Africa today is at a high point in its development fortunes. A combination of high commodity prices, new trading links and widespread improvements in economic governance have made Africa the world’s fastest-growing continent. Robust economic growth is providing African countries with the means to boost public investment, strengthen social services and deliver prosperity to more of their population.

However, despite this remarkable progress, the continent continues to face challenges. African countries have not yet made the structural change needed for growth to become self-sustaining, generating the jobs and livelihood opportunities that would help lift the majority of Africans out of poverty.

In this section, we report on Africa’s development progress over the past few years, highlighting both areas of good performance and areas in need of further effort. In particular, we indicate where innovation can help accelerate development. This section uses 26 indicators from Level 1 of the One Bank Results Measurement Framework to show 2014 performance, with traffic light symbols to indicate how Africa has progressed compared to other developing countries.

**Innovation**

Development is about doing things differently. It is a dynamic process in which less efficient ways of working are supplanted by new and more productive approaches — at the household, firm and community levels.

Africa today is changing fast. The demographics picture is highly dynamic: by 2050, the continent’s population is projected to reach 2 billion people, of whom two-thirds will live in cities. Natural resource discoveries are providing new sources of wealth and posing complex challenges about how revenues should be managed and shared. Africa’s place in a multi-polar world is constantly evolving, with new trading links and sources of investment. The rapid spread of mobile telephones is giving people access to information and opening up new ways of receiving services.

In these conditions, innovation is imperative. Innovation, broadly understood, is the application of new thinking to economic and social challenges. Innovation includes technological change, but it is much broader than technology. It also means adapting products, services and business models to Africa’s unique conditions. It includes finding new ways to organise public institutions and deliver public services, and new ways of organising ourselves for collective action, from the community level right up to cooperation between governments on cross-border challenges. To achieve economic transformation, Africa needs all these kinds of innovation, leading to the steady accumulation of physical, human, social and intellectual capital.

Africa no longer has to rely on innovations developed in other countries. Africa today is beginning to leapfrog over old technologies and catch up in the technological race. In many areas, Africa itself is leading the way. Perhaps the best-known area is the delivery of services through mobile telephones. For example, East Africa’s famous M-Pesa system for money transfer is spurring new microfinance services, delivered quickly and cheaply. With much of the continent still lacking banking infrastructure, technology is enabling peer-to-peer lending, cutting out the need for the traditional retail banking model. Commodity exchanges are being pioneered in Ethiopia, allowing farmers to access real-time data on prices for their produce and make informed choices about which market outlets to use.

The applications of information and communications technologies (ICT) are broad and spreading fast. For example, Kenyan experts have built a system for tracking election-related violence, creating real-time incident maps. In Nigeria, yourbudgit.com is a website offering creative infographics that explain the country’s complex federal budget to the public. In Ghana, SliceBiz is a micro-investment crowdsourcing platform, providing seed funds for start-up businesses and social enterprise. Mobile phones are being used in various countries to track the spread of infectious diseases and the displacement of population following droughts. As new pan-African social media platforms emerge to challenge global giants like Twitter and Facebook, the potential applications of ICT-based innovations will grow exponentially. These are just a few examples of African innovations in information technology that provide solutions to various challenges.
Table 1: Development in Africa (Level 1)

This table summarises the continent’s development progress between 2010 and 2014. The indicators are those in the One Bank Results Measurement Framework 2013–2016, reflecting the Bank’s two strategic goals: inclusive growth and the transition towards green growth. Inclusive growth has five dimensions: economic, spatial, social, and political inclusion, and promoting sustainable growth through improved competitiveness. The transition to green growth has three: building resilience and adapting to a changing climate, managing natural resources sustainably, and promoting sustainable infrastructure.

- Progress is strong and better than peers
- Progress is positive but less than peers or no progress against the baseline
- Regression against the baseline
- Data are not available to measure progress

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>ALL AFRICAN COUNTRIES</th>
<th>OF WHICH ADF COUNTRIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline 2010</td>
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<tr>
<td><strong>INCLUSIVE GROWTH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic inclusion: Reducing poverty and income inequality</td>
<td></td>
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<tr>
<td>Gross domestic product (GDP) growth (%)</td>
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<td>4.3</td>
</tr>
<tr>
<td>GDP per capita (US$)</td>
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<tr>
<td>Population living below the poverty line (%)</td>
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<td>Income inequality (Gini index)</td>
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<tr>
<td>Spatial inclusion: Expanding access to basic services</td>
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</tr>
<tr>
<td>Access to improved water source (% population)</td>
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</tr>
<tr>
<td>Access to improved sanitation facilities (% population)</td>
<td>40</td>
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<tr>
<td>Access to telephone services (per 1000 people)</td>
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<tr>
<td>Access to electricity (% population)</td>
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<tr>
<td>Road density (km per km²)</td>
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<td>8.2</td>
</tr>
<tr>
<td>Share of population living in fragile countries (%)</td>
<td>22</td>
<td>23.4</td>
</tr>
<tr>
<td>Social inclusion: Ensuring equal opportunities for all</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life expectancy (years)</td>
<td>58</td>
<td>59</td>
</tr>
<tr>
<td>Enrolment in education (%)</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Enrolment in technical/vocational training (%)</td>
<td>12.5</td>
<td>11.4</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>10.6</td>
<td>8.2</td>
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<tr>
<td>Women’s participation in the labour market (%)</td>
<td>54.7</td>
<td>64.5</td>
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<tr>
<td>Political inclusion: Securing broad-based representation</td>
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<td>Mo Ibrahim Index of African Governance (index)</td>
<td>51</td>
<td>51.5</td>
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<td>Tax and non-tax fiscal revenues (% of GDP)</td>
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<td>22.3</td>
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<td>Index of effective and accountable government (index)</td>
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<td>2.8</td>
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<tr>
<td>Country Policy and Institutional Assessment (CPIA) score</td>
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<td>Gender-Sensitive Country Institutions (index)</td>
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<tr>
<td>Sustaining growth: Building competitive economies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intra-African trade (billion US$)</td>
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<td>145</td>
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<tr>
<td>Cost of trading across borders (US$)</td>
<td>2090</td>
<td>2384</td>
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<tr>
<td>Economic diversification (index)</td>
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<td>0.6</td>
</tr>
<tr>
<td>Global competitiveness (index)</td>
<td>3.6</td>
<td>3.61</td>
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<tr>
<td>Time required for business start-up (days)</td>
<td>42</td>
<td>26.2</td>
</tr>
<tr>
<td>Access to finance (% population)</td>
<td>..</td>
<td>32.9</td>
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</table>
Electricity supply is one major bottleneck in the spread of new technology across Africa. Yet innovation is also helping to find ways around the problem. Simple, off-grid electricity solutions are spreading fast; for example, the use of solar-powered mobile phone chargers is increasingly common.

The future of African agriculture depends heavily on innovation. After decades of stagnant agricultural productivity, climate change now brings the prospect of widespread disruption. Innovations in biotechnology and farming methods are required to deal with the threats of disease, pests and drought, and to boost the low nutritional content of staple crops. Adapting to climate change is a knowledge-intensive process; an understanding of complex changes is needed to inform innovation. This calls for new forms of collaboration among government, academia, business, civil society and farming communities across Africa.

So how well equipped is Africa to promote innovation? Most African countries have Ministries of Science and Technology, which support capacity building and skills training across government and business and provide incentives for research and development (R&D). A growing number of countries also have technology hubs, which are catalysts for innovation and entrepreneurship. In 2005, the African Ministerial Council on Science and Technology agreed on a Consolidated Action Plan, including promoting new policies and institutional arrangements, strengthening facilities for R&D, and investing in the education of scientists, technicians and engineers. The African Union set a target of 1% of GDP to be spent on R&D, although most countries’ expenditures remain well below that share.

The need for innovation is therefore widely recognised. Yet for Africa to harness its energy and creativity, some constraints need to be overcome (see Figure 1.1). One is the huge deficit in basic infrastructure, including energy, transport and ICT. Infrastructure is the platform for innovation in its many dimensions. The more Africans who are connected through infrastructure, the greater the pace of structural change in the economy. Indeed, Africa also needs to be innovative in the way infrastructure is developed — from off-grid solutions for local power to the development of the continent’s vast hydroelectric potential and the building of infrastructure for its rapidly growing cities.

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>ALL AFRICAN COUNTRIES</th>
<th>OF WHICH ADF COUNTRIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline 2010</td>
<td>Latest 2014¹</td>
</tr>
<tr>
<td>Food insecurity (% of population)</td>
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<td>27.6</td>
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<tr>
<td>Resilience to water shocks (index)</td>
<td>..</td>
<td>3.87</td>
</tr>
<tr>
<td>Institutional capacity for environmental sustainability (index)</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Agricultural productivity (US$ per worker)</td>
<td>537</td>
<td>547</td>
</tr>
<tr>
<td>Production efficiency (kg CO₂ emissions per US$ of GDP)</td>
<td>0.18</td>
<td>0.16</td>
</tr>
<tr>
<td>Renewable energy (% total electricity produced)</td>
<td>16</td>
<td>16.3</td>
</tr>
</tbody>
</table>

¹ Peers refers to other developing countries around the world. For two indicators—the Mo Ibrahim index and institutional capacity for environmental sustainability—Africa is not assessed against peers but rather on the basis of progress on historic trends.

Notes: ADF countries are the 37 lower-income AfDB member countries that qualify for concessional funding: Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Côte d’Ivoire, Djibouti, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Somalia, Sudan, South Sudan, Tanzania, Togo, Uganda, Zambia, and Zimbabwe.

A second constraint is human capital. Africa has done extremely well at expanding basic education, achieving near-universal access. While this is no small feat, the level of skills available is still well short of what is required for economic transformation. Africa needs centres of excellence to train a new generation of leaders in politics, government, business and civil society. It also needs a critical mass of skills in science and technology, to enable business to expand into knowledge-intensive areas.

In short, while innovation comes from across society — from individuals, firms, farmers, communities, universities and civil society organisations — it cannot take root and flourish unless the state provides an appropriate environment. When correctly implemented, innovation policies will create jobs and foster inclusive economic growth.

**Inclusive growth**

The AfDB Strategy 2013–2022 has two overarching goals for Africa: inclusive growth, and a gradual transition towards a green growth development path. Inclusive growth is broken down into several dimensions: economic and spatial growth, social and political inclusion, and the development of competitive economies. In this section we explore each of these dimensions in turn.

**Economic inclusion: Reducing poverty and income inequality**

The story of Africa’s recent economic dynamism is, by now, a familiar one. Africa is enjoying its strongest growth performance in 40 years. Since 2000, most African countries have maintained average growth rates of above 5% per year, despite an adverse international climate. And there have been some exceptional performers. In the decade to 2010, Angola averaged 11.1% growth, Nigeria 8.9%, Ethiopia 8.4%, Mozambique and Chad both 7.9%, and Rwanda 7.6%, putting them among the 10 fastest-growing economies in the world. In addition, other countries came close to the 7% level of growth needed for an economy to double in size every 10 years. In 2014, Africa’s low-income countries averaged 5.8% GDP growth and the growth prospects look solid to the end of this decade and beyond.

There are a range of reasons for this strong performance. High commodity prices have clearly contributed, as have new natural resource discoveries and stronger trade and investment relations with China and other emerging economies. Yet beyond the natural resource boom, the strong growth performance also rests on significantly better economic management and a much improved business climate. Long-term factors, such as strong population growth, urbanisation, the rise of the African middle class and the spread of ICT, have also played a part. While the growth story is a positive one, performance in the area of economic inclusion is less encouraging. Growth remains concentrated in a limited number of sectors and locations; it is not yet translating into new jobs and livelihood opportunities for the majority of Africans. In Nigeria, for example, a decade of rapid growth was accompanied by substantial increases in unemployment, from 14.8% in 2003 to 24% in 2011. Over three-quarters of Africans are self-employed or in family businesses, mostly in agriculture or micro-trade, which offer few opportunities for advancement.

In the absence of mass employment creation, poverty rates have fallen relatively slowly. The proportion of the population living below the poverty line reached 42.3% in 2014 across Africa as a whole — an improvement of just 0.1% since 2010. While the rate of poverty reduction in low-income countries is slightly higher, it is clear that the benefits of growth are not being shared widely. Income inequality, as measured by the Gini Index, has improved slightly across Africa as a whole, but has slipped backwards in low-income countries. Six of the world’s 10 most unequal countries are in Africa.

One of the more promising trends in the African economy is the rise of the middle class. In 2011, using the threshold of $2 in income per

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1 A green bullet indicates that progress is strong and better than peers.
2 A yellow bullet indicates that progress is positive but less than peers or no progress against the baseline.
day, we calculated that 313 million Africans had achieved middle-class status. By 2030, this number is expected to reach half a billion, or nearly a third of the population. The rise of the middle class — clustered in Africa’s rapidly growing urban centres and dominated by young, outward-looking people who are quick adopters of new technologies — is a potential game changer for the African economy. It has created an increasingly attractive market for goods and services, for both foreign and domestic investors.

Yet the middle class is growing only slightly faster than the population as a whole. The number of people in the upper-middle-class category ($10–$20 per day) has increased by only 2% over the past decade, despite growth rates of 5–6%. As a result, the consumer boom remains confined to a few countries. Across the board, African households still spend 80% of their income on food. Indeed, in the short to medium term, the innovations required for commercial success in the African market will be around producing inexpensive versions of consumer items and selling them in small packages that are accessible to the poor.

By 2030 the African middle class will reach half a billion, creating an attractive market dominated by young outward-looking people

Africa’s relatively slow progress in addressing income poverty indicates a lack of structural transformation in African economies. Asia’s huge progress in poverty reduction came about through the mass creation of low-skilled employment, as Asia become the world’s workshop. We have yet to see this shift in Africa. A few countries — Mauritius, South Africa, and Uganda — have made progress in shifting labour from traditional, low-value-added agriculture into more productive manufacturing and services. Côte d’Ivoire, the world’s largest source of cocoa beans, has begun to capture more value from its exports by expanding local capacity in chocolate production. It has attracted three multinational companies in its effort to capture a share of a global confectionary market estimated to be worth $84 billion.

But overall there has been limited progress in diversifying African economies away from their traditional reliance on unimproved primary products. In fact, sub-Saharan Africa’s share in global manufacturing has declined in recent years. The level of innovation in the African economy — the creative abandonment of inefficient means of production in favour of new, more productive methods — remains far too low.

Surveys of African businesses offer many reasons for this lack of innovation: unreliable electricity supply, poor transport connections, burdensome regulations, inadequate finance and a lack of skills within the workforce. Until the conditions are in place for greater innovation, Africa’s growth will not be inclusive enough to make major inroads into poverty.

Box 1.1 GDP re-basing — recalculating the size of Africa’s economy

In recent years, a number of African countries have made upward revisions in their official calculations of the size of their economies, by changing the calculation method. In 2014, Nigeria announced that its economy was nearly 90% larger than previously thought, thereby leapfrogging over South Africa to become Africa’s largest economy. The exercise also reveals a more diversified economy than previously estimated. Earlier, Ghana and Kenya had revised their gross domestic product (GDP) upwards by 60% and 25%, respectively.

Real GDP is calculated by reference to a base year. The further back the base year, the less reliable the estimates become. The International Monetary Fund advises countries to update their base year at least every 5 years. Only 10 of Africa’s 54 countries meet this standard, and a few use base years that are more than 20 years old. The AfDB estimated that Africa’s true GDP may be a third higher that the current estimates — a potentially encouraging signal to investors.

Spatial inclusion: Expanding access to infrastructure

Among the various constraints on innovation in Africa, the huge deficit in infrastructure stands out as the most basic. Thirty African countries face chronic power outages. High transport costs add 75% to the price of goods. Poor water and sanitation costs some 5% of GDP. While Internet penetration is increasing quickly in Africa, it is still well behind that of other developing regions. All of these conditions are barriers to the adoption of the new technologies and methods of production.

And yet, the infrastructure deficit in Africa is one of the factors that makes innovation imperative. Africa cannot afford to wait for the slow build-up of its infrastructure stocks over the next two decades. It needs to find innovative ways to fill the gaps and work around the deficiencies.

Electric power is an obvious precondition for the adoption of many new technologies. The electrification rate has increased to 42.5% across Africa (but just 24% in low-income countries), as compared to 77% across the developing world. This means that 620 million people and 10 million small and medium-sized enterprises (SMEs) are without access to power. The rate of electrification is not keeping up with population growth. Since 2000, an additional 145 million people in sub-Saharan Africa gained access to electricity, but the total without access still rose by 100 million.

The wide gulf between electrification in urban areas, which averages 65%, and in rural areas, at just 28%, is a significant driver of inequality. And even those who do have access to electricity face regular outages and prices that are on average three times those of Europe or North America. Losses across poorly maintained networks are double the global average. The lack of reliable power forces firms to rely on back-up generators running on diesel or gasoline, at an estimated total...
fuel cost of $5 billion in 2012. The lack of power is a major barrier for firms wishing to invest in new plant and equipment. Yet there have been some major successes at the national level, showing what can be achieved through sustained commitment. In Ghana, 25 years of investment have boosted the electrification rate above 70%.

Around 700 million Africans live without clean cooking facilities. The use of biomass — which remains Africa’s dominant energy source — poses both health and environmental threats. Foraging takes up a disproportionate amount of time, especially for women and children. The predominant form of lighting in African homes is kerosene (paraffin), which costs poor households $100 for the equivalent of a kilowatt hour — more than 100 times the cost of lighting in wealthy countries. Indoor pollution from unimproved stoves and lamps is estimated to cause 600,000 deaths in Africa each year.

In Ghana, 25 years of investment have boosted the electrification rate above 70%.

However, the increasing availability of clean energy is already beginning to make a difference. The use of off-grid and mini-grid solutions is growing rapidly. South Africa is using solar and mini-hydropower plants to provide power to remote areas; by 2014 it had successfully powered 700 schools, 600 health clinics and 800 other public buildings. While solar power remains relatively expensive, exchanging an inefficient kerosene lamp for a solar appliance that can also charge a mobile phone is an increasingly attractive proposition. The latest figures suggest that around 5% of the Africans without access to electricity grids are now making use of solar lighting. With most of Africa enjoying 320 days of bright sunlight each year, the potential for solar power and other renewables will grow exponentially as technology improves and costs come down.

Transport infrastructure is another basic condition for economic transformation and inclusive growth. Affordable, all-season transport connections are key to linking African producers to each other, to their sources of inputs and to their markets in Africa and beyond. Investment in transport infrastructure is increasing, thanks to major Africa-wide programmes like the Programme for Infrastructure Development in Africa, but it is still well short of what is required. On average, African countries invested 15–25% of their GDP in transport infrastructure between 2005 and 2012; by comparison, India invested 32% and China 42%. As a result, Africa’s transport infrastructure is improving but not yet catching up with other developing regions of the world.

Roads are the dominant form of transport in Africa, carrying 80% of goods and 90% of passengers. Africa’s road density (km of road per km² of territory) reached 8.2 in 2014, compared to 7.9 in 2010. A high proportion of the road network is unpaved and therefore unusable in the wet season. Just 35% of Africans have access to an all-season road, compared to 67% across all developing countries. Once again, however, the figures show that the problem can be addressed through sustained investment programmes. Ethiopia has succeeded in reducing the average distance to an all-weather road from 21 km in 1997 to 12.4 km in 2012, with a significant impact on poverty and food security. Rail remains underdeveloped across the continent, with few additions since colonial times.

Figure 1.2 New frontiers for trade in Africa

Africa represents only 5% of global maritime trade and less than 2% of the container traffic in the world, but trading volumes have increased fourfold since 2007.

A new network is emerging connecting the interior to the sea: along with Tanger, Le Cap, and Dakar, new ports are being developed at Lamu and elsewhere. Between 2007 and 2017, more than 50 billion $ will be invested in Africa to develop ultramodern automated port terminals.
Ports are critical for allowing African producers to access world markets, for both inputs and exports. Africa has 64 ports in total, but many are poorly equipped and offer long processing times and poor handling rates. Shipping costs to and from Africa are on average 50% higher than between other continents. However, Africa’s regional hubs — such as Durban, Dar es Salaam, Mombasa and Djibouti — are all developing, and new regional capacity is emerging (see Figure 1.2). For example, Senegal’s Dakar Port Container Development Project has created 24-hour operating capacity, reducing the waiting time for ships from 15 to 2 hours.

Air connections are also becoming increasingly important, especially for landlocked countries. These connections are key to the development of perishable exports, such as cut flowers, meat and vegetables. Air freight costs remain high because of low volumes of passenger traffic, high taxes and limited infrastructure. Ethiopian Airlines has nonetheless doubled its fleet capacity over the past 5 years and plans further expansion.

The expansion of telecommunications in Africa has been one of the most visible drivers of innovation over the past decade. **Access to telephone services** reached 742 per 1000 people in 2014 — up from 538 in 2010 — and penetration is growing at 4.2% annually. This figure is dominated by mobile subscriptions, as African countries leapfrog over the heavy infrastructure costs of landlines networks. Mobile phones are also the predominant means of accessing the Internet. Because few carriers offer handset subsidies, the cost of smartphones remains one of the key barriers to Internet access. However, with Africa now the second-largest mobile phone market in the world, more manufacturers are offering affordable products. There has been substantial investment in recent years in submarine cables, bringing broadband coverage up to 16% in 2012, although landlocked countries and remote areas lag behind. Mobile communications are opening up a raft of new business models and ways of delivering education and government services.

**Between 2007 and 2017, more than $50 billion will be invested in Africa to develop ultramodern automated port terminals**

With mobile data traffic expected to rise twentyfold by the end of the decade, the main economic impact of this revolution in connectivity is still ahead (see Figure 1.3).

For many African countries, water and sanitation have proved to be the most challenging of the Millennium Development Goal (MDG) commitments for many African countries. **Access to an improved water source** reached 68.2% in 2014 — an improvement of less than 2% over 2010. **Access to improved sanitation** has in fact declined slightly, to 39.1%, as investment has failed to keep up with population growth. Sanitation has improved in rural settings in low-income countries, thanks to increases in donor investment, but has stagnated in urban areas, with sharp divisions between wealthier and poorer neighbourhoods. In areas affected by political instability and refugee movements, the lack of clean water and sanitation continues to be a major public health threat. It also poses a significant burden on women and girls, who often walk long distances to access water. Clean water is a critical input for agro-processing industries and therefore key to opening up new livelihood opportunities and increasing food security. As climate change increases water insecurity, communities across Africa will need to become more innovative in their management of this resource.

**Social inclusion: Ensuring equal opportunities for all**

2015 marks the end date for the MDGs and the expected launch of new Sustainable Development Goals. It is therefore an apt time to
reflect on Africa’s progress on social inclusion, through the provision of basic services and economic opportunities for all. Observers agree that the 15-year MDG period saw accelerated progress in Africa across the full range of socioeconomic indicators, particularly those related to improved education and health services. This progress shows the extraordinary socioeconomic returns that can be gained from investments in social measures like primary education, child immunisation and social safety nets.

Eight of the world’s ten best MDG performers are African. Yet not all of Africa’s MDGs will be achieved (see Figure 1.4), not for any lack of effort, but because of Africa’s tough initial conditions. Furthermore, with the Ebola epidemic causing untold harm in Sierra Leone, Guinea and Liberia, 2014 has brought a stark reminder of how essential sustained investment in health services is. Looking ahead over the next 20 years, rapid population growth, urbanisation, climate change — indeed, the development process itself — will all give rise to new forms of vulnerability, calling for innovative policy solutions.

In the health arena, Africa has made considerable progress in extending health services to the population. Child mortality has declined sharply, from 177 deaths per 1000 live births in 1990 to 98 in 2012. Though this is short of the target of a two-thirds reduction, it reflects the difficult starting point across most of Africa. Neonatal mortality, in Africa and around the world, has proved a tougher problem to address, and substantial improvements are still required in immunisation coverage. Maternal mortality was down to 870 deaths per 100 000 live births in 2013 — a 47% reduction since 1990.

The rise of HIV-AIDS prevalence has been reversed: the rate has fallen from 5.8% in 2000 to 4.7% in 2012, thanks to strong national campaigns on prevention, treatment, care and support. However, the number of people living with HIV-AIDS in sub-Saharan Africa continues to grow, reaching 25 million. Malaria prevention and treatment campaigns have been expanded, and both incidence and death rates have declined. Overall, life expectancy in Africa reached 59 years in 2014, against a global average of 71.5 years. But increased life expectancy and economic development itself will create new challenges for African health systems — including a rise in chronic diseases like diabetes and cancer.

In the education sphere, Africa is on track on its MDG for primary enrolment. With significantly expanded infrastructure and a range of programmes — including school feeding and cash transfers — to improve access and retention, most African countries have achieved net enrolment rates above 80%. Gender equality has improved dramatically at the primary level, although it falls away at secondary and tertiary levels. Yet 22% of primary-school-aged children are still out of school, and completion rates remain relatively low. Across all three education levels, enrolment in education stands at 45% for Africa — the same proportion as in 2010. Sadly, learning outcomes have deteriorated in some countries as school systems have struggled to cope with expanded enrolment. This means that improvements in the quality of education need to be made. A third of primary school students leave without acquiring basic competencies in reading and mathematics. Although firms across Africa cite the lack of skills as a major constraint on their businesses, the proportion of secondary students receiving vocational or technical education has declined, from 12.5% in 2010 to 11.4% in 2014, suggesting that education systems are not being adapted to the needs of the labour market.

One dimension of social inclusion that has received heightened attention from policymakers in recent years is the challenge of youth employment. Half of the African population is now under 25, and there will be an additional half-million 15-year-olds each year for the next 20 years. This generation of young Africans is the most educated in history, but most of them have no better prospects for employment and earnings than their parents did. While the unemployment rate in sub-Saharan Africa is fairly low, at 8.2%, formal employment accounts for just 16% of jobs in sub-Saharan Africa and is not expanding at anywhere near the rate required to absorb the new labour market entrants. The great majority of young people therefore work on family farms or other household enterprises, which offer few opportunities for advancement. Even in the best-case scenario for the expansion of African manufacturing over the coming decade, the

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**Figure 1.4 MDGs: 2014 progress chart**

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<tr>
<th>Goals</th>
<th>Northern Africa</th>
<th>Sub-Saharan Africa</th>
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<tbody>
<tr>
<td>Goal 1: Eradicate extreme poverty and hunger</td>
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<td>⬤</td>
</tr>
<tr>
<td>Goal 2: Achieve universal primary education</td>
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<tr>
<td>Goal 3: Promote gender equality and empower women</td>
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<td>Goal 4: Reduce child mortality</td>
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<td>Goal 5: Improve maternal health</td>
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<td>Goal 6: Combat HIV/AIDS, malaria and other diseases</td>
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<td>Goal 7: Ensure environmental sustainability</td>
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<td>Goal 8: Develop a global partnership for development</td>
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- ⬤ Target already met or expected to be met by 2015
- ⬤ Progress insufficient to reach the target if prevailing trends persist

Source: UN
Empowerment of women is not just morally right; it is also key to dispossession following divorce or widowhood. The economic land rights, including restrictions on inheritance and vulnerability have lower access to inputs like fertiliser. Women face unequal occupations, with correspondingly lower earnings. Even in formal work, they are more likely to be self-employed and in low-productivity occupations, with correspondingly lower earnings. Even in formal employment, their wages are 10% to 30% lower than men's. Women-headed farms tend to be less productive, because women have lower access to inputs like fertiliser. Women face unequal land rights, including restrictions on inheritance and vulnerability to dispossession following divorce or widowhood. The economic empowerment of women is not just morally right; it is also key to promoting inclusive growth.

Political inclusion: Securing broad-based representation

It is clear that Africa’s recent strong growth performance rests on a foundation of significantly improved economic governance. Yet governance remains one of the most important constraints on economic transformation and inclusive growth.

At the level of political representation, many of the indicators look positive. The numbers of countries with regular elections continue to rise, while nondemocratic regimes are increasingly isolated. The African media are becoming freer, helped by the rise in citizens' access to information through the Internet. According to Afrobarometer, 71% of Africans believe in democracy, but only 43% are satisfied with the way their democracy works. As a result, there is a real question as to whether Africa's political systems are robust enough to manage the pressures associated with rapid population growth, urbanisation, and the lack of economic opportunity for young people.

Government capacity to promote economic transformation presents a mixed picture. The Mo Ibrahim Index of African Governance registers a slight overall improvement in African governance between 2010 and 2014. The average, however, hides considerable variation. In recent years, 39 countries have improved their performance while 13 have slipped back. Most of the progress has been on participation and human rights, with economic governance static and public safety and the rule of law going backwards. Every country has slipped on at least one indicator, showing the vulnerability of good governance to setbacks and reversals. In the AfDB’s Country Policy and Institutional Assessment, the average score across Africa has slipped backwards since 2010, from 4.0 to 3.43.

Facing huge financing needs, African countries need to do more to mobilise domestic resources. Tax and non-tax collection as a share of GDP remained stable in 2014 compared to 2010, at 22.3%. But it decreased from 29% in 2013 reflecting the difficulties resource-rich countries encounter in taxing multinational companies. The figure for low-income countries is more positive, showing a slight rise to 17%. The challenges include low savings rates, a limited tax base, poor tax administration, and business regulations that allow opportunities for tax evasion. Africa urgently needs laws that restrict transfer pricing by multinational companies and capital outflows to tax havens.

66% of Africans are willing to pay higher taxes in return for better public services

On the expenditure side, most African countries have improved their budget formulation but have made less progress on budget execution. A continuing disconnect between plans and budgets, and between budgets and actual expenditure, suggests that some countries are still unable to target their expenditure to development priorities. Poor reporting, accounting and auditing practices create inefficiencies and leakage. An Afrobarometer survey found that, while 66% of Africans would agree to pay higher taxes in return for better public services, 62% did not understand the tax system and 76% were unsure of how government used the revenues. Greater integrity and transparency in public financial management might therefore translate into increased willingness of citizens and firms to pay their taxes.

The last two years have seen a worrying spike in armed conflict across Africa. Civil conflict affected the Central African Republic, Sudan, South Sudan, Mali, Nigeria, eastern Congo, and Somalia, causing wider threats to the stability of their regions. The drivers of these conflicts include the lack of economic opportunity, the rising cost of living, prolonged social exclusion, extreme inequality and competition for natural resources — a reminder of the extent to which conflict and poverty are mutually reinforcing. At present, some 20% of Africans or 200 million people live in fragile states.
Sustaining growth: Building competitive economies

The private sector is driving Africa’s strong growth performance; it generates 90% of jobs and 70% of the continent’s output. As a result, efforts to improve the business environment can have a significant impact on growth performance. Over the past four years, the average time required to start a business has fallen from 42 days to 26, and just 20 days in low-income countries. Some 400 000 new African companies are now registered each year. There have been widespread improvements in property registration, cross-border trade, tax regimes and investor protection. On the World Bank’s Doing Business Index, sub-Saharan Africa accounted for 5 of the top 10 improvers (Benin, Togo, Côte d’Ivoire, Senegal and DRC). The countries with more favourable business environments are rewarded by increased levels of trade and investment.

Box 1.3 Boosting Africa’s competitiveness

In 2014-15, Kenya succeeded in moving up six places on the Global Competitiveness Index, to 90th place, registering improvements in 11 of 12 pillars. It performs relatively well on market efficiency, with well-developed financial markets and relatively efficient labour and goods markets. Since the adoption of its 2010 Constitution, it has performed increasingly better on the efficiency of government and reduced corruption. It scores well for basic education and on-the-job training, but its secondary and tertiary enrolment rates are still low. Its most serious challenges include inadequate electricity supply, a weak public health system and continuing security issues.

Economic transformation will require a lot of investment. It is encouraging that despite the challenges, Africa is becoming more attractive as an investment destination. In a recent survey of business leaders, Africa was ranked as the second-most-favoured region of the world, with 60% of respondents expressing the view that conditions are improving. This investor optimism is reflected in growing foreign direct investment (FDI) figures for sub-Saharan Africa, which have risen by an average of 19.5% per year since 2007. Ghana, Kenya, Mozambique, Nigeria, South Africa, Tanzania, Uganda and Zambia are all among the leading destinations. In addition, FDI projects are diversifying beyond the extractives industries to include more consumer-facing industries: telecommunications, retail, financial services and manufacturing. For example, the Chinese shoe manufacturer Huajian has established a 600-person factory in Addis Ababa and is planning major new investments in Ethiopia’s light-manufacturing sector, while US technology giant General Electric is investing $250 million in an electrical gear manufacturing plant in Nigeria. At the same time, intra-African investment is also on the rise (see Figure 1.5).

One of the key conditions for achieving competitiveness and sustainable growth is regional economic integration. African policymakers have long recognised the need for measures to overcome Africa’s fragmentation into too many national markets, many of them small and landlocked. Over the past four years, intra-African trade has grown steadily, to $145 billion, or $32 billion for low-income countries. Yet this still represents just 22% of total African trade — a lower level of economic integration than the ASEAN region, at 26%, or the European Union at 62%. To promote integration, Africa has established a complex architecture of regional economic communities (RECs), which is gradually being rationalised. Three major RECs in eastern and southern Africa have established a Tripartite Free Trade Area covering 25 countries with a combined population of 600 million and a total GDP of $1 trillion. In central Africa, two resource-rich RECs...
are planning a merger. Yet there are still many barriers to the free movement of goods, services, people and capital, and the cost of trading across borders has in fact increased by 14% since 2010. A truck on the transport corridor from Koutlala in Mali to Dakar, Senegal, still crosses 100 checkpoints and border posts. Only two mainland African countries — Mozambique and Rwanda — offer visa-free access or visa-on-arrival to other African citizens.

A final key element in sustaining growth is financial inclusion. At present, two-thirds of African adults are financially excluded — that is, they do not use the services of any financial institution. Access to financial services can assist in overcoming the challenges of irregular incomes and unexpected bills, such as an illness in the family. It can help reduce poverty by providing greater access to education and health care, and funds for microbusinesses. Given the challenges to extending conventional banking services across Africa, this is an area that calls for innovation. Financial products need to be tailored to the poor — for example, by timing loan repayments to match seasonal income or by reducing the minimum requirements for savings accounts. Services also need to be made accessible to the poor, either by using retailers as intermediaries or by making using of mobile phone connections. While Kenya has been a leader in this area, other African countries are now following suit.

**Transition towards green growth**

Africa is blessed with abundant natural resources. With careful husbandry, this natural wealth can offer millions of Africans not just an escape from poverty, but also a route towards lasting prosperity. But Africa’s dependence on natural resources also makes it acutely vulnerable to environmental degradation and climate change. Africa needs to transition towards a green development pathway that protects the rights and interests of future generations.

Green growth means balancing economic development with environmental sustainability by addressing resource depletion, damage to ecosystems, pollution and climate change. It means ensuring that resource rents are reinvested responsibly, to preserve natural and social capital. It means managing growing water stress, adjusting agricultural practices and making communities more resilient to extreme weather. Africa is not going to achieve a green growth pathway overnight. But it needs to begin planning its transition now, to avoid locking itself into unsustainable development pathways.

**Building resilience and adapting to a changing environment**

Of all the world’s continents, Africa is the most exposed to the impacts of climate change. As global temperatures rise, the hydrological cycle is expected to intensify, with water-scarce areas becoming drier even as more rain falls in the tropics. The climate will become more volatile, with increased frequency of both droughts and flooding. Climate change will compound existing environmental problems. Currently, 200 million Africans live on degraded land, and 37% of the continent is at risk of desertification. Africa’s vulnerability comes from its heavy dependence on rain-fed agriculture, its lack of economic diversification and its relatively weak institutions.

“Africa’s hydropower capacity is estimated at 285 GW — more than 3 times the current electricity needs of sub-Saharan Africa”

A major priority will be building resilience to water shocks. Water is at the centre of the water-energy-food nexus (see Figure 1.6). It is critical to farmers, herders and fishers, as well as to the prospects for sustained growth and development.

By 2050, global demand for energy will nearly double, while the demand for food and water will increase by over 50%. Meeting this demand, against a backdrop of limited resources and climate change, will be a significant challenge. Water, energy and food systems are closely interlinked, creating a nexus that determines whether water, energy and food security objectives can be achieved simultaneously. Innovative solutions, such as renewable energy technologies, can help manage the trade-offs, bringing benefits across all three sectors.

**Figure 1.6 The energy, water and food nexus**

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Source: IRENA

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4 The RECs are SADC, COMESA, and EAC (Southern African Development Community, Common Market for Eastern and Southern Africa and East Africa Community); those in central Africa are CEMAC and ECCAS (Economic and Monetary Community of Central Africa and Economic Community of Central African States).

5 A grey bullet indicates that data are not available to measure progress.
Africa has made important progress in this area — the proportion of the population that is food-insecure declined from 29% in 2010 to 27.6% in 2014, and Africa’s position on the Global Hunger Index is now better than South Asia’s. However, the picture is affected by political instability and local food prices, and it varies across countries. In recent years, a number of countries — Burkina Faso, Central African Republic, Gambia, Niger, Mali, Togo and Tanzania — have declared food security emergencies and prepared national action plans to address these challenges.

Africa still has a great deal of work to do to put in place the necessary adaptation measures to avoid being overwhelmed by the effects of climate change. It needs better early-warning systems for droughts and floods and strong local community structures for meeting threats. It needs substantial investment in reforestation to protect surface water systems, and in rainwater catchment and storage to meet human and agricultural needs. Africa’s rapidly growing cities also urgently need investment to protect them against seawater inundation, improve drainage and sanitation, and reduce the risk of water-borne diseases in the aftermath of flooding. The full costs are very difficult to calculate, but World Bank estimates suggest that Africa could face annual costs of $350 billion to adapt its agriculture systems and infrastructure, if global temperatures rise by more than 2°C. Africa’s institutional capacity for environment sustainability also needs to improve substantially.

Managing natural assets efficiently and sustainably
As new mineral discoveries are made across Africa each year, the responsible management of revenues from the extractive industries has become a key priority. If reinvested in sustainable development, these resources could make a huge contribution to national development. Without proper governance arrangements, however, they can drive both conflict and corruption. The innovations required are therefore primarily in governance. Africa’s resource-rich countries need to ensure greater participation in and transparency of decision-making on natural resource management. They need a clear consensus on national development goals, striking the right balance between spending on immediate social needs and long-term investments. To that end, many of Africa’s resource-rich countries are developing sovereign wealth funds to ensure that resources are used for the benefit of future generations. Since 2012, Angola, Nigeria, Senegal and Ghana have established sovereign wealth funds with initial seed capital of $5 billion, $1 billion, $1 billion and $100 million respectively.

African countries import $25 billion in foodstuffs, but only $1 billion comes from other African countries

Africa also needs to take care of its abundant renewable resources, especially its land. Over the next 20 years, Africa faces the challenge of doubling its agricultural output while dealing with adverse changes to its climate. Yet this challenge is also an opportunity. African countries currently import $25 billion in foodstuffs, but only $1 billion comes from other African countries. If Africa could supply more of that market through domestic
production, it would provide a route to secure and prosperous livelihoods for a growing population. With agriculture generating 57% of all employment and providing the main source of income for 90% of the rural population, boosting agricultural incomes through better farming and agro-processing is an indispensable step in defeating poverty.

**Agricultural productivity**, which has improved little over the past 30 years, increased from $537 per worker in 2010 to just $547 today. Less than 5% of agricultural output involves irrigation, and fertiliser use for arable crops is just 8 kg per hectare, compared to a global average of 100 kg. Climate change threatens to reduce yields even further. Improving productivity will require progress in a range of areas, including land tenure, access to inputs and markets, and improved transport and storage facilities. Part of the solution may lie in technological innovations, using biotechnology to create crops that are resistant to pests, disease, drought and waterlogging.

African agriculture needs to become not an occupation of last resort but one of opportunity. At present, smallholders are dependent on middlemen for access to markets for inputs, services and outputs, which deprives them of the income they need to invest in increasing productivity (see Figure 1.7). Breaking out of this vicious circle requires innovations in business models and financing. Some innovations are starting to happen, although on a small scale. For example, in Ghana, the agricultural company Premium Foods is providing “nucleus farmers” with financial guarantees that enable them to supply inputs to out-growers on credit and be repaid in kind from post-harvest produce. In Burkina Faso, Pickou Export Ltd. has developed a professionally managed hub to support smallholders growing sesame and black-eyed peas. Such inclusive business models, in which firms share risks and benefits with smallholders in an equitable way, are crucial to promoting inclusive growth in agriculture.

**Promoting sustainable infrastructure**

Africa has made a negligible contribution to the global production of greenhouse gases. Nonetheless, its ecological footprint is growing through population growth, urbanisation and economic growth. Its **production efficiency** (that is, carbon dioxide emissions per dollar of GDP) has decreased slightly, from 0.18 kg in 2010 to 0.16 kg in 2014. Africa now has 52 cities with populations above 1 million (the same number as Europe), and the total urban population is above 400 million, of whom half are slum dwellers. These rapidly growing cities pose serious environmental challenges and are in desperate need of investment in infrastructure. Using the latest technologies and environment management techniques will be expensive in the short term, but unquestionably more economical over the longer term.

One of the areas in which innovation is already beginning to make a real impact is clean energy. Africa has half of the world’s clean energy potential and the potential to bypass older technologies and become a global leader in sustainable power. Its technical hydropower capacity is estimated at 285 GW — more than three times the current electricity needs of sub-Saharan Africa — of which less than 10% is currently tapped (see Figure 1.8). The Grand Inga project in DRC, if it goes ahead, has the potential to transform Africa’s power supply picture.

![Figure 1.8 Potential hydropower capacity in Africa (GW)](image)

But many of the most useful innovations in clean energy will be mini-grid or off-grid solutions using solar, wind or small-scale hydro power, either in combination with, or instead of, diesel generators. The cost of producing solar power is falling quickly — from $4 per watt in 2008 to just $1 today. This is opening up new business opportunities. Some 5% of households without electricity now use solar devices, and this share is expected to grow rapidly. Sales of solar-powered mobile phone charging devices are doubling annually.

*The cost of producing solar power has fallen from $4 in 2008 to just $1 today, opening up new business opportunities*

There is now a market for innovative appliances that can run on the low-voltage direct current produced by solar power systems. A Ugandan company, SolarNow, has produced a $200 low-voltage television set, and a British-designed refrigerator, Sure Chill, needs only a few hours of power each day to maintain a constant temperature of 4°C. Solar-powered ATMs are being deployed in rural areas with intermittent mains power. Scaled up, such solar power systems can be used to power a school or health clinic, or even a mini-grid. A $500 000 plant in Kisiju Pwani, a village in Tanzania, uses...
32 photovoltaic solar panels and 120 batteries to provide 12 kW of electricity — enough for 20 street lights, 68 homes, 15 businesses, two mosques and the local government office. Considerable investment is still needed to identify innovative clean energy solutions that can be delivered cost-effectively to remote locations. But as the costs come down, the opportunities are growing rapidly.

**Conclusion and outlook**

There is little doubt that Africa is becoming more innovative. Yet change is not yet fast or deep enough; the current strong growth performance will take Africa only so far. There is a need for structural change in the African economy to create the jobs and livelihood opportunities that will lift more Africans out of poverty. Challenges like urbanisation and climate change need to be addressed early, or they will become increasingly unmanageable. Furthermore, if the rising expectations of a new generation of Africans are not met, African societies will find themselves under increasing pressure.

Mobile technology has become an increasingly important platform for business across Africa. Better communications help in many aspects of private sector activity. In Kenya, the M-Pesa system has provided new financial services to sections of the community that have no access to traditional banking. It is exciting to see new technologies imported from abroad being adapted to African conditions and used in innovative ways, creating business opportunities that are distinctively African.

Africa needs innovation in many other areas. It needs to use the opportunities created by the falling costs of new energy technologies to bring creative power and water solutions to more Africans. Business must explore new models of delivering goods and services to more Africans. Agriculture must become knowledge-driven, to turn it into an occupation of opportunity, rather than necessity. Communities need to organise themselves in new ways, to become more resilient in the face of a changing climate.

All this in turn requires governments to invest in creating the conditions for innovation — from the infrastructure connections that give businesses the confidence to invest and help them work with each other, to sustained investment in raising the skills of Africans in science and technology.