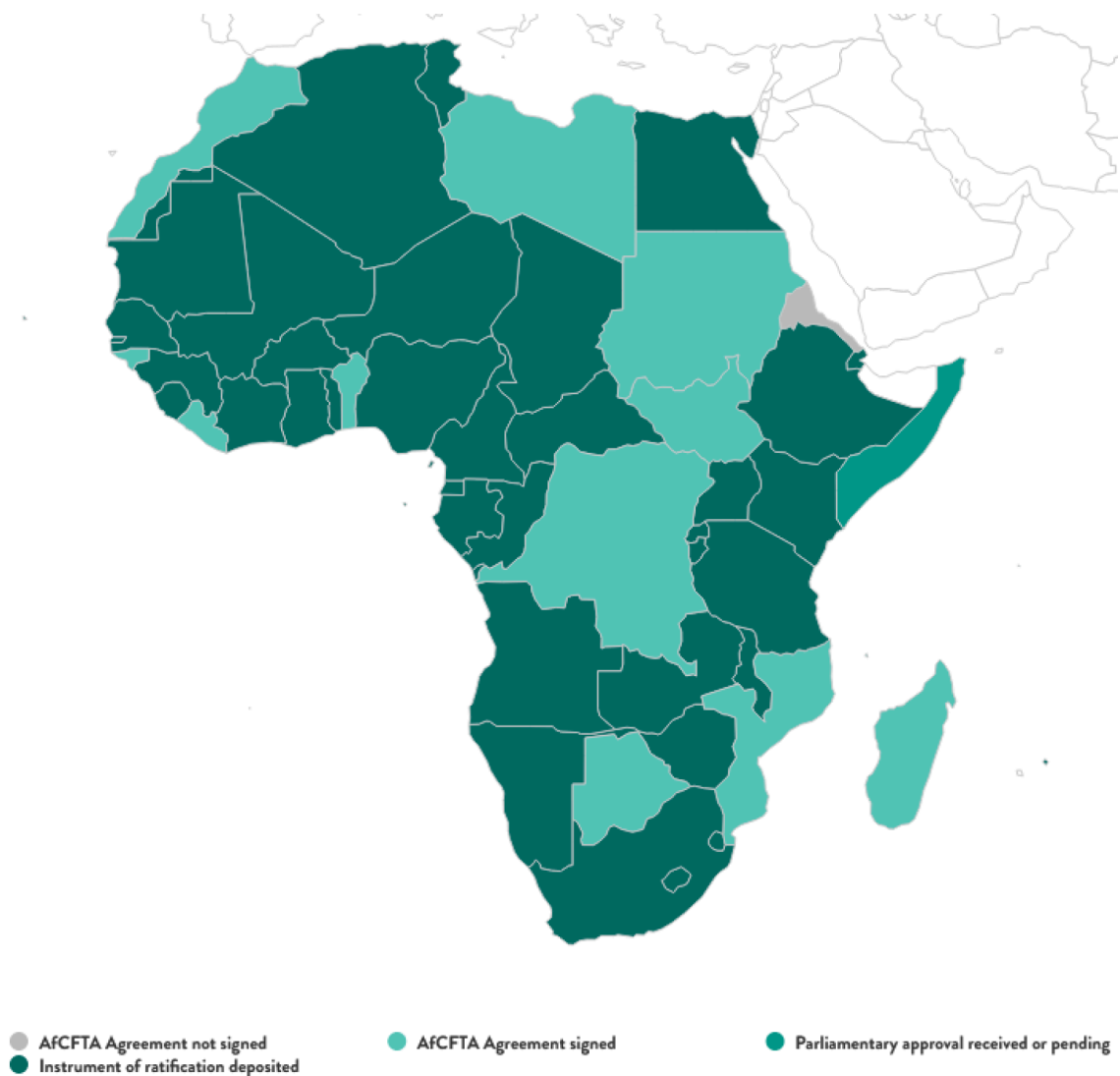
The following steps set out how governments and regional bodies can create a business environment in which tech startups can thrive.

### **Short Term: Laying the Foundations of the Ecosystem**

#### **Create a Single Digital Market by Prioritising Implementation of the AfCFTA**

Implementing the AfCFTA agreement needs to be high on national agendas. Facilitating free movement of goods, person, services and capital, an SDM is where businesses and individuals can seamlessly access and undertake online activities under conditions of fair competition and data protection, irrespective of their nationality or place of residence. The AfCFTA offers the building blocks of such an SDM, which would accelerate tech-startup growth across the continent by lowering costs and increasing market access.

**Figure 11 – Moving towards continent-wide ratification of the African Continental Free Trade Area must be a top priority for enabling a single digital market**



Source: TBI/Tralac

The AfCFTA is not the only organisation actively building an SDM. Smart Africa, which represents 32 African countries, is committed to creating an SDM by 2030 through the adoption of national and regional digital-economy frameworks in accordance with the African Union 2063 digital-transformation agenda.

**Figure 12 – The scope of the AfCFTA agreement and its potential impact on the tech ecosystem through a single digital market (SDM)**

AfCFTA Protocols	Objective	Potential impact on SDM and tech ecosystem
Phase I Negotiations		
Trade in goods and services	Boost intra-African trade in goods and services through: (1) progressive elimination of tariffs; (2) progressive elimination of non-tariff barriers (NTBs); (3) enhanced efficiency of customs procedures, trade facilitation and transit	<ul style="list-style-type: none"> <li>• Trade and customs barriers for goods purchased online removed</li> <li>• Reduced prices of goods and services for local consumption due to economies of scale</li> </ul>
Trade-dispute resolutions	Provide for the establishment of a dispute-settlement body with authority to establish panels to receive and determine trade disputes	<ul style="list-style-type: none"> <li>• Dispute-resolution platform for investors, business owners and consumers</li> </ul>
Phase II of Negotiations		
Investment	Facilitate cross-border investment to support regional or continental economic integration and growth.	<ul style="list-style-type: none"> <li>• Increased cross-border investment into tech startups</li> <li>• Stimulate investment into nascent ecosystems and sectors such as agritech</li> </ul>

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Intellectual property rights	Establish and enforce intellectual property rights in recognition of the significance of links between IP and trade	<ul style="list-style-type: none"> <li>• Facilitate innovation in the tech ecosystem</li> <li>• Increased technology transfer across the region</li> </ul>
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Competition policy	Promote competition and consumer protection at the national level and deal with cross-border anti-competitive practices in Africa	<ul style="list-style-type: none"> <li>• Protect and support the entry of tech startups into already established markets</li> <li>• Protect consumers of tech-startups' products from harm</li> </ul>
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Phase III of negotiations

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E-commerce	Ensure e-commerce, digital services and the functions that support them all work across borders. These include data protection and privacy, electronic-trade facilitation and consumer protection	<ul style="list-style-type: none"> <li>• Accessible, affordable and interoperable digital-payment system</li> <li>• Consumer-protection guidelines that build online consumer trust in startups and facilitate B2C e-commerce</li> <li>• Data protection and privacy frameworks that allow for cross-border data transfer</li> </ul>
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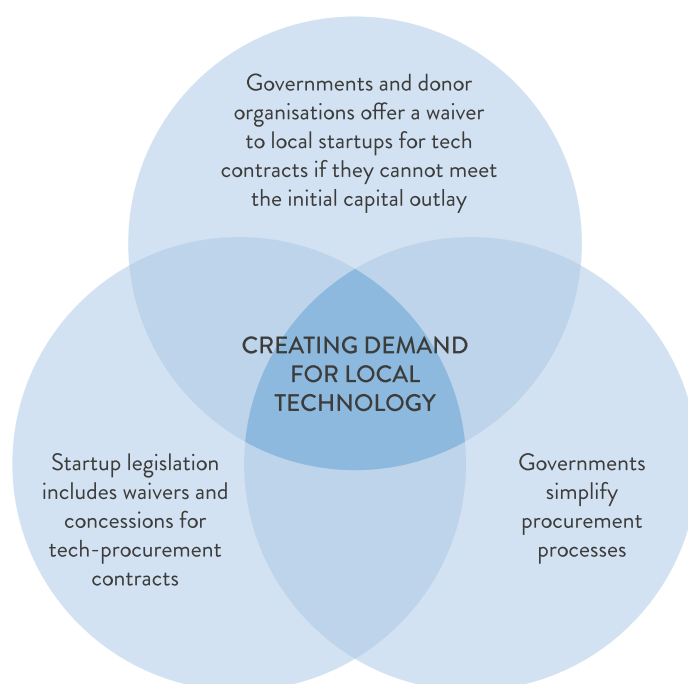
Source: TBI



## Generate Demand for Local Tech Solutions

Governments can help to stimulate demand for local tech solutions through procurement and by becoming customers of startups. Local startups can offer governments bold and innovative solutions to complex national challenges while governments in return can add validation to startup ventures as part of a mutually beneficial relationship. Since procurement processes for government contracts entail significant resources just to bid, governments and donor organisations should offer waivers to local startups who cannot meet the huge capital or revenue requirements to compete. This would increase the likelihood of startups winning public-sector contracts. Similarly, any startup legislation developed across the continent should include waivers and concessions for tech procurement.

**Figure 13 – A three-step approach to generating demand for local tech solutions, including an active role for governments**



Source: TBI

Governments can further incentivise this process by rewarding larger companies that work with startups when the startups bid for tenders with higher scores, making success more likely. Government-support mechanisms such as [Scotland's Supplier Journey](#), which provides end-to-end guidance on how to bid for public-sector contracts, would facilitate increased participation from startups.

African leaders should also invest in research and development (R&D) that focuses on new and emerging technologies to make the region a technology frontier in the next decade. Setting up dedicated technology-research funds and directly supporting research labs in partnership with tech hubs and universities will attract jobs and skills to the region. New emerging technologies such as AI, robotics, digital manufacturing and data science will require R&D that ensures local competencies are developed, while the diffusion of research output through formal and informal networks will help to drive tech innovation and growth. These funds should be available to universities and tech hubs to access and sponsor spin-off projects that have market potential.

### **Implement Legislation to Support Tech Startups and Seek Their Regular Feedback**

Getting the policy environment right means engaging the tech-startup ecosystem in policymaking, and understanding the regulatory levers that can both support ecosystem growth and generate wider benefits. As detailed above, many countries have put in place dedicated startup legislation both as part of a concerted effort to improve the policy environment for startups, and as a vehicle for dialogue and engagement between the private and public sectors. There is no single formula for the right mix of policies although common measures are emerging, and many countries look to Tunisia and Senegal as models that have already made a demonstrable impact. Dedicated legislation may not be the right vehicle for every country, but participants at the Institute's [government roundtable](#) reported that the process provided a useful focus that helped them to convene the private sector and different parts of government around a clear and common goal. Sustained engagement between the public and private sectors is key to achieving the right balance in a given context and ensuring broad buy-in.

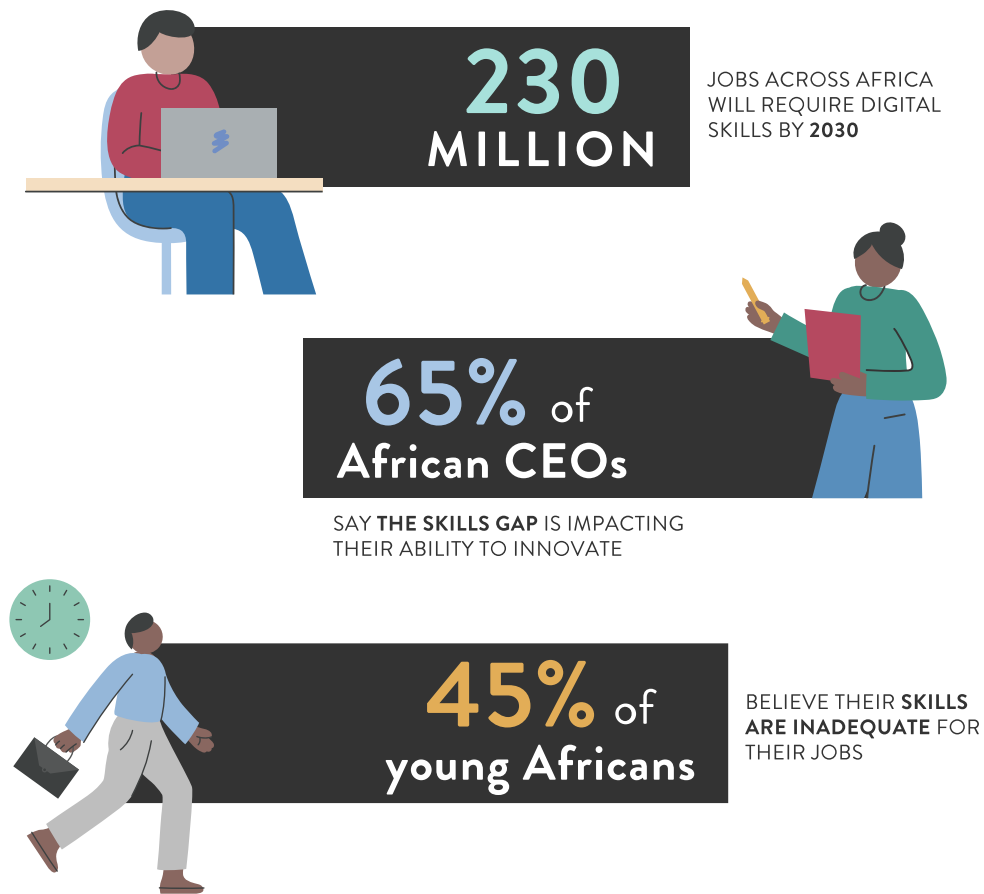
Engagement shouldn't end with policy formulation: leaders should seek ongoing feedback from the tech ecosystem on the challenges they face and the impacts that policies are having on their operations and growth. Governments should put in place a mechanism for gathering feedback from the tech-startup ecosystem, working through hubs and incubators. This mechanism should seek detailed feedback and provide a vehicle for continuous engagement, while policymakers should commit to taking swift and transparent action based on their findings.

### **Medium Term: Learning from Experience**

#### **Improve Digital Skills**

Governments should urgently address the growing digital-skills gap by creating opportunities at all education levels.

Figure 14 – More than 60 per cent of African CEOs say the skills gap is holding back innovation



Source: TBI/World Economic Forum

Narrowing this gap requires a long-term focus, with adjustments needed to school curricula, digital skills positioned as basis attainment alongside literacy and numeracy, and more access provided to advanced training.

**Upskill and retain existing talent:** In the immediate term, collaboration with local and international technology companies may provide an opportunity to provide high-quality digital-skills training. Training run by technology companies has already had a positive impact; for example, Grow with Google and Andela have trained more than 100,000 professionals in skills ranging from basic graphic design to advanced application development. Trainees have been matched with companies like Meta (Facebook’s parent company) and Alphabet (Google’s parent company) where they have then secured employment. In addition, Microsoft has established an African Development Centre (ADC) in Kenya and Nigeria that aims to build a pipeline of talent, also launching the “Game of Learners”, an annual hackathon where university students learn computer science while creating unique solutions to address their communities’ challenges. Governments have a role to play in identifying and attracting suitable partners, supporting

these operations via collaborations with local institutions and integrating them into recognised qualification frameworks.

Building partnerships with international universities may also help to bring world-class tech education to Africa. The Rwandan government has made significant investment through a collaboration with Carnegie Mellon University, which has opened a Kigali campus that aims to become a regional ICT hub. The programme will be made accessible to more people through the introduction of scholarships subsidised by the Rwandan government, which will cover 50 per cent of tuition fees.

Governments should play their part in incentivising and supporting individuals' professional development, reducing the risks associated with paying for training and taking time off to retrain. Income-contingent loans are one such tool that can help, as well as innovative models such as FORTE, which offers retraining at no cost to governments or individuals.

**Retain existing talent and attract diaspora talent:** Governments should consider a tech-startup visa initiative aimed at tech founders from other countries who wish to set up or move their business to a country in Africa. Tech-startup visa initiatives are already in place in several countries including Chile, Denmark, Portugal and France. Chile requires a physical relocation to the country where the business visa has been granted, while Estonia has an e-residency model that has established 13,000 new companies with virtual access to the EU single market. Similar visa programmes would help countries to attract foreign tech talent and grow their tax revenue. Following the implementation of the AfCFTA, the visa programme would offer access to Africa's SDM. Additionally, African tech-startup visas give countries the opportunity to get ahead of their competitors in Africa's nascent but fast-growing ecosystem. Having highlighted that startup legislation has picked up momentum, key benefits of the visa programme would be enshrined in the various legislation already introduced.

As part of the African tech-startup visa initiative, governments should launch – either individually or as a bloc – a year-long programme to encourage diaspora firms to return to the continent. Ethiopia is leading the way with its recent “Diaspora Tech Homecoming” initiative that hosted more than 400 attendees under the bigger umbrella of the “Great Ethiopian Homecoming” – launched by the country's prime minister. This homecoming is aimed at welcoming the Ethiopian diaspora to participate in a range of conferences across different sectors to foster sustainable and robust engagement.

**Developing the next digitally confident generation:** Over the longer term, digital skills must be embedded at every level of education and measured as basic attainment indicators alongside literacy and numeracy. Governments should assess and, if necessary, update their national curricula to help bridge the digital-skills gap. A greater emphasis needs to be placed on science, technology, engineering and maths (STEM), and skills such as coding, as well as ensuring that all students are provided with basic digital literacy. Strategic government investment alongside partnerships with international actors such as Giga to roll out connectivity within schools is a crucial part of this.

Ensuring that education is [tech-inclusive as well as tech-focused](#) can give every student access to a world-class education and build digital skills. As our [tech-inclusive education report](#) recommends:

“In the short term (one to two years), international organisations such as UNESCO should address existing gaps in access to education by funding and building a remote World Education Service (WES), free at the point of delivery and accessible to all through the internet as well as low-tech channels like feature phones.”

This should then be complemented in the medium term by government investment to create an education system with tech at its heart.

## **Long Term: Looking to the Future**

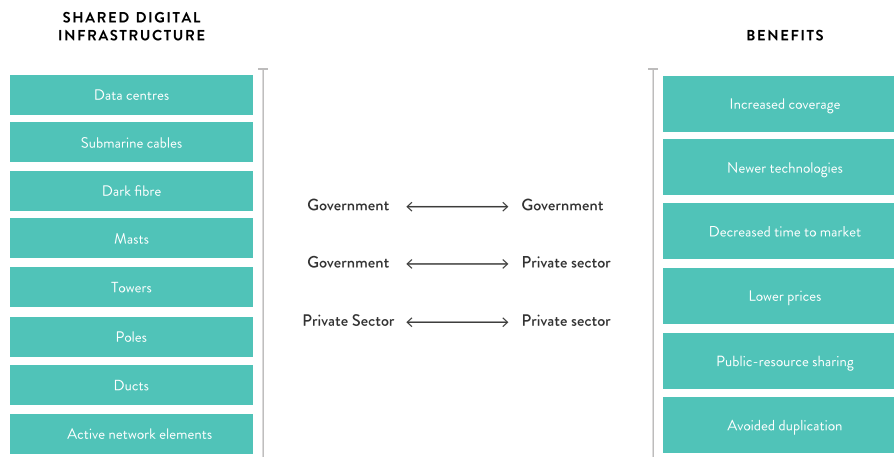
### **Strengthen Digital Infrastructure, Including Regional-Infrastructure Sharing**

Harmonised and high-quality digital infrastructure – connectivity, interoperability between payment systems, data storage – is key to the success of the tech-startup ecosystem in the region. Dedicated investment by governments to build out digital infrastructure can have [economic benefits that outweigh costs many times over](#). A detailed set of recommendations to reach universal access are set out in our paper, [“The Progressive Case for Universal Internet Access: How to Close the Digital Divide by 2030,”](#) along with an analysis showing that the economic benefits of doing so, according to the global average, outweigh the costs by a factor of 19. For sub-Saharan Africa specifically, it is by a factor of 16. Dedicated public investment, regulatory reform and public-private partnerships are key components of closing the digital divide. Regional coordination, such as that currently demonstrated by [Smart Africa](#), can drive down the costs associated with accessing the internet – specifically data and smartphones – that prohibit much of the developing world from coming online immediately.

Collaboration with private-sector providers can unlock critical investment to build out digital infrastructure. Positive progress in building out infrastructure includes the Google’s [Equiano](#) subsea cable and Facebook’s [2Africa](#) project that aims to lay 37,000 kilometres of subsea fibreoptic cable.

To unlock innovation, governments must also address barriers to the use of cloud technologies. Detailed recommendations for governments seeking to do this are set out in our [cloud policy paper](#). The Cloud and Data Centres for Africa initiative hosted as part of the [Smart Africa portfolio](#) and the AU’s [Convention on Cyber Security and Personal Data Protection](#) are seeking to address such challenges and identify best practice for cloud policy and data regulation on the continent.

**Figure 15 – Demonstrating the ways in which shared digital infrastructure enhances the business market for startups**



Source: TBI

Regional infrastructure-sharing, an agreement between two or more market players to share various parts of their infrastructure for the provision of services, can be an effective and affordable way to improve digital infrastructure. This has traditionally taken place between actors in the private sector but could in theory be between countries. It can also facilitate the deployment of more advanced networks such as 4G, Long-Term Evolution and eventually 5G through the use of previously established 2G and 3G infrastructure.

## **Agritech: A Sector Growing Against the Odds**

Agriculture is one of the most important sectors in sub-Saharan Africa, contributing around 18 per cent of GDP and employing more than 52 per cent of the population. However, Africa still lags behind South Asia and South-East Asia in terms of agricultural productivity and competitiveness. This is due to low mechanisation, insufficient irrigation and infrastructure, poor access to fair and transparent markets, lack of funding for research and development, and limited access to finance for farmers. As Africa's population grows and the continent grapples with the negative impacts of climate change on crop yield and livestock production, efficiencies driven by agritech will be key to ensuring people are fed and employed, and that the continent benefits from exports of higher-value products. The range of digital tools available is broad, from low-tech solutions disseminating voice- and text-based advice on feature phones, to high-tech tools involving satellites, sensors and big-data analytics.

### **The African landscape**

The African agritech landscape is very diverse and is growing rapidly, with more than 280 ventures spread across the continent and 390 active digital-agriculture solutions, most of which have been launched since 2016. Kenya, South Africa and Nigeria are major hubs for agritech startups, as their large market size enables tech companies to scale. Funding for agritech startups in Africa has grown from \$50,000 in 2015 to almost \$60 million in 2020, but only around 3 per cent of the potential market size has been fulfilled so far.

### **Barriers to agritech's growth**

Agritech in Africa has enormous growth potential but faces challenges in terms of infrastructure, technological capacity, farmers' access to finance and policy challenges. Poor road networks and limited internet access are also a hindrance. The fragmentation of the agriculture sector across the continent and within countries – in areas such as the policy environment, crop/animal varieties, cropping methods, agro-climatic zones, expertise and mechanisation – also hinders the scalability of agritech solutions, which often work in isolation rather than being embedded in bigger platforms. Limited access to data is an additional challenge.

### **Areas for policy action**

**Integrate tech into national agriculture strategies:** Governments must consider digital agriculture as a core part of their agriculture and economic policy. In addition to traditional efforts to support farmers – land reforms, enhancing access to loans, strengthening physical infrastructure and removing tax burdens – governments must prioritise technology as an enabler of sector growth. For instance, digital farmer registries and land titles can help to clarify to farmers exactly what land that they own, which would enable them to use it as collateral when accessing loans.

**Create and use data for the broader ecosystem:** One significant challenge for agritech solutions is the lack of data, particularly on markets, farmers and trade conditions. Governments should collect and aggregate reliable data about the agricultural sector including climate, soil types, cropping methods, pest and disease management, and farmer information. The datapoints would not only support policymaking, but also enable the broader ecosystem to create value-added products and services for farmers.

**Provide support to develop viable monetisation models:** Since many agritech solutions are donor-driven, it is particularly important to provide support to develop viable monetisation models. Agritech innovation hubs could play a vital role in connecting innovative startups within an existing ecosystem of investors, accelerators and incubators.



## Nurture Connections Through Tech Networks

Well-connected tech ecosystems tap into a worldwide exchange of ideas, knowledge, talent and capital. Africa's relatively weak connections between individual startups, and fragmentation between different sectors and countries, mean the tech ecosystem is losing out on those benefits, with startups missing opportunities for growth. These poor connections can result in misinformation and an inadequate understanding of the various markets that exist within Africa, as well as a lack of awareness of opportunities both within and outside the African tech ecosystem.

The "network compensation hypothesis" states that having access to a strong network can offset some of the challenges that entrepreneurs with a less favourable human-capital profile (experience and skills of their workers) and restricted financial resources typically face in raising funding. This makes strong networks particularly important in African contexts, ensuring that the best ideas receive the funding that they need.

The fundamental components of a robust, well-networked tech-startup ecosystem include the number, quality and depth of connections and networks within it – weak connections are likely to lead to lower impact and vice versa. Strong networks clearly define the value proposition for each stakeholder, incentivising the sharing of quality connections and information, and providing access to the funding and expertise required to boost the sector.

Weak connections and networks within the African tech-startup ecosystem contribute to many of the challenges already described. They are impeding:

1. **Access to markets (see the chapter on a Flourishing Business Environment)** – both in terms of funding, and opportunities to promote and sell products and services.
2. **Access to a diverse knowledge base** – limiting learning opportunities and the sharing of best practice as well as access to talent.
3. **Access to sufficient resources and support to stimulate genuine innovation** – to test, fail fast, iterate, and start again or pivot.

Breaking silos and developing quality networks within the African tech-startup ecosystem is critical for bridging knowledge gaps, reducing information asymmetries and connecting ecosystem players to new opportunities. Governments can play an important role in helping to strengthen networks and connections through the implementation of supportive policies, and active engagement in mechanisms that boost collaboration between key stakeholders in the ecosystem to maximise potential benefits from the startup and broader tech economy. This would help democratise access among critical ecosystem

actors (for example, investors and tech hubs) to core information sources and resources that can spur transformational growth and help more African startups to go global.

## Why Robust Networks Matter

Startups thrive on relationships and the exchange of ideas — with customers, investors, corporations and, especially, other startups. The broader those relationships are, the better the outcomes will be for startups and their ecosystem.

Research shows that high levels of connectedness within tech-startup ecosystems – both at the local and global level – are closely associated with positive startup performance, with the strongest ecosystems scoring highly on the connectedness metrics. In any given economy, companies with more exposure to foreign markets are “frontier” firms that drive growth, as productivity and innovation increases when startups have global connections. There is also evidence that founders who devote time and resources through, for example, mentorship or investment in new entrepreneurial ventures, significantly contribute to the development of robust tech-ecosystems through their connections.

In Argentina, deep connections between three high-impact entrepreneurs with a willingness to influence other entrepreneurs through investments, mentoring and advice created a solid foundation for the Buenos Aires tech-ecosystem to thrive. This created a domino effect that enabled those they helped to also pay it forward in the same way they had previously. In this case, a handful of network players were critical to the success of the ecosystem.

Strong networks also help early-stage companies to raise funds: founders with high levels of connectivity increase revenue twice as fast as those with lower levels, growing 2.1 times faster when those networks are global. Investors see very early-stage companies as inherently risky as there is no proof of concept when a venture is first starting out. If you add the additional risk, perceived or otherwise, of investing in companies working in often unfamiliar locations, the importance of strong networks becomes even clearer. Strong networks enable the flow of trusted information that provides an opportunity for key stakeholders to vouch for new ventures, reducing the amount of perceived risks of investment and increasing the visibility of lesser-known opportunities.

Much of the evidence on the relationship between networks and performance is based on data from outside the African continent. Attempts to quantify the impact of networks and connections in Africa are limited by data availability. In addition, there are few initiatives with the explicit and/or sole aim of improving networks within the African tech sector, but several – including the AfDB’s Ennova programme, the African Union’s One Million by 2021 initiative and AfriConEU Trans-Continental Networking Academy – have core components including fostering collaboration, interaction and co-creation between key stakeholders. Given that the African tech-startup ecosystem is relatively new,

there have been limited attempts to quantitatively measure the impact of initiatives that do exist, although there is clear recognition of the need to stimulate and maintain high-quality networks for the sector to reach its full potential.

### Connecting the Dots: The Role of “Startup-Support Organisations”

A startup-support organisation (SSO) is an umbrella term that encompasses a diverse group of tech-ecosystem organisations, including tech hubs, incubators and accelerators, ecosystem enablers such as tech conference and event organisers, and supply-chain actors that facilitate growth. SSOs have a crucial role in enabling tech ecosystems to flourish, particularly when they are new. Hubs can play the role of not only supporting founders and startups to conceive ideas, develop and expand, but also provide structured fora for building important relationships. Hubs can also provide physical space and infrastructure (for example, internet and electricity). Ensuring hubs are supported to build and maintain the capacity they need to help startups flourish is of paramount importance. Attention can then turn to connecting hubs across nations and subsequently across borders to maximise impact.

However, there is mixed evidence on the effectiveness of hubs to steer startups on a path to sound growth, and current African innovation hubs have not been living up to their potential. When a tech hub is sponsored by academia, participants are able to leverage skill-development opportunities and links to practitioners. However, academia’s involvement can distort the market in instances when startup support is removed. Depending on country-specific conditions, tech hubs can serve to enhance the profile of local startups, raise funding and provide support through access to electricity, space and mentorship, as demonstrated in Nigeria. That being said, although recognised as sources of information and support, other evidence suggests tech hubs make only a very small direct contribution to startup creation and success.

Many African tech hubs are underfunded, with operating models that limit their ability to execute their mandates as intended, and there is also a lack of clearly defined roles, restricting their potential impact. Analysis of the challenges and success strategies of hubs, derived from research of almost 100 hubs across the continent, shows that limited access to reliable, consistent capital is the number one challenge, with the associated issue of connecting entrepreneurs coming second. Naturally, the success strategies – what ecosystem-support organisations seek to do to rectify some of these challenges – centre around increased access to financing, followed by greater collaboration with other SSOs and more opportunities for networking. Hubs also face challenges in building effective partnerships with corporates, governments, investors and other hubs. In addition, high operating costs, driven by a disproportionately large proportion of funds being spent on non-programme related costs, result in hubs being unable to develop the expertise, capacity and capabilities necessary to grow. This has a knock-on effect on the support they can provide to entrepreneurs.

Despite this, there is an opportunity for tech hubs to take a more central role in supporting startups on their growth journeys. Tech hubs represent an opportunity to formalise connections and facilitate access, which is needed to spur transformational growth. Hubs can provide a safe space that encourages a shift in the mindset of seeing failures – and the sharing of these failures – as learning opportunities: a challenge within the tech-startup world given startups must fundamentally prove success to gain additional support, and encourage a culture of collaboration rather than competition.

Hubs can also help ensure funds are used for productive purposes rather than day-to-day operational costs by reducing expenditure through shared resources, as well as offering guidance to entrepreneurs on financial management. Several African countries have established tech hubs that serve as an umbrella for all tech hubs in a country, including the [Ghana Hubs Network](#), [ISSN](#) in Nigeria and [ASSEK](#) in Kenya. These national-level “hubs of hubs” – or National Association of Hubs (NAHs) – work to support and promote collaboration, and advocate for the right policies to enable a thriving tech ecosystem. NAHs can act as a bridge between those on the ground and policymakers, and can be used as a channel to ensure the views of tech entrepreneurs are amplified and heard by decision-makers, increasing entrepreneurs’ collective impact on policymaking.

Policymakers can play a role in supporting a structured network of tech hubs (for example, incubators and accelerators) that enable a comprehensive nurturing environment. This can be done through mechanisms including:

1. The development of a national SSO certification scheme to recognise and reward the most dynamic organisations.
2. Support hub sustainability and operational costs through the provision of low-interest loans, grants, subsidies and in-kind support.
3. Improvement of the impact of tech hubs through capacity-building training via partnerships between government, tech hubs, academia and other relevant organisations.

Tech hubs and their stakeholders have already played a role in facilitating engagement and productive discourse between the public and private sectors. GSMA, the trade association for global mobile-network operators (MNOs) – in collaboration with the German Society for International Cooperation (GIZ) – has worked with the Tunisian government and other central stakeholders to launch a [mobile innovation lab as part of the Tunisian digital-transformation centre](#). Together with the Tunisian government and the local digital ecosystem, GIZ and the GSMA are collaborating on the development of mobile digital solutions and promoting the platform economy across various sectors. This highlights the importance of public-private partnerships that aim to strengthen ecosystem connections and help startups to scale.

Key ecosystem players, including donor agencies and corporates, recognise the role they can play in facilitating increased consolidation and the collaboration required to boost African tech-startups. This is

reflected in the development of hub alliances, such as NAHs, and the increasing number of collaborative programmes between stakeholders to develop African entrepreneurial ecosystems, including:

- Kigali Innovation City, a mixed-use tech hub aiming to facilitate the development of pan-African talent and developed in collaboration with Africa50 – a partnership between African governments and the AfDB.
- AfriConEU, the first trans-continental networking academy for African and European digital-innovation hubs. The project is funded by the European Union.
- Orange Fab, a programme run by Orange and aimed at connecting startups to corporations for strategic investments and partnerships. This is a global programme with a presence in eight African countries: Tunisia, Senegal, Ethiopia, Cameroon, Côte d'Ivoire, Jordan, Morocco and Mali.
- Smart Capital, a Tunisian organisation that interacts with different government ministries and helps navigate Tunisia's Startup Act among its thriving tech hubs and investors.

By intentionally focusing on strengthening tech hubs to support entrepreneurship, the quality of the inputs to networks can be assured, as poor-quality inputs make connections redundant.

### **Boosting Connectedness – Special Economic Zones and Startup Cities**

There are various ways connections and networks can be nurtured within tech-startup ecosystems. These include mechanisms such as Special Economic Zones (SEZs) that, although primarily focused on increasing foreign direct investment and job creation, can also provide an environment where entrepreneurs and other key stakeholders can connect, benefitting from the provisions and activities that take place within these zones. Among a selected sample of 49 fully operational African SEZs, about half created between 1,000 and 10,000 jobs in their respective economies by 2021. Unfortunately, the performance of the majority of African SEZs has been poor, with many failing to stimulate the economy as expected. A few exceptions include SEZs in Kenya, Nigeria and South Africa, which have been able to leverage their strategic positions within their regional contexts. The development and strengthening of SEZs is a priority for African governments and includes the establishment of border SEZs to help deepen regional integration. With renewed focus, clear aims and action points, SEZs have the potential to facilitate entrepreneurship and growth across the African continent.

Startup Cities have also been established. These are areas that facilitate entrepreneurialism and provide specific facilities, from co-working spaces through to accelerator programmes, offering support to entrepreneurs from across the spectrum of startup maturity.

## Spreading the Word: Sharing Best Practice and Levelling the Playing Field

Connections enable the flow of information, where specific expertise, learnings and best practice can be shared not only through peer-to-peer learning, but also among other players that form part of the African tech-startup ecosystem. These information flows are multidirectional and multifaceted, with the depth and quality of exchanges dependent on the strength of relationships. For entrepreneurs, organising themselves within networks increases visibility so that they become more accessible, which is one route to strengthening their connections.

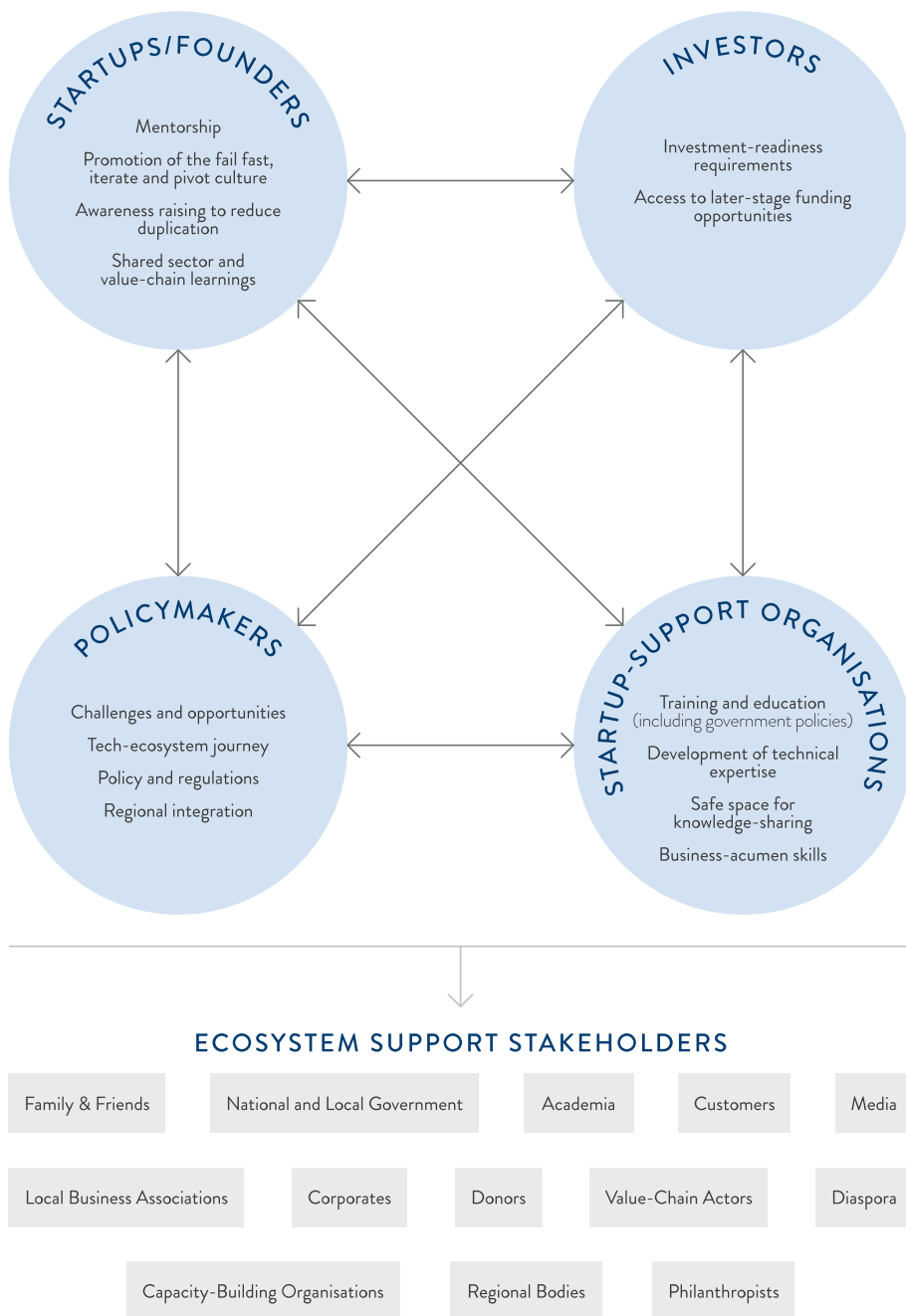
The Institute's analysis, based on our research and workshop, [The Power of Connections – Strengthening African Tech-Startup Networks](#), reveals the following core outcomes from having robust networks as part of a well-connected tech ecosystem:

- Boost chances of success and growth through a reduction in information asymmetries, knowledge sharing and cross-pollination of ideas and approaches
- Increase visibility and connect tech startups to potential partnerships, opportunities and talent
- Improve awareness of diversified funding options among entrepreneurs, startups and ecosystem-support organisations
- Improve access to markets and business information

The intra-connections and networks of key stakeholders within tech ecosystems, such as the connections between investors, are also of paramount importance, as they will determine whether a startup will have access to the resources required for it to scale. For instance, the networks of early-stage investors can prove crucial to a startup as they could then [create access to later-stage investment opportunities](#) – a core component, given the importance of attracting funding to startup growth.

Ecosystem-support stakeholders also play a crucial role, entering the ecosystem at context- and objective-specific moments. For instance, partnerships between startups and corporates are becoming increasingly important as corporates often [hold the key to the market access](#) that startups struggle with but, equally, startups are home to the innovation that corporates need to tap into. Corporate partnerships can also support SSOs' operating costs. For example, partnerships between a tech hub and an MNO could see favourable internet rates provided to hubs that select a particular provider in exchange for the hub using other MNO services. The media – both local and international – can also play a role in helping to bring visibility to the ecosystem and act as a source of information on the successes, challenges, growth and opportunities within the African tech ecosystem.

**Figure 16 – A well-connected tech ecosystem encourages generous information exchange between entrepreneurs, organisations and policymakers – as well as extensive peer-to-peer learning**



Source: TBI

### The Scale of Connections Matters

Connections are important at every stage of the startup cycle, from conception through to exit. The depth and reach of these connections must expand alongside the startup to maximise growth. For startups, the connections that matter depend on their maturity. It is more important for an early-stage

startup to connect with other startups and tech hubs than it is for a growth-stage startup, given the level of maturity of the latter and the guidance required. That is not to say connections between more mature startups and other startups and SSOs are not important. It is nonetheless acknowledged that early-stage startups require these connections for their survival and to set them on the path to growth.

Developing strong networks across the whole value chain in a nascent tech-startup ecosystem starts with building strong local connections that can then be leveraged to make connections more broadly at the national, regional and global levels. As startups and the ecosystem develop, the importance of connecting at a national, regional and global scale intensifies. The right scale for an individual startup will also depend on the target market – as you scale up, the geographic scope will scale alongside it.

Access to technology, talent, information, capital and opportunities is required at every level of connection. However, the broader your reach, the more diverse your options, therefore global success is fundamentally predicated on global connections. They must also take place across different maturity levels and territories if the African tech ecosystem is to achieve transformational change. Ecosystem players must engage with stakeholders that occupy the spaces they aspire to be in, and so connections at different levels are core to their development. Experienced entrepreneurs must empower, educate and invest in newer founders to disseminate knowledge and create the linkages that will spur on the African tech ecosystem.

**Figure 17 – The scale of connections: scoping resource access and needs at different levels of market expansion**

- Global**
- Tap into more advanced and diverse ecosystems: expertise, funding, resources, information, and globally recognised source information on hyperlocal context, value-chain support and access to initial customer-base networks that are required to go global
  - Build international linkages and networks
- 

- Regional**
- Scope market-access resources and information to scale the venture beyond (national) domestic market, including guidance on how to do business
- 

- National**
- Connect emerging ecosystems in secondary cities to primary national tech ecosystem
-



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(usually the capital city)

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- Local**
- Source information on hyper-local context, value-chain support and access to initial customer base
- 

Connections across the different scales increase awareness of and enable access to: **Technology, Talent, Capital, Information, Opportunities and Markets**

Source: TBI

The way in which information is relayed should also be adapted to fit the context in which it is being shared. In Africa, this could mean using more traditional forms of communication such as print media or radio.

### Role of Networks in Influencing Policy

Networks have played an important role in influencing policy for the advancement of the African tech ecosystem. In Tunisia, [the execution of the Startup Act](#) was not only a result of the Tunisian government's desire to stimulate the economy, but also a response to calls from tech-ecosystem players lobbying for its implementation. Similar calls from the network's stakeholders collectively pushing for change in Nigeria, Ghana, Kenya, Uganda and other African countries have led to a consultative process to jointly develop the constituent parts of their own startup legislation.

There are two core ways in which policymakers can play a key role in nurturing and maintaining networks:

#### **Consult with tech actors as a critical part of policy development**

- Promote dialogue with stakeholders as part of policy development and commit to action based on the feedback received. This can be done through initiatives such as the [Policy and Regulation Initiative for Digital Africa \(PRIDA\)](#). A joint initiative of the AU, the European Union (EU) and the International Telecommunications Union (ITU), PRIDA aims to build the capacity of AU member states to reap the benefits of digitalisation.
- Create regular feedback mechanisms such as the barometer already recommended for policymakers to better understand the ecosystem and the impact of their policies on the tech-startup ecosystem.

- Drive a whole-of-government approach to unlock barriers to development of the ecosystem, in particular identifying and addressing policy incoherence.
- Organise events such as conferences and networking events.

### **Use policy tools to support and promote the national tech sector**

- Support the provision of education on legal requirements to startups. For instance, governments should use NAHs as a channel to share information on startup acts and other legislation that affects the creation and/or growth of startups and the broader entrepreneurial ecosystem.
- Targeted campaigns to raise the profile of startups and to promote support mechanisms available to them and SSOs. This could include active involvement and sponsorship of tech events aimed at facilitating knowledge-sharing and valuable networking, such as Tech in Ghana which, in 2021, was an official event partner of the Ghanaian government-led Ghana Digital Innovation Week.

### **Recommendations to Nurture Connections Through Tech Networks**

Policymakers should pursue public-private partnerships that enable government to support the tech-startup ecosystem without undermining those who are best placed to deliver the required services.

### **Boost the Capability of Startups and Support Organisations**

Given the nature of the African tech-startup ecosystem, SSOs should play a central role in developing and strengthening networks in this space.

**Develop SSO certification at the national level.** Policymakers can support capacity-strengthening of SSOs through certification, following a similar approach to Tunisia's Flywheel programme. For instance, Tunisia offers subsidies to certified SSOs. Developing a system of SSO certification would allow hubs to be recognised and strengthened according to the requirement of certain performance indicators (for example, the number of successful startups to have raised funds through a particular accelerator), as well as to support entrepreneurs to launch successful businesses and the organisations that support them to fulfil their mandates as intended.

**Support hub sustainability and operational costs through the provision of low-interest loans, grants, subsidies and in-kind support.** Policymakers should consider channelling available funds under national-level initiatives as well as leveraging funding from multilateral agencies that have established programmes aimed at stimulating tech ecosystems, such as directing SSOs to AfriConEU's initiative on strengthening digital innovation hubs. In addition, they should look at leveraging existing infrastructure that may be operating at low levels of productivity. For instance, tech hubs could be authorised to run government-sponsored innovation centres.

**Improve the positive impact of tech hubs through capacity-building training via partnerships between government, tech hubs, academia and other capacity-building organisations:** This should include supporting innovation hubs to diversify their financing options, for example through provisions outlined in SSO certification, as well as mentorship and skills training that include courses on business planning, financing options and how to pitch to investors. Support and training should be driven by entrepreneurs to ensure the relevance of assistance provided. Additional support with specific provisions should be in place for particular remits. For instance, sector-specific expertise or a focus on marginalised members of society, such as women and people with disabilities, should be included. Engaging sector-specific hubs as well as more generalised SSOs will ensure holistic, yet specific, support is provided: for instance, regional programmes that facilitate cross-border learnings, such as a startup from Nigeria being hosted in Kenya to learn mobile-money best practice.

### **Launch a “Pan-African Startup Network”**

The development of a pan-African startup network can ensure all key parties have an opportunity to feed into the development of the continent’s tech-startup ecosystem. The network would provide an opportunity to aggregate and amplify the views of startups and the stakeholders that support their development by acting as a vehicle to directly influence policy. The network would also provide appropriate fora to share best practice, key insights and challenges faced when developing and implementing legislation aimed at stimulating startup ecosystems, and the opportunity to those working in the sector to provide feedback and influence policy.

**The pan-African startup network would aim to connect tech organisations from across the spectrum of the tech ecosystem, including:**

- National bodies that represent entrepreneurs, startups, SSOs and other support actors. These organisations would be responsible for understanding the opportunities, challenges and potential solutions of operating a startup at the national level but would also consider the experiences of startups as they expand across borders.
- Three continent-wide bodies that represent three core ecosystem actors: tech hubs, policymakers and investors. These continent-wide bodies would be responsible for understanding what works in different countries, and identifying what could be replicated in different contexts as well as developing action points on the steps required to boost growth at the continental level.
- The pan-African body would oversee and provide guidance. This body could also organise a forum, perhaps every year, to bring all stakeholders together to acknowledge efforts and develop ambitious, pan-African ecosystem targets.

Collectively, these coordinating bodies would be responsible for collating and sharing the experiences of those they represent to develop a holistic view and assess what actions might be needed to support, create, maintain and grow the African tech-startup ecosystem.

At the continent-wide level, one or more organisations would need to host and play a secretariat function for the network. There are several organisations focused on supporting tech startups across the continent who would be well placed to play this role. As an example, given [Smart Africa](#)'s footprint – covering 32 countries in Africa and representing more than 850 million people – and its mission to accelerate sustainable socioeconomic development on the continent through the usage of ICT, it could be well positioned to take the lead and oversee the network.

The network would have three sub-groups:

### 1. **Policy Taskforce: Influencing policy at the national, regional, and global levels**

This group would provide a central point for engaging policymakers and influencing tech policy across the continent. It would aggregate the views of tech startups and support organisations to maximise their impact on emerging policy, providing a simple point of engagement for policymakers and helping them take onboard and represent the views of various actors within the ecosystem. It could also convene policymakers from across the continent to share lessons and challenges on emerging tech policy and legislation.

As one example of a potential support organisation, GIZ/i4policy's work in facilitating the development and implementation of startup acts across the continent puts the organisation in a good position to lead the coordination of policymakers. The i4Policy movement was collaboratively initiated by innovation-community leaders across Africa and brings together community conveners who share common values, and an interest in deploying co-creation methodologies to support their governments with innovative policymaking. It currently connects over 150 hubs across Africa.

### 1. **The creation of a “National Association of Hubs” (NAHs)**

Developing an NAH in each country across the continent could empower startups and tech hubs to influence policy through a unified voice and help streamline support efforts at a national level. With policymakers' support, NAHs can also lead in the civic engagement required to ensure startups and SSOs understand legislative requirements for operations as well as their rights within the ecosystem. To support this initiative, an organisation such as [Afrilabs](#), a network organisation supporting innovation centres across Africa, has 320 member hubs in 51 countries. It therefore has the requisite knowledge and aligned mission that puts it in a good position to lead the coordination and represent NAHs as part of the network.

### 1. **Networking investors at the continental level**

The critical importance of driving capital to the African tech-startup ecosystem means it is essential that investors of all types participate in a pan-African startup alliance if transformational change is to be achieved. ABAN, a pan-African network organisation with 1,000 early-stage investors across 40 African countries, and VC4A, an organisation that connects entrepreneurs to support including investors, has a network of over 190,000 community members. The requisite knowledge and extensive networks puts both in a good position to lead in the coordination and represent investors as part of any network.

**Figure 18 – Bodies at the pan-African, continental and national levels should form of the tech-startup ecosystem**

<b>Pan-African body</b>	<p><b>Represent:</b> Key stakeholders from across the African tech ecosystem</p> <p><b>Responsibilities:</b> (1) Oversee and provide guidance to the national-level and continent-wide bodies; (2) Organise a forum to convene stakeholders to recognise efforts of national-level and continent-wide bodies, and develop pan-African ecosystem targets</p>
<b>Continent-wide bodies</b>	<p><b>Represent:</b> Three bodies, representing (1) SSOs (e.g., tech hubs), (2) investors and (3) policymakers</p> <p><b>Responsibilities:</b> (1) Understand solutions that work and identify their replicability in different contexts; (2) Identify and develop action points to boost growth at the continental level</p>
<b>National-level bodies</b>	<p><b>Represent:</b> Entrepreneurs, startups, SSO and other ecosystem-support actors</p> <p><b>Responsibilities:</b> Understand the opportunities, challenges and potential solutions to startup operations at (1) the national and (2) cross-border levels</p>

Source: TBI

## Climate Tech: The Future Star Sector

Climate tech has an important role to play in Africa's future, from the solar microgrids that will provide electricity to millions of homes to the remote sensors for conserving forest resources. The tech sector promises to help Africa cut greenhouse emissions, adapt to the impacts of climate change and build stronger, more resilient communities.

### The African landscape

The market for climate tech in Africa is currently driven by limited access to basic amenities such as electricity. Two-thirds of the continent's 1.3 billion population still have little or no access to electricity, which creates an opportunity for off-grid startups. Fewer than one-fifth of Africans have access to clean domestic heating, so there is a huge market for environmentally friendly boilers and stoves. Urban pollution and congestion in cities such as Nairobi and Lagos have triggered interest from tech startups that manufacture electric rickshaws and motorcycles.

In investment terms, climate tech remains one of Africa's prominent tech sectors but in comparison to the rest of the world, the continent still lags behind significantly, attracting only 0.2 per cent of global climate-tech funding.

### Future opportunities

Future opportunities for climate tech in Africa are split broadly into two categories. The first category is the local market where there are still large gaps in areas like energy access. Tech companies such as [M-Kopa](#) and [Infibranches](#) are already tapping into this opportunity, using fintech and digital-payment solutions to provide easier access to renewable energy.

The second category lies within the global value chain for climate technologies such as batteries and renewables. Africa's large deposits of cobalt and nickel, and its vast renewable resources including solar and wind, provide a unique opportunity for startups to engage global tech value chains, increase foreign trade and create jobs. The continent is already [attracting attention](#) as a potential source of green hydrogen.

### Areas for policy action

**Address barriers to competitiveness:** Africa's climate-tech startups operate in challenging contexts that drive up production costs and undermine competitiveness. Getting products like solar home systems to market at a suitable price point often flounders because of high import costs, skill shortages, fragmented markets and poor infrastructure. The priority for policymakers should therefore be to address some of the barriers to product competitiveness by stimulating the local manufacturing of clean energy systems. Adjusting customs duty on certain imported parts, for example, should be a priority.

**Incentivise changes in consumer behaviour:** The second set of challenges relates to customers in terms of their willingness to adopt new climate-tech solutions. Getting potential customers to switch from petrol generators to solar home systems, or from wood briquettes used for cooking to clean biogas, especially in rural communities, can be challenging. Strong policy action will therefore be needed to explain the importance of “going green” to customers, and to remove fuel subsidies to drive the necessary behaviour change without adversely affecting livelihoods.

**Boost local investment:** The third category of challenges is the perception from investors that investment in Africa is high risk because of sociopolitical instability, unfavourable fiscal policies and weak tech ecosystems. Although these issues are not unique to climate-tech startups, they are nonetheless critical. African policymakers must tap into the continent’s local investor base – who are likely to have a sharper grasp of local markets – while seeking foreign capital in parallel. Additional policy measures to stimulate the corporate and social environment would be a crucial step forward in attracting investment.

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## Conclusion

Africa's tech ecosystem is at a critical point. Massive funding growth coupled with an explosion of ideas from the continent's major tech hubs point to an exciting decade ahead. But to close the gap and secure more than \$90 billion by 2030, governments need to put significant investment into attracting and facilitating financing, improving the business environment and strengthening networks. The relationship between government and entrepreneurship – which has at times been antagonistic and counterproductive – is shifting. This report sets out the ways in which Africa can become the biggest startup success story in the world and we, at the Tony Blair Institute for Global Change, look forward to supporting leaders on their journey to tech excellence.

[Download a PDF summary of the recommendations in this report.](#)

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