Ministry
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Strategic Trends Programme
Africa out to 2045

Conditions of release

Africa out to 2045 comprises one element of the Strategic Trends Programme, and is positioned alongside *Global Strategic Trends – Out to 2045* (Fifth Edition), to provide a comprehensive picture of the future. This has been derived through evidence-based research and analysis headed by the Development, Concepts and Doctrine Centre, a department within the UK's Ministry of Defence (MOD).

This publication is benchmarked at 30 April 2016. Any developments taking place after this date have not been considered.

The findings and deductions contained in this publication do not represent the official policy of Her Majesty's Government or that of UK MOD. It does, however, represent the view of the Development, Concepts and Doctrine Centre.

Preface

Africa covers more than the combined territory of Western and Eastern Europe, China, India and the United States, or more than 20% of the Earth's land surface. Highly diverse in its natural environments, it ranges from highly developed and industrialised to areas that are sparsely populated and difficult to reach. By almost any measure, it contains one of the most diverse populations on the planet, with a global diaspora settled principally in the western hemisphere and Europe. By 2045, Africa will account for approximately a quarter of the global population, and it is likely to remain one of the most economically and culturally diverse regions in in the world.

Comprising more than 50 nations, Africa is also politically diverse. The legacy of the past has meant that the United States and former colonial powers in Europe have had particular influence in the region. However, economic opportunities and natural resources as well as the political and strategic possibilities have meant that this influence is increasingly challenged by investment, trade and competition for political influence from many others. It would be wrong to assume that historic relationships will be deterministic into the future, although many nations in Africa remain committed to the shared values of the Commonwealth. Besides state actors, the influence of multinational companies, whose projects in Africa can be on a vast scale, will continue to be of enormous political significance both within Africa and in shaping its engagement with the rest of the global economy.

It is also a continent that will continue to experience significant challenges. More than half of African states are still 'fragile' and this will remain a driver for instability and violence over the next 30 years. Criminal violence, conflict with and between non-state actors, and conflicts between states will remain significant risks and Africa will also continue to be influenced by conflicts in the Middle East and globally. The reforms necessary to support a growing population may fuel conflict, while nationalism, disputes over control of resources, inequality, political disputes and religious differences may all continue to be drivers of conflict and violence. Areas of relatively weak governance and state control will continue to allow Africa-based terrorist groups and criminal organisations to pose a threat as they pursue both local and international agendas and forge links between each other and to groups operating in other regions.

There is enormous potential for development and growth. The African economy is expected to quadruple in size over the next 30 years. The continent is becoming more closely integrated in to the global economy, and is well positioned to capitalise on
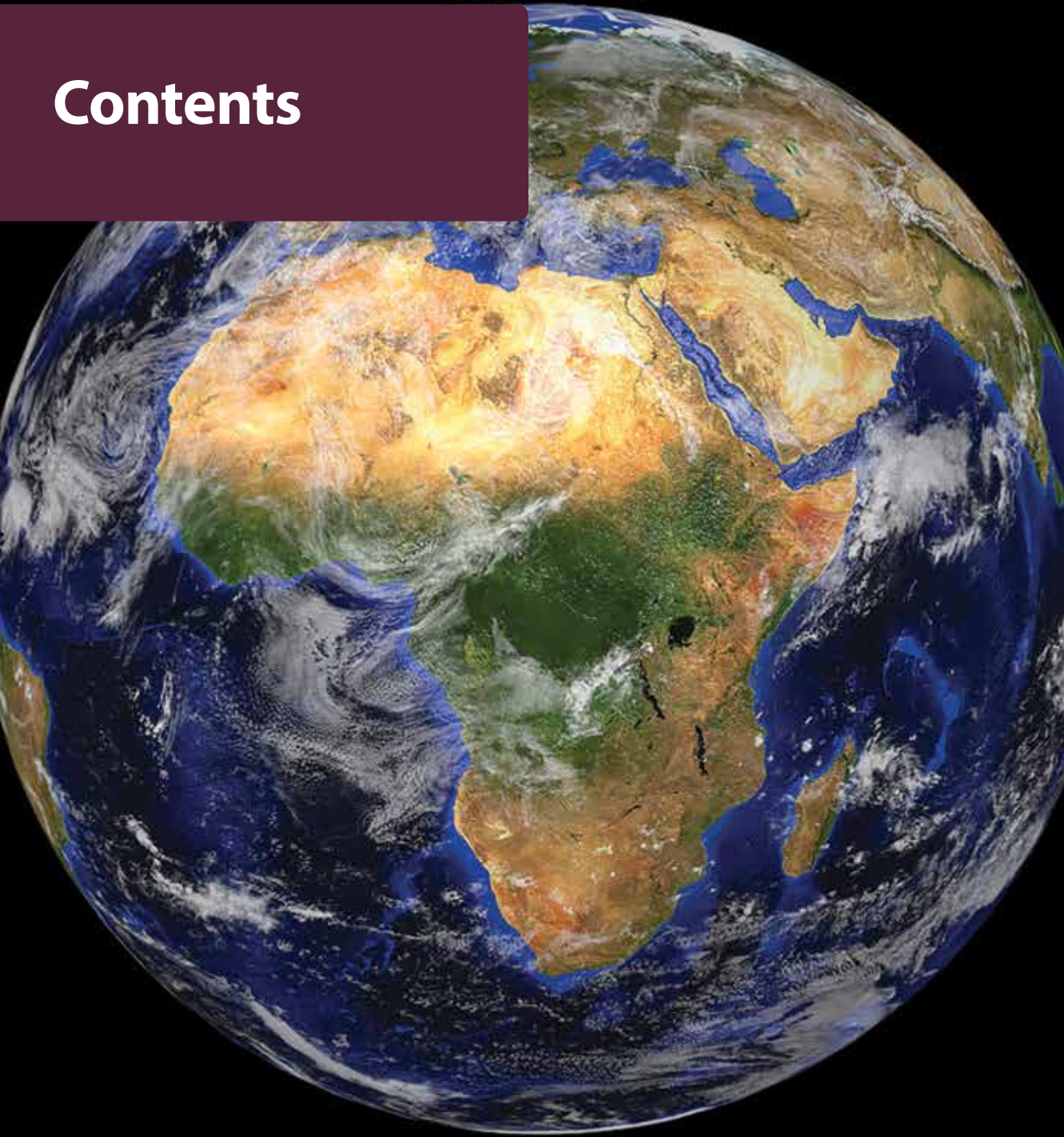
global technological advances in communication, transport and energy production. But it is likely that the effects of climate change on the continent will be significant. Coupled with the pressures of population growth, Africa will be presented with challenges that will need considerable investment in infrastructure and careful management, but will provide opportunities alongside the risks.

The defence and security implications of the trends identified in this study are considerable. Population growth, climate change, the unequal distribution of wealth, extreme poverty and political and religious differences will continue to make conflict between both state and non-state actors a significant threat. Areas of weak or non-existent government may provide a base for extremist groups to operate. African security forces and regional organisations will need support to combat this threat. African countries are likely to become increasingly important allies to countries outside Africa, and the influence of non-European countries is likely to become more significant.

This study highlights both the diversity of the continent and the common challenges faced by much of its population. Part 1 highlights thematic trends that we have identified as significant over the next 30 years, while Part 2 focuses on the diversity within Africa.

The diversity of resources, landscape, population, culture, religion, politics and history of the continent poses significant challenges both for planners within Africa and for those engaging with it. What is clear is that with a growing population, increasing connectedness and enormous untapped potential, the continent's global importance will be increasingly felt over the next 30 years, with significant possibilities for mutually beneficial trade and opportunities to collaborate in international missions and projects.

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Introduction

Africa out to 2045 is published by the Ministry of Defence's Development, Concepts and Doctrine Centre (DCDC) as part of its Strategic Trends Programme – a continuous programme of research, seeking to provide policy-makers with a context for long-term decision-making. It follows on from DCDC's fifth edition of its Global Strategic Trends publication, *Global Strategic Trends – Out to 2045* (GST 5), which was published in 2014.

Following GST 5's publication, the Joint Doctrine and Concepts Board directed that the Strategic Trends Programme should produce a regional survey based on the African continent.

This study objectives are to:

- cover the entire continent;

- give a sense of the scale and complexity of the challenges (and opportunities) that Africa faces;

- identify trends which are likely to shape the future of Africa and highlight the impacts at continent and region level; and

- identify relevant defence and security implications to support UK planning and policy.

A note on methodology: statistics on Africa are limited, often because of a lack of institutional capacity to collect and process data.[1] This makes it difficult to paint a picture of the future and the assessments in this paper must therefore be treated as indicative rather than certainties.

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1   Devarajan, S., (2011), 'Africa's Statistical Tragedy', available at http://blogs.worldbank.org/africacan/africa-s-statistical-tragedy.

Terminology

Whilst the terminology used to denote different regions of Africa is broadly standard, confusion can arise in cases where countries are referred to as being in more than one region. The following terminology will be used throughout this paper.

Africa: All countries on the African mainland and those surrounding islands which are members of the African Union (AU).

Sub-Saharan Africa: All countries not part of North Africa (see below). While it is recognised that the Horn of Africa has its own particular characteristics which differentiate it from the rest of sub-Saharan Africa, we include it in sub-Saharan Africa for ease of reference.

Great Lakes region: The eastern part of Burundi, Democratic Republic of Congo (DRC), Rwanda and Uganda.

This study divides Africa into seven regions which are loosely based on climatic groupings, with some alterations to reflect cultural and political linkages between states.

North Africa: Algeria, Egypt, Libya, Morocco, Tunisia and Western Sahara.

Sahel: Burkina Faso, Chad, Mali, Mauritania, Niger, South Sudan and Sudan.

West Africa: Benin, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Senegal, Sierra Leone and Togo.

Horn of Africa: Djibouti, Eritrea, Ethiopia and Somalia.

East Africa: Burundi, Kenya, Rwanda, Tanzania and Uganda.

Central Africa: Cameroon, Central African Republic (CAR), Congo, DRC, Equatorial Guinea and Gabon.

Southern Africa: Angola, Namibia, South Africa, Lesotho, Swaziland, Mozambique, Botswana, Zimbabwe, Zambia and Malawi.

The islands off Africa, including Cabo Verde, Comoros, Madagascar, Mauritius, Réunion and Mayotte, São Tomé and Principe, the Seychelles and the British Territories of St Helena, Tristan da Cunha and Ascension Island, have not been specifically examined in this study.

Executive summary

Africa, perhaps more than any other region of the world, will experience profound change over the next 30 years. Its population is likely to almost double by 2045, increasing from 1.2 billion today to around 2.3 billion – becoming approximately a quarter of the world's population – and on current trends its economy will have quadrupled. It has a growing middle class which, although poorer and forming a smaller proportion of the population than in any other region of the world, is likely to play a significant role in demanding and improving the quality of governance across the continent. In addition, technology is likely to play a major role in improving the quality of life for most Africans – for example, by increasing access to high-quality healthcare and education, cheaper energy and reliable information. However, despite these positive indicators, Africa may well struggle to compete with the rest of the world. If sufficient opportunities for its rapidly growing workforce are not created, endemic corruption is not tackled and measures to mitigate the impact of climate change are not implemented, then it could, all too easily, fall further behind.

The African economy is expected to grow substantially. Since 2000, it has approximately doubled in size and by 2045 it is expected to have quadrupled. Nigeria's economy, for example, could grow five-fold, though other countries, including the more developed economies of North and Southern Africa, can be expected to grow more slowly. Whilst growing Africa's industrial capacity is likely to be challenging (not least because of a lack of infrastructure), the agricultural and service sectors show particular promise. Looking forward, with a rapidly increasing population Africa constitutes a vast market, although major capital investments and regulatory reform will be required if this potential is to be realised. Despite high levels of economic growth in most African countries, wealth will continue to be unevenly distributed. Although the proportion of people living in extreme poverty has continued to reduce, population growth has meant that the number of people living in extreme poverty has increased – and on current trends will continue to increase.

Africa is becoming more closely integrated into the global economy and, since 2000, foreign direct investment has increased almost five-fold, overtaking aid – a trend that is likely to continue over the next 30 years. Europe is currently Africa's largest trading partner and is likely to remain important (particularly for North Africa) out to 2045. Africa's trade with Asia, however, has risen rapidly over the past two decades, particularly its trade with China and India, and this could eclipse African-European trade by 2045. Brazil is also likely to be an increasingly important trading partner for Africa. As well as boosting growth, integration into global markets is likely to lead to

an increase in the adoption of international standards (such as contract law), a process that should improve governance, particularly in the most integrated economies. As countries' economies grow, governments are likely to become better resourced, which should lead to improvements in governance standards and further economic growth.

Closer integration into the global financial system is likely to bring many benefits, but it is also likely to make Africa's economies more vulnerable to global market fluctuations and crashes. It may also increase the volatility of prices for food and other essential commodities. Closer integration into the global financial system is also likely to allow the proceeds from crime to be moved abroad more easily; it is estimated that approximately US $50 billion is currently extracted illegally each year, a figure that will almost certainly increase.

The highest rates of population growth will be seen in Central Africa, East Africa, the Sahel and West Africa, with the population of some of the poorest countries set to triple. Significantly, the largest increases in population are likely to occur in areas that are already densely populated, such as Nigeria and the Great Lakes region, increasing the risk of tension and conflict there. Although a youthful, working age population could boost the economy, it is also likely to place increasing stress on poorly resourced governments and regions.

Population growth, combined with the impact of climate change, continuing insecurity in many regions and the reducing cost of transport, is likely to result in an increase of African migrants out to 2045. The majority of African migrants are likely to remain inside the continent but the numbers migrating overseas are also likely to increase. Overseas demand for educated African labour may also increase, potentially depriving the continent of skilled personnel. However, economic opportunities in Africa are also likely to attract inward migration; the recent inward movement of well-educated Portuguese to Africa is an example.

In 2013, approximately 15 million African migrants were estimated to be living outside Africa, many of whom send money home to friends and family. By 2015 the African diaspora was estimated at over 30 million people. Recorded remittances in 2015 were worth over US $65 billion (more than the total foreign aid to Africa) but the true size of remittances, which would include unrecorded flows, is believed to be significantly larger than these numbers. Because these remittances go directly to individuals (who tend to spend money on those improvements that benefit them most) without administrative overheads, they often have a greater beneficial impact at the local level than either aid or commercial investment. Out to 2045, as the numbers of Africans living overseas increases, the value of remittances and the flow of ideas and information will also increase.

The number of Africans living in towns and cities is expected to increase from around 470 million today to around 1.2 billion by 2045. Urbanisation has been shown to boost economic growth and there are indications that it can lead to improvements in governance. Many African towns and cities, however, have grown spontaneously without planning or investment. Out to 2045, therefore, many Africans are likely to be living in slums without adequate infrastructure or services – potentially leading to an increase in poverty, outbreaks of disease and, possibly, violence.

Education will be one of the key issues facing African countries over the next 30 years. Although starting from a low baseline, access to and the quality of education is likely to improve out to 2045, not least because of technology. Girls' education, in particular, is likely to improve and in many countries the gap, both in terms of levels of attendance and performance, between boys and girls at the primary school level is likely to narrow substantially.

A growing economy, increasing access to information and improving levels of education suggest that the African middle class should grow out to 2045, although it is likely to be poorer and form a smaller proportion of the population than in other parts of the world. As their income grows, this emerging middle class will seek to make the most of their money, driving tightly-focused increases in consumption centred on African requirements which are likely to create the conditions for sustained economic growth and development. However, as the middle class becomes empowered it is likely to challenge the privileges of the elites and act as a driver for political change – often in favour of increased democracy. Where the elites are unwilling to share or hand over power, conflict is likely to ensue.

Africa is a vast continent with huge geographic and cultural differences. It is therefore unsurprising that no one blueprint can describe current or future governance structures in Africa. However, democracy has continued to advance, albeit falteringly, over the last 30 years across most of Africa. This has been demonstrated by the increasing number of countries setting term limits for their presidents and experiencing peaceful transitions following elections. Despite many challenges, including growing inequality, a rapidly growing population and limited resources, it seems probable that this trend will continue due to improved education, better access to information, growing prosperity and urbanisation, among other factors. Nevertheless, the path will not be smooth and progress can be expected to be disjointed, with setbacks along the way. In particular, greater democracy is likely to lead to populist measures that may challenge Western values as elites feel forced to bend to majority 'conservative' rural values (with which many elites also agree), or indeed those of radical religion, to ensure victory.

It is probable that many countries will not only experience greater democracy but will also see the empowerment of an increasingly wide section of the population, including women and minority groups. However, in some countries elites will resist change and this will, on occasion, lead to violence. Whilst these elites may retain power in the short term, ultimately they are likely to be swept out of power due to popular pressure. In West, East and Southern Africa, authoritarian governments will become increasingly rare and short-lived.

Technological developments are likely to bring revolutionary change and, with limited legacy infrastructure, Africa could be well positioned to capitalise on global technological advances over the next 30 years. By 2045, the vast majority of Africans are likely to be able to access information easily and almost anywhere. Already an early adopter of mobile banking, Africa could pioneer mobile technology to improve education and governance (for example, through social media). Technology is also likely to provide solutions to many of Africa's chronic transport problems; for example,

trials to deliver medical supplies to isolated villages using remotely piloted vehicles are already under way and prototype hybrid air vehicles (air ships) which can carry tons of supplies over hundreds of miles are being developed. Medical advances (for example, new drugs, vaccines and telemedicine) are likely to increase life expectancy and the quality of life for many Africans. However, whilst access to health care is likely to improve for most Africans, it will remain uneven and the standard of health care will remain below that found in Organisation for Economic Co-operation and Development (OECD) countries.

The effects of climate change on Africa are likely to be significant. Although the effects will vary, most countries will see increasingly intense, severe and frequent droughts and floods, erratic rainfall, higher maximum temperatures, and increasingly intense storms. Additionally, sea levels are expected to rise by between 0.32 and 0.38 metres by 2050. This, combined with increasingly intense storms, will place coastal regions at increased risk of flooding. Across the continent, erratic rainfall and environmental degradation are likely to lead to crop failures, which could result in an increase in food shortages. Additionally, the number of people suffering from water shortages is likely to increase, further exacerbated by population growth (which may be more significant than climate change), displacement, migration and a lack of infrastructure. Famine would increase the likelihood of the need for external humanitarian assistance to the continent. However, investing in infrastructure and improved management would mean that sufficient water could be provided in most areas out to 2045.

Sub-Saharan Africa has more than 620 million people living without access to electricity – around half of Africa's population and nearly half the global total. However, Africa has vast potential for energy production, including renewable energy. If the cost of generating energy from renewable resources continues to fall at similar rates to those observed over the last decade, renewable energy production will be cheaper than using fossil fuels by 2045. African countries could, therefore, be meeting the majority of their domestic energy needs using renewable energy, perhaps much of it through small-scale local generation. Additionally, larger renewable energy projects could potentially be exporting electricity to Europe and perhaps beyond.

Better levels of investment (particularly in infrastructure and technology), improved management and land reform could also boost agricultural output in Africa – by some estimates almost tripling production by 2030. There is great potential for Africa in both the agricultural and service sectors. Without investment and improved management, though, Africa will struggle to feed its growing population. Land reform will also be needed; however, this will be problematic, since land is often not owned by individuals but held in informal trusts by a tribe, village or other group. Without clear rights of ownership, land cannot be used as security to raise capital, nor joined together into productive blocks. Reforms have often failed because they have been seen as a way for unscrupulous officials to steal land; struggles over land reform are therefore likely to continue out to 2045.

Around 70% of Africans cite religion as being 'very important' in their lives and this is unlikely to change significantly out to 2045. Religious groups, therefore, will continue to constitute an important social force in Africa, with significant roles in health care,

education and welfare. However, significant numbers of Christians and Muslims (although still a minority of both groups) appear to be becoming increasingly intolerant of religious differences. It is likely that the next 30 years will see an increase in religious conflict both between denominations of the same religion and between Muslim and Christian communities in religiously mixed countries; however, such conflict will often be as much due to local grievances as to religion.

Security will continue to be a key issue for many African countries over the next 30 years. While the level of deaths from armed conflict in Africa has followed the general global decline (if measured in relation to population size), there has been an increase in the level of armed violence since 2010 and this may continue before reducing again out to 2045. The majority of conflicts are likely to be non-international, but violent crime (rather than political violence) is likely to remain the leading cause of violent deaths. Terrorism, including attacks by Islamist extremist groups, is likely to continue to pose a threat in Africa. Out to 2045, extremists could establish a stronghold in Africa, with the Horn of Africa, North Africa and the Sahel at most risk.

The potential for international conflict between African states will not disappear out to 2045, and may even increase. Ironically, the move towards democracy, combined with increasingly capable armed forces, could see an increase in international armed conflict.

Unscrupulous political leaders may be tempted to exploit nationalism and initiate conflict with neighbouring countries as a means of staying in power – particularly as a number of unresolved border disputes remain and environmental change (including climate change) is affecting natural boundaries (for example, the drying up of Lakes Chad and Malawi).

Out to 2045, many (perhaps most) African security forces are likely to see significant improvements in terms of both capability and professionalism. Many African states have made significant investments in their security forces (including in communication and surveillance systems and logistics). A number of states are also procuring maritime offshore patrol vehicles and unmanned systems that are likely to be readily available in the future for a number of tasks in support of both military operations and more general security requirements.

African regional organisations, the African Union in particular, are likely to be increasingly effective and can be expected to play a vital role in maintaining peace and stability in Africa out to 2045.

Regional summary

North Africa is more highly integrated with the rest of the world than other parts of the continent, something which is likely to endure and even increase. There have been high levels of socio-economic development in the region, but this has not been matched by political development, and a focus on security issues in the short term may hinder its ability to counter the root causes. However, the long-term outlook is good if economic development continues and the right institutions are put in place to provide the framework for good governance. This may lead to greater integration with sub-Saharan Africa.

Sahel is the poorest region of Africa but will also see the highest population growth out to 2045. Taken together with the likely effects of climate change, it is likely to remain one of the most unstable areas of the continent out to 2045. This is likely to lead to increased migration, causing international attention on the region to endure.

West Africa as a whole is making progress and is likely to be relatively peaceful over the next three decades, with good economic growth and a consolidation of state authority. However, civil strife is possible due to pressures emerging from urbanisation, different cultural attitudes over education and increasing inequality. An economic east-west divide is likely to develop, with Nigeria pulling the east of the region ahead. Out to 2045, Nigeria is likely to increase its dominance in the region and beyond.

Central Africa, reliant on resource extraction, has seen limited development. However, economic diversification, as seen in Cameroon, may follow in other countries due to the potential impact of a long-term decline in oil revenues. Central Africa has much potential for improvement, with its rapidly increasing population, although this may be dependent on the development of DRC as the potential regional hegemon.

The Horn of Africa is currently one of the least developed of Africa's regions, in particular in terms of governance levels and human development, and is likely to remain so out to 2045. The Horn is dominated by Ethiopia which will continue to play a significant role in the region's development. Its cooperation will be required to make the progress needed in security.

East Africa will continue to have strong economic growth out to 2045 with high levels of urbanisation. The region is likely to form stronger trade relationships with the rest of the world within the time scale. However, enduring corruption and terrorist activity, along with security threats in the Great Lakes region, are likely to remain challenges.

Southern Africa is dominated by South Africa but Botswana, Zambia and Namibia demonstrate how democracy is spreading within the region. In the coming decades, the young and urban-based political groups may come to challenge the established parties in power. Inequality and land ownership issues will be causes for possible unrest. The deep water capability and strategic location of South Africa will enhance its links with emerging global powers.

Key defence and security implications

- Population growth will put pressure on poorly resourced governments and regions – particularly in countries of the Sahel and in densely populated regions, such as Nigeria and the Great Lakes region – increasing the risk of tension and conflict there.

- Population growth, combined with the impact of climate change, continuing insecurity in many regions, and the reducing cost of transport, is likely to lead to a significant increase in the number of African migrants out to 2045. The majority of migrants (although not all) will remain in Africa but overall the number of migrants is likely to be high – causing tension and possibly conflict – both regionally and globally.

- Wealth will continue to be unevenly distributed among the African population, leading to inequality. High levels of inequality are likely to lead to a sense of injustice and grievance amongst the poor – which could result in violent protest, possibly conflict.

- The number of people living in extreme poverty could increase. These people will be vulnerable to famine and other humanitarian disasters, increasing the requirement for humanitarian assistance and disaster relief operations.

- Closer integration into the global financial system is likely to make Africa's economies more vulnerable to global market fluctuations and crashes – potentially increasing instability with the resultant risk of conflict.

- As countries become richer, governments should become better resourced, allowing some to challenge the authority of elites in previously autonomous regions – possibly leading to conflict.

- Religion is likely to remain very important to most Africans and the unscrupulous are likely to try and exploit it for political gain – including by inciting religious conflict.

- Where elites are unwilling to share power and opportunity with the emerging middle class, conflict is likely to ensue – potentially leading to insurgencies or revolutions.

- Many African towns and cities have grown spontaneously without adequate infrastructure or services. If not addressed, this could lead to an increase in poverty, outbreaks of disease and, possibly, violence.

- If Africa is to grow enough food, land reform will be essential, but reform is likely to be resisted by many rural communities, and incidences of conflict over land are expected.

- Climate change will cause an increase in the frequency and intensity of extreme weather events such as flooding and droughts. These are likely to cause water and/or food shortages and lead to the displacement of people, both of which could result in conflict and increase the need for humanitarian assistance and disaster relief operations.

- Environmental change (including climate change) is affecting natural boundaries between countries (for example, the drying up of Lakes Chad and Malawi) which could lead to border disputes – possibly resulting in international armed conflict.

- African countries are likely to become increasingly important as political allies to countries outside Africa. As such they are likely to become more influential on the world stage.

- While armed conflict in Africa has followed the general global decline (if measured in relation to population size), there has been an increase in the level of armed violence since 2010 and this may continue before reducing again out to 2045 as governance improves.

- The majority of conflicts are likely to be non-international armed conflicts, and violent crime (rather than political violence) is likely to remain the leading cause of violent deaths in Africa.

- Islamist extremist groups are likely to continue to pose a threat in Africa out to 2045 and could establish a stronghold in some areas of the continent, with the Horn of Africa, North Africa and the Sahel at most risk.

- A focus on counter-terrorism, perhaps with the encouragement of nations outside the continent, could drive state political and security structures more closely together, potentially leading to political 'strongmen' who hold onto power and quash dissent.

- Many African security forces are likely to see significant improvements in terms of both capability and professionalism and are likely to be capable of conducting increasingly complex military operations and more general security tasks.

- Several African regional organisations, including the AU, are likely to become increasingly effective in contributing to peace and stability out to 2045.

Part 1 – Thematic

Contents

Sven Torfinn / Panos

China

Mexico

Western
Europe

Eastern
Europe

India

Iberia

United
States

Japan

Source: The Economist

[?] Africa out to 2045

Why Africa?

- Africa sits at a strategically important location, on key global trade routes.

- The African continent is estimated to hold 37% of the world's total supply of natural resources.[2] Almost 30% of global oil and gas discoveries made over the last five years have been in sub-Saharan Africa.

- By 2045, a quarter of the world's population is likely to be African.

- There are large, established African diaspora communities across the world: in 2007, for example, 486,000 people from sub-Saharan Africa were living in the UK.[3]

- Africa has a burgeoning working age population which could make it an important source of labour for investors and employers. Conversely, if young people are not provided with sufficient opportunities for work and betterment, this could result in wide-scale disaffection.

- Developments in new technologies, greater connectivity and higher educational standards mean that Africa has significant economic potential out to 2045 – both in terms of the continent's development and as a potential market for international trade and investment.

However, Africa will also face multiple challenges over the next 30 years – in particular:

- climate change;

- population growth;

- resource insecurity;

- weak or failing governance; and

- the risk of conflict.[4]

Africa is a vast continent covering more than 20% of the Earth's land surface: the Democratic Republic of Congo (DRC) alone covers an area the size of West and Central Europe. Its environment is hugely diverse – from dense jungles to vast and spreading deserts, and from mountainous country to sweeping savannahs. Some areas are linked by waterways or natural routes whilst other parts remain relatively inaccessible – even today. As a result, African countries have developed

2 Cargill, T., (2010), 'Our Common Strategic Interests: Africa's Role in the Post G8 World', page 21.

3 Styan, D., (2007), 'The Security of Africans Beyond Borders: Migration, Remittances and London's Transnational Entrepreneurs', International Affairs. Volume 83, Number 6, page 1176.

4 Development, Concepts and Doctrine Centre (DCDC) (2014), 'Global Strategic Trends – Out to 2045' (5th Edition).

culturally, socially and politically in widely differing ways.

Africa remains a continent of contrasts. Some countries are stable, highly developed and industrialised, others will experience rapid reform and development over the next few decades, whilst others are likely to remain fragile out to 2045, their economies reliant on a few commodities. We cannot validly assume that Africa will closely follow models of development seen in other parts of the world: Africa's future path will be unique.

💲 **The African economy**

Economic growth. Since 2000, the African economy has approximately doubled in size and, by 2045, is expected to have quadrupled – with some countries growing at an even faster rate (for example, Nigeria's economy could become five times larger within the timescale). Intra-African trade is also likely to be far higher than today and could be the dominant pattern of trade for a number of African countries. Additionally, far from being constrained by a lack of technology, as arguably it is today,

Africa might become a world leader in implementing and adapting a number of new and emerging technologies, ahead of other regions. Unhampered by the costs and complexity of legacy infrastructure and ageing populations (likely to burden many developed countries by 2045), some African countries could make significant leaps forward in transportation, communication, agriculture and energy over the coming decades.

African gross domestic product in US$ billion
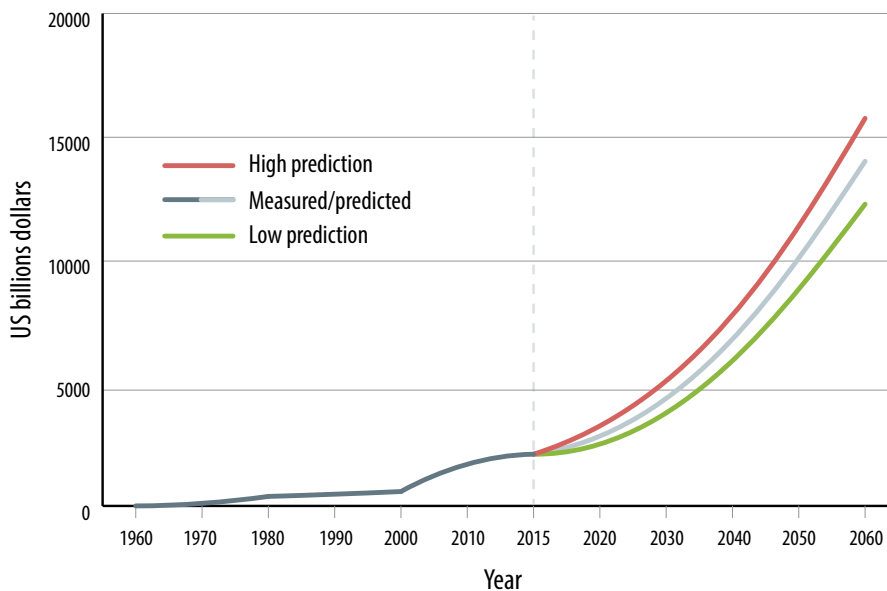
Source: Africa Development Bank and World Bank

Crowds of shoppers with street side vendors on Bankole Street, Lagos Island

Recent economic growth in Africa can be attributed to a number of drivers, including increased demand for African commodities such as hydrocarbons and minerals (particularly by Asia) at a time when many of these resources have risen in price. Despite this rapid rate of growth, however, sub-Saharan Africa's share of global gross domestic product (GDP) is likely to remain small – rising from 3% today to around 5% by 2045. Furthermore, Africa's growth drives risk as well as opportunity, with growth per capita increasing more slowly than GDP.

Africa's large and increasing population means that it has a vast market of potential consumers and a growing working age population, both of which should provide a boost to the African economy out to 2045. Intra-African trade is likely to grow significantly – although significant capital investment and regulatory reform will be required if this potential is to be realised. Out to 2045, African exporters will be faced with increasingly competitive global markets where, due to relatively low standards

of governance and education, poor infrastructure, and in many countries an unstable security environment, they will be at a comparative disadvantage. However, Africa has great untapped potential, particularly in the agricultural and service sectors, which could provide a significant economic boost if managed effectively.

Ease of doing business. Generally, it is easier to do business in Africa now than it has ever been before, and this looks set to improve further out to 2045, providing a further boost to the economy and employment. In 2015, according to the World Bank, 35 of 47 African economies implemented at least one positive regulatory reform. Benin, DRC, Côte d'Ivoire, Senegal and Togo are among the top ten improvers worldwide, albeit from a low starting point. However, there remains significant variation across the continent; for example, it takes just four days to start a business in Burundi, whereas it takes 26 days in Kenya and 135 days in Equatorial Guinea.

Intra-African trade. Trade within Africa is on the rise, but overall trade growth has not been consistent across the continent – and the total level of intra-African trade is still very low. In 1995 only 10% of African exports went to other African countries and by 2014 this figure had increased to 18%.[5] With investment in infrastructure, and if the potential of technology is realised, intra-African trade could increase significantly out to 2045.

The sea. The maritime environment is expected to be of increasing importance to Africa out to 2045. Africa has 37,000

5   World Trade Organisation (2015) 'World Trade Report 2015', available at https://www.wto. org/english/res_e/booksp_e/world_trade_ report15_e.pdf

kilometres of coastline,[6] and 90% of Africa's imports and exports are conducted by sea.[7] Thirty-eight African countries are either coastal or island states, whilst most of Africa's land-locked countries are dependent on the sea for access to trade. At present, only 1.2% of registered ships (0.9% of the world's gross tonnage) are African-owned and only 52 of Africa's ports have the ability to handle containers; however, it is likely that these levels will increase significantly as African economies develop out to 2045. As well as being vital for trade, the sea is also a key source of economic activity, with fishing playing an important part in African food security (although over-fishing, illegal fishing, pollution and the effects of climate change are all likely to reduce fish stocks significantly out to 2045).[8] In addition, sea-based minerals and hydrocarbons could become an important element of some African economies out to 2045.

Intercontinental trade. In 2015, Europe was Africa's largest trading partner and is likely to remain important out to 2045. However, Africa's trade with Asia has risen significantly over the past two decades: between 2002 and 2011, manufactured

exports from Europe to Africa fell by 10%, whilst Asia's share rose by 9%. In 2009, China overtook the United States as the country which conducts the most trade with Africa. Sino-African trade reached US $210 billion in 2013 – more than two and half times the value of United States-Africa trade (although it is likely that this is at least partly due to the reduction in the United States' demand for African oil).[9] China's demand for raw materials has been a major reason for the increase in Sino-African trade: exports from the resource-rich countries (Angola, Republic of Congo, DRC, Equatorial Guinea and South Africa) make up about 75% of total exports from sub-Saharan Africa to China.[10]

Out to 2045, African trade with other Asian countries, as well as Latin America, is also likely to increase significantly. In particular, India's trade with Africa is increasing, and has the potential to surpass that of China by 2045.

India has seen the value of its trade with Africa increase from an estimated US $1 billion in 1995 to US $75 billion in 2014, comprising around 10% of its total external trade.[11] India enjoys a number of advantages, not least its proximity to Africa and an established Indian diaspora on the African continent. Brazil – West Africa's closest neighbour – is also likely

6   See Mwencha, E. (2010), 'The Geostrategic Importance of Africa's Maritime Domain', Keynote Address to the Africa Maritime Safety and Security: Towards Economic Prosperity Conference. African Union, (2012), '2050: Africa's Integrated Maritime Strategy'. However, experts disagree on the precise length of Africa's coastline. The Deputy Chair of the African Union Commission puts the distance at 39,000 kilometres, while Africa's Integrated Maritime Strategy gives the figure as 48,152 kilometres.

7   African Union, (2015), '2050 Africa's Integrated Maritime Strategy', available at http://pages. au.int/maritime/events/1st-african-day-seas-and- oceans-au-commission-hqs-addis-ababa-kickoff- decade-african

8   According to the African Union Integrated Maritime Strategy, about 200 million Africans are dependent on fish for nutrition, and fish account for US $1 billion of annual exports.

9   Information Office of the State Council [China] (2013), 'White Paper: China-Africa Economic and Trade Cooperation', available at http://english. gov.cn/archive/white_paper/2014/08/23/ content_281474982986536.htm

10 International Monetary Fund, (2013), 'Africa's Rising Exposure to China: How Large Are Spillovers Through Trade?', available at https:// www.imf.org/external/pubs/ft/wp/2013/wp13250. pdf

11 UN, Economic Commission for Africa, (2015), 'Africa-India: Facts and Figures 2015', available at http://www.uneca.org/sites/default/files/ PublicationFiles/africaindia_ff_17oct_rev4.pdf

Trade between Africa and selected partners and intra-African trade (US$ billion), 2000-2013
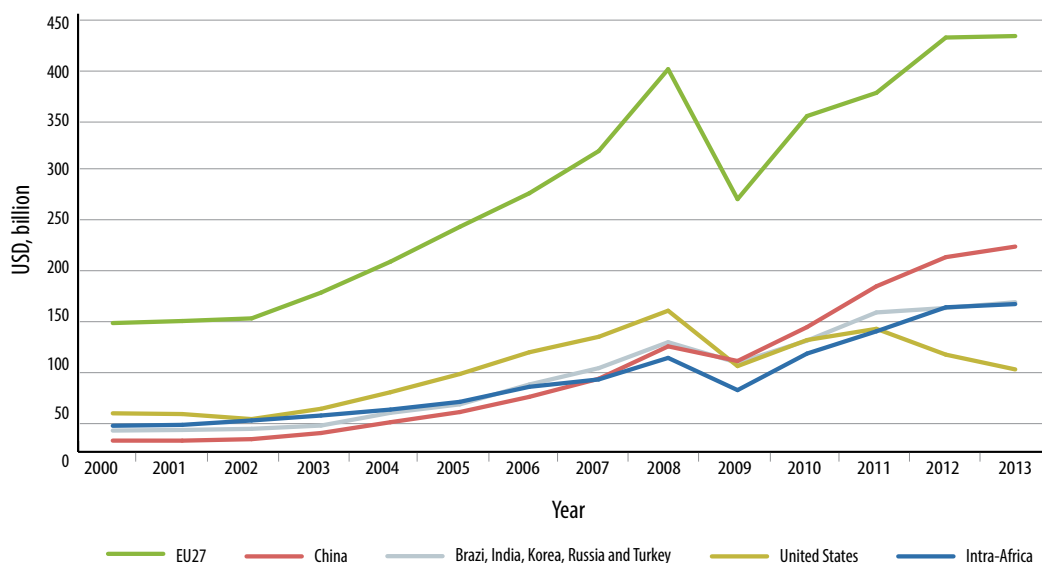
Source: Authors' calculations based on UN COMTRADE (database)

to become more significant as a trading partner over the next few decades: its trade has increased from around US $4 billion in 2000 to US $28.5 billion in 2013.[12]

Although Europe and the United States' share of sub-Saharan African trade is likely to reduce over the next 30 years, both will remain important, if not necessarily the most important, trading partners in future decades. North Africa in particular is more likely to continue to see Europe as its key trading partner. Geography and interdependence make this relationship a natural one, particularly as Europe (with its ageing population) may increasingly look to North Africa to provide young, skilled workers – assuming that automation does not negate the need for a young workforce.

The global economy. Africa is likely to become more closely linked to the global economy out to 2045, with an associated increase in the volume of foreign direct investment in the continent. Since 2000, foreign direct investment has increased almost five-fold, overtaking levels of aid (official development assistance), and this trend is likely to continue out to 2045. Whilst aid will remain important in helping fragile states and the poorest people in Africa, it is likely that some (perhaps most) donor nations will shift away from providing grants and move towards a new financing framework, bringing together domestic, international, public and private resources. This would allow greater risk sharing, as well as investment opportunities, and should lead to a reduction in the cost of borrowing.

Integration into global markets is also likely to lead to greater adoption of international standards (such as contract

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12 Muggah, R. and Thompson, N., (2015), 'What is Brazil Really Doing in Africa?', available at http://www.huffingtonpost.com/robert-muggah/what-is-brazil-really-doi_b_6413568.html

Petterik Wiggers / Panos

A Chinese member of staff at the Huajian Group's shoe factory in Ethiopia

law), a process that should improve governance in Africa out to 2045. However, whilst closer integration into the global financial system is likely to bring many benefits (including lower prices), it will also mean that Africa's economies will be more vulnerable to market fluctuations and crashes. While the continent avoided the worst of the 2008 financial crash, it is likely to be more vulnerable to such upheavals in future.[13] Additionally, closer integration into the global financial system could mean that the proceeds from crime and corruption may flow more easily out of the continent. For example, it is estimated that approximately US $50 billion is currently extracted illegally each year, a figure which may increase in the future.[14]

Inequality and growth. Whilst the African economy is expected to grow out to 2045, wealth will continue to be unevenly distributed and millions are likely to remain in extreme poverty; in some countries the proportion could even increase. Although the **proportion** of the population living in absolute poverty has declined from around 57% in 1990 to 43% in 2012, rapid population growth means that the **number** of people still living in absolute poverty has increased. This trend is likely to continue out to 2045.[15]

One reason that a growing economy has not led to a greater reduction in poverty is a lack of jobs. Much of Africa's economic growth relies on the export of primary commodities, such as minerals, oil and timber, which provides high returns but only requires a small workforce. The problem is exacerbated by the fact that the best paid jobs are often filled by

13 Africa Development Bank Group, (2009), 'Impact of the Global Financial and Economic Crisis on Africa', available at http://www.afdb. org/fileadmin/uploads/afdb/Documents/ Publications/BAD%2096%20Anglais%20%20 INTERNET%20PDF.pdf

14 UN Economic Commission for Africa, (2015), 'Illicit Financial Flows', available at http://www.uneca. org/sites/default/files/PublicationFiles/iff_main_ report_26feb_en.pdf

15 World Bank, (2016), 'Poverty in a rising Africa', available at http://www-wds.worldbank.org/ external/default/WDSContentServer/WDSP/IB/20 16/05/16/090224b084336122/2_0/Rendered/PDF/ Poverty0in0a0rising0Africa000overview0.pdf

An African woman selling grilled bananas in the local market on the road to Batoufam, Cameroon

akturer / Shutterstock.com

foreign labour. Successful diversification of economies away from dependence on primary exports should lead to more jobs being created, but so far only a few African countries (Ethiopia, Rwanda, Senegal and Uganda) have significantly diversified their economies. Over half of all African economies currently rely on fewer than five products, and seven countries depend on oil for 75% of their exports.[16] There is, however, some evidence that diversification is happening in nations previously heavily dependent on a single export, a trend which may continue out to 2045.[17]

The informal economy. At present, much of Africa's workforce is employed in the informal economy.[18] The informal economy is unregulated by the state, while the formal economy is regulated by the state and (increasingly) international institutions – although the boundary between the two economies may be blurred.[19] Sub-Saharan Africa has by far the biggest informal sector in the world,[20] with an estimated nine out of ten workers

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16 Angola, Chad, Congo, Libya, Nigeria, Sao Tome and Principe, and South Sudan. Source: African Development Bank Statistics Department, available at http://dataportal.afdb.org/; UN Statistics Division, (2015), available at http://unstats.un.org/

17 Organisation for Economic Co-operation and Development (OECD), (2015), 'African Economic Outlook 2015: Regional Development and Spatial Inclusion', available at http://www.africaneconomicoutlook.org/sites/default/files/content-pdf/AEO2015_EN.pdf

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18 International Labour Organisation, (2009), 'The informal economy in Africa: Promoting transition to formality: Challenges and strategies', available at http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_policy/documents/publication/wcms_127814.pdf

19 Lindell, I., (2010), 'Africa's informal workers: Collective agency, alliances and transnational organizing in urban Africa', available at http://www.diva-portal.org/smash/get/diva2:291569/FULLTEXT01.pdf

20 International Labour Organisation, (2009), 'The informal economy in Africa: Promoting transition to formality: Challenges and strategies', available at http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_policy/documents/publication/wcms_127814.pdf

in the labour force employed informally.[21] Although the informal economy provides vital employment and income for millions of people across Africa, such workers often have no form of social security or legal protection from unscrupulous employers. In addition, governments are unable to tax the informal economy, and this lack of revenue may lead some governments to look for alternative ways of raising income. This could include regressive mechanisms such as complicated fines and fees for licences, which could be exploited as a means of corruption.

Technology and the economy.
Developments in technology are likely to bring more people into the formal economy over the next 30 years. For example, only a small proportion (approximately 20%) of African families currently have bank accounts,[22] but the use of mobile phones for banking is likely to lead to a substantial rise in this figure by 2045. Similarly, better data on the flow of capital is likely to help governments develop more effective and wide-reaching methods of taxation in the future. Persuading citizens to buy into the concept of taxation is likely to be very difficult in some areas – particularly where demand for public services outstrips the capacity of government. However, as more people participate in the formal economy government revenues will increase, potentially driving improvements in governance as citizens demand that tax revenues are spent wisely. African states that best manage the challenge of embracing the flexibility of the informal economy, whilst providing sufficient incentives to attract companies and citizens into the formal economy,

are likely to be the most successful of the continent's economies out to 2045.

Large companies. Large (often multinational) companies are likely to be at the forefront of the development of the formal economy in Africa. Initiatives to raise standards of corporate governance, such as the Extractive Industries Transparency Initiative, are likely to drive multinational companies to adopt better regulatory practices, such as auditing accounts and formalising employment contracts. Large companies (perhaps especially oil companies) have often been closely linked to African governments – leading to claims of meddling in political affairs (for example, funding rebellions or authoritarian governments). As governance in Africa improves, however, such activities are likely to become increasingly difficult to carry out, particularly since stability and predictability are vital to the commercial interests of big business and improved governance should be in most companies' interests. It is probable, therefore, that large companies are, in the main, likely to drive better governance across Africa out to 2045.

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21 *Ibid.*

22 Dovi, E., (2008), 'Boosting Domestic Savings in Africa', Africa Renewal. Volume 22, Number 3.

Demographics, youth and migration

Population. Africa's population is likely to almost double by 2045, increasing from 1.2 billion today to around 2.3 billion – approximately a quarter of the world's population.[23] This is due to high birth rates, a decline in child mortality and increases in life expectancy. The population of some of the poorest countries is set to triple out to 2045, and the highest rates of growth will be seen in Central, East and West Africa and the Sahel. Although a youthful, working age population could provide a boost to the economies of African countries, it will also place increasing stress on inadequate resources and weak governments. Significantly, the biggest rises are likely to occur in areas that are already densely populated, such as Nigeria and the Great Lakes region. In some cases, therefore, poverty reduction will become increasingly challenging and poverty and inequality will endure as sources of grievance, tension and conflict.

Youth population. Africa's burgeoning youth population (particularly when combined with improving levels of education) could be a powerful driver of economic growth and social and political change over the next 30 years, provided governments are able to provide adequate opportunities for education and subsequent employment. However, population growth is also likely to lead to increased migration, particularly from those countries unable to offer adequate opportunities to the working age population. The educated young are particularly likely to migrate abroad, which could lead to an African 'brain drain'. By some estimates, in 2010/11 approximately one in every nine Africans with a tertiary diploma lived in Organisation for Economic Co-operation and Development (OECD) countries – a figure which may increase further out to 2045 in the absence of sufficient opportunity at home.[24] There are potentially benefits from significant migration, as educated migrants arguably benefit their parent countries by remitting earnings. Similarly, migration could provide the additional workers needed in countries with ageing populations, particularly if automation does not result in the anticipated reduction in human labour. Migration on a large scale can, however, be disruptive – especially where it is uncontrolled.

Migration. Large and persistent economic and demographic asymmetries between countries and regions are likely to remain powerful drivers for migration

23 UN Population Division, (2015), 'World Population Prospects', available at https://esa.un.org/unpd/wpp/

24 UN, Department of Economic and Social Affairs, Population Division and the OECD, (2013), 'World Migration in Figures', available at https://www.oecd.org/els/mig/World-Migration-in-Figures.pdf

Truck loaded with migrants leaving Agadez, bound for Libya or Algeria

in Africa. Estimating numbers of future migrants is problematic, since these are a product of a number of drivers, including:

- conflict;
- environmental factors;
- political or ethnic discrimination;
- unemployment;
- poverty; and
- transnational networks.

Population growth may increase both the proportion and the actual number of migrants.[25] Nevertheless, the majority of African migration is likely to remain inside

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25 UN World Population Prospects 2015 states an average of 0.4% of the population between 1985 and 2015 with considerable less migration during 1991 – 1995. The data on expected migration from 2015 out to 2045 is an average of 0.3% of population which is a slightly smaller percentage but considerably higher in real numbers. Source: https://esa.un.org/unpd/wpp/

the continent, with more developed or resource-rich African countries continuing to be major destinations for African migrants. These are likely to include a number of North African states, as well as South Africa and Gabon. Southern Africa, as well as having internal circular migration, receives migrants from Central Africa and the Horn of Africa, while North Africa is likely to continue to be a migrant destination, transit area and a source of economic migrants all at the same time.

Migration patterns are likely to increase in complexity and become increasingly mixed in character. Migration is likely to continue to Europe and North America, but also to Asia and possibly Latin America as it is forecast that there will be shortages of skilled labour in these regions by 2045. Demand for educated labour is likely to continue to be a driver for an African 'brain drain', potentially depriving the continent of much needed

skilled personnel. However, economic opportunities are also likely to attract inward migration to Africa: for example, the recent movement of well-educated but unemployed Portuguese to the continent. With the combined effects of continuing insecurity, rapid population growth and the impact of climate change, however, forced migration is likely to remain a significant challenge out to 2045, potentially leading to higher levels of internal conflict on the continent.[26]

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26 According to Office of the United Nations High Commissioner for Human Rights (UNHCR) statistics 2015, four million refugees and 11 million internally displaced people currently originate from Africa. UNHCR, (2015), 'World at War: Global Trends Forced Displacement 2014', available at http://www.unhcr.org/news/latest/2015/6/558193896/worldwide-displacement-hits-all-time-high-war-persecution-increase.html

Remittances and the African diaspora

Global connectivity. Connection to the global information network has played an important role in enabling an increase in remittances being sent home by the African diaspora. Whilst the precise size of the diaspora is difficult to calculate (particularly with second and third generation migrants who may still send remittances but may not be counted in migration figures), the United Nations (UN) Population Division estimated there were around 31 million African migrants living abroad in 2013.[27] Around half of this number remained in Africa with the rest residing mainly in Europe (8.9 million), Asia (4.6 million) and North America (2 million). In 2015, remittances were calculated to be the largest source of external capital inflows into Africa, having increased six-fold since 2000. Remittances to Africa were worth US $65.6 billion in 2015, compared with aid worth US $54.9 billion. The true level of remittances, which would include unrecorded flows, is believed to be significantly higher than these numbers. The value of remittances to Africa is expected to increase significantly in the coming decades.

Nigeria receives the largest share of remittances, while other major recipients are Senegal, Kenya, Sudan and South Africa. Remittances are particularly important for development because they may achieve greater benefit at the local level than either aid or commercial investment. There are three main reasons for this:

- remittances are less likely to be misappropriated;

- by focusing on grassroots investments, money from remittances can be absorbed more effectively, whereas large aid or investment projects risk overwhelming limited capacities as well as creating unintended dynamics; and

- remittances are often more efficiently used, as families tend to know where their money is best spent.[28]

In addition, remittances are also likely to play an increasing role in developing businesses as entrepreneurs make use of family connections, thereby creating further economic growth.

The value of remittances has been recognised by African governments, many of whom are seeking to harness it and encourage further investment.

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27 UN, Department of Economic and Social Affairs, Population Division, (2013), 'International Migration 2013'.

28 Bodomo, A., (2013), 'African Diaspora Remittances are Better than Foreign Aid Funds: Diaspora-Driven Development in the 21st Century', World Economics Journal. Volume 14, Number 4.

Nyani Quarmyne / Panos

An African American family in Nigerian national dress

For example, Ethiopia is providing incentives to its diaspora by giving them the same rights as domestic investors. Others are offering the right to vote when abroad and dual citizenship, which in some cases allows the recipients to maximise their income in the host countries, meaning that higher earners no longer have to choose between the two. There are further benefits when members of the diaspora return home (either permanently or temporarily), bringing new ideas and knowledge as well as capital. In addition to economic benefits, this can also encourage positive developments in governance and human development.

Other roles of the diaspora. As well as providing remittances, the diaspora are also likely to play socially and culturally important roles in Africa out to 2045. They may play a part in explaining cultural differences to friends and family back at home, and provide alternative perspectives on a wide range of issues. The bi-cultural understanding of members of the diaspora can also facilitate international trade; this seems to be an increasingly important factor in China, for example.

Despite the benefits of remittances, political and commercial barriers to their easy transfer may remain out to 2045. The average global cost of sending remittances has decreased recently, but remitting money to sub-Saharan Africa remains costly, at around 12% of the value sent.[29] This relatively high price encourages people to send money through informal channels. In addition, many South-South remittances (between countries in the southern hemisphere) are

29 The World Bank, (2014), 'Migration and Development Brief', Number 22.

either not permitted or are very costly.[30] Furthermore, some banks are reducing their involvement in this sector, due to concerns about money laundering and funding terrorism.[31] The impact of this emerging trend could be particularly severe in fragile African states, which are highly dependent on remittances. Nevertheless, remittances are likely to remain a vital source of income for many Africans and by 2045 Africa is likely to be much more closely integrated into the global information network; this, taken together with commercial competition, is likely to significantly reduce the cost of remittances in the long term. Remittances, therefore, look likely to play an increasingly important role in many African economies out to 2045, and those countries that embrace both the financial benefits of remittances and the flow of ideas and knowledge are likely to outperform many of the continent's more insular countries.

30 Ratha, D. and Shaw, W., (2007), World Bank Working Paper number 102, 'South-South Migration and Remittances'.

31 The World Bank, (2013), 'Migration and Development Brief, Number 21'.

Urbanisation, identity and politics

Urban population growth. Africa is forecast to have the world's fastest growing urban population throughout the next 30 years,[32] with a further 700 million urban residents by 2045 in addition to the 470 million today.[33] By 2045, at least six cities (Cairo, Kinshasa, Lagos, Dar es Salaam, Johannesburg and Luanda) are expected to have a population of over ten million and at least 12 African cities are expected to have a population of between five to ten million people. Despite this, by 2045 the vast majority of Africa's urban areas are still likely to be towns and cities with less than half a million inhabitants. Africa's rural population also continues to increase, and despite urban growth Africa will remain the least urbanised continent in the world out to 2045.

Urban population growth
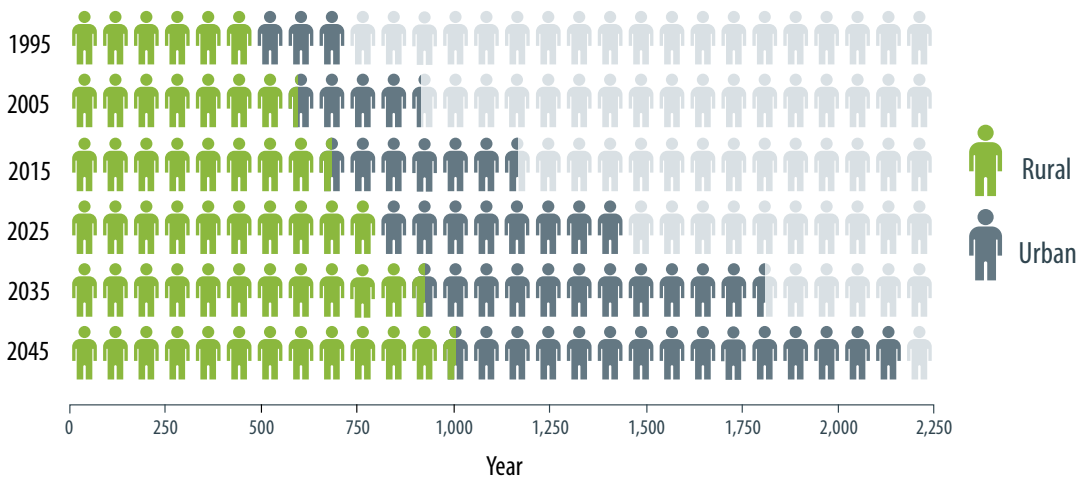
Source: UN 'World Urbanisation Prospects: 2014 revision'

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32 UN, Department of Economic and Social Affairs, Population Division. (2015), 'World Urbanisation Prospects: the 2014 Revision'.

33 High Level Panel on Fragile States. (2014), 'Ending Conflict and Building Peace in Africa: A Call to Action'.

A mobile tailor carrying his sewing machine in Nigeria

Alfredo D'Amato / Panos

Africa's rapidly growing urban population presents several risks as well as opportunities. In Europe and modern Asia, urbanisation acted as a driver for rapid economic growth. In China, urbanisation has been driven by a process of planned development and industrialisation. This is not yet replicated in most parts of Africa, where many cities have grown spontaneously as a result of rapid internal population growth and waves of inward migration in response to temporary economic opportunities – usually connected to resource extraction – without the conditions needed to sustain economic growth.[34] Elsewhere in Africa, cities have grown as a consequence of civil war, with an influx of refugees from a war-torn countryside; Luanda is an example of both phenomena.[35] This has led to high unemployment levels in urban areas. Even the relatively better-off urban African is often employed in a low-paid job with limited opportunities,[36] many are likely to be employed in the

34 Potts, Dr D., (2012), 'Whatever happened to Africa's rapid urbanization', Africa Research Institute Counterpoints, available at http://www.africaresearchinstitute.org/newsite/podcast/whatever-happened-to-africas-rapid-urbanisation-2/

35 de Oliveira, R. S., (2015), 'Magnificent and Beggar land – Angola since the civil war'.

36 Potts, Dr D., (2012), 'Whatever happened to Africa's rapid urbanisation' Africa Research Institute Counterpoints. The analysis also builds on International Labour Organisation data concerning employment shares by sector and sex for Africa, showing that the trend in industry share of employment remains low at 8.5% and the service sector at around 29%, together with data for working poor indicators showing that in 2011 as many as 62.5% of the Sub-Saharan African work force is constituted by people earning less than US $2 a day.

informal economy[37] and/or surviving on temporary or seasonal work. As a general rule, most African cities are likely to experience difficulties in providing adequate infrastructure and services for their rapidly growing populations out to 2045.[38] Africa's unplanned urban environment is likely to be difficult to govern, and could see an increasing risk of discontent, grievance and even urban insurgencies over the coming decades.

Urbanisation and economic growth.
Given that suppliers are able to connect with consumers and services more efficiently in urban areas, growth in the size of the urban population is likely to be a significant driver of African economic growth over the next three decades. Greater urbanisation is also likely to drive diversification in African economies, increasing the incomes and numbers of the African middle class out to 2045.[39] This, in turn, could lead to the expansion of civil society and an improving urban environment, resulting in a virtuous circle of development, as currently witnessed in Lagos. Successful cities are likely to attract people not only from surrounding rural areas but from entire regions and beyond. It is also likely that urban areas will see increased inward investment, particularly where they contain a

growing middle class.[40] A number of African cities, including Johannesburg, Nairobi and Lagos, are expected to see vigorous economic growth out to 2045, reflecting the quality of their business climate, infrastructure and the availability of a skilled workforce. There has also been an increase in investment in African infrastructure projects, including transport corridors, aimed at connecting urban areas, such as the Greater Ibadan-Lagos-Accra urban corridor, the Maputo Development Corridor and the Northern Corridor between East and Central Africa.

Technology and urbanisation.
Technological advances are likely to have a positive impact on African urbanisation. For example, Lagos in Nigeria has shown remarkable progress both in developing its service and manufacturing sectors and in bringing elements of the informal economy into the formal economy; this has improved the local government's ability to deliver services and infrastructure.[41] Out to 2045, data from across the city (for example, from traffic cameras, mobile phones, global positioning systems, banks and shops) could provide vast quantities of information for governments and service providers.[42] Taking into account three of the major technological advances in the coming decades – the Internet of things, big data and processing power – Lagos is well placed to become a 'smart city' (one that successfully uses information technology to make major improvements

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37 According to 'Chapter 10, The informal sector' in 'Africa at a Fork in the road' by Yale Centre for Study of Globalisation, 2015, the informal sector constitute more than 80% of the total employment in Africa and 90% of new jobs in African low-income countries.

38 70% of the population in Dar es Salaam, one of Africa's most rapidly growing cities, live in informal communities. Dar es Salaam is the national centre for industry, education and culture, inhabited by 8% of Tanzania's total population. 72% of sub-Saharan Africa's urban population live in 'slum' neighbourhoods. The extent of informal economic dynamics in such areas is naturally difficult to appreciate.

39 OECD, 'African Economic Outlook 2016: Sustainable cities and Structural Transformation'.

40 OECD, (2015), 'African Economic Outlook 2015: Regional Development and Spatial Inclusion'.

41 As Lagos has been a traditional stronghold for the political opposition, it was (until recently) suppressed by the central government in Abuja. See de Gramont, D., (2015), 'Governing Lagos: Unlocking the Politics of Reform'.

42 IBM, (2015), 'Smarter Cities Challenge'.

Director Elvis Chucks, actors Ohajunwa Nnaemeka and George 'Zoza' Davidson with a soundman on the set of a low-budget Nollywood movie production in Nigeria

Jacob Silberberg/ Panos

to its urban environment).[43] Looking forward, the Lagos example could apply to any city in Africa where efficient governance, educated people, access to energy (particularly electricity) and information are found together. Several such cities are likely to emerge in Africa out to 2045.

Urbanisation and politics. As well as driving economic growth, urbanisation is likely to influence people's identity as well as their politics out to 2045. Rural populations in Africa (as with most of the world's rural inhabitants) tend to live in groups of the same ethnicity, which some leaders have historically used as a means of galvanising supporters to gain (and keep) political power, often resulting in exclusive politics, discrimination and oppression of minority groups. In urban populations, however, people from

different ethnic and religious groups live in close proximity, which often (although not always) breaks down barriers between groups.[44] As religious and ethnic differences have become less important in many urban areas, politicians have found it increasingly difficult to retain support by simply championing one particular group, and instead have had to develop policies that are more inclusive and appeal to a broader electorate. This trend is most visible in South Africa but has arguably also been demonstrated in other countries such as Angola, where the ruling party lost support in some of its traditional strongholds in Luanda in the 2012 elections.[45] This suggests that, out to 2045, ethnic identity is going to be of less

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43 IBM, (2015), 'Smarter Cities Challenge'.

44 Green, E., (2011), 'Endogenous Ethnicity', Political Science and Political Economy Working Paper. No. 3. UN HABITAT. (2014), 'State of African Cities'.

45 de Oliveira, R. S., (2015), 'Magnificent and Beggar Land – Angola Since the Civil War'.

importance in urban areas in particular, with political parties increasingly chosen on the strength of their performance and policies rather than by ethnic allegiance.

Urbanisation, identity and culture.
Urbanisation is likely to be a major driver of change in African social and cultural norms out to 2045. For many Africans their identity is deeply influenced by their place of birth, with the majority born in villages rather than urban areas.[46] As such, the close-knit social structures of village life and the centrality of the family have been persistent features of African culture. Nevertheless, urbanisation appears to be having a noticeable impact on African culture, with urban societies tending to be more diverse and dynamic than their rural counterparts. The effect of urbanisation has manifested itself in language, where city-specific dialects (often a mixture of either English or French and a number of local dialects) are starting to emerge.

Another trend is that entertainment – an industry that has a long history of pioneering social change – is becoming an increasingly important part of the local economy in the urban areas. Furthermore, the increasing availability of information and communication technology in urban areas has led to an increase in the exchange of information and ideas – including those which challenge social norms. These changes suggest that, like the rest of the world, urban societies in Africa out to 2045 are likely to be considerably more pluralistic than traditional rural societies.[47] At the same time, due to the ever-increasing interconnectivity within Africa, changes in urban communities are likely to have a significant effect on rural Africa over the coming decades.

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46 Iliffe, J., (1994), 'Africans - The History of a Continent'.

47 *Op. Cit.,* UN HABITAT points at urban youth as agents of change. Young people comprise 40% of the populations of many West African cities.

Gender

Between 2015 and 2045 it is estimated that the number of African women and girls will increase from 583 million to 1.09 billion (a little under half of the population), with 650 million female children expected to be born during this period. These women will grow up in a more interconnected world and have better access to education and information than their predecessors. While gender inequality is expected to remain an issue, particularly in conservative rural areas, improvements can be expected, with many of the new generation of women likely to expect a considerably higher degree of self-determination. Morocco, Algeria and Tunisia already have parliamentary quotas for women, and women form more than 40% of parliamentarians in Namibia, Rwanda, Senegal and South Africa.[48]

Expected population growth in Africa

Male
- 2015
- 2045

Female
- 2015
- 2045

Age group: 100+, 90-99, 80-89, 70-79, 60-69, 50-59, 40-49, 30-39, 20-29, 10-19, 0-9

Millions of people
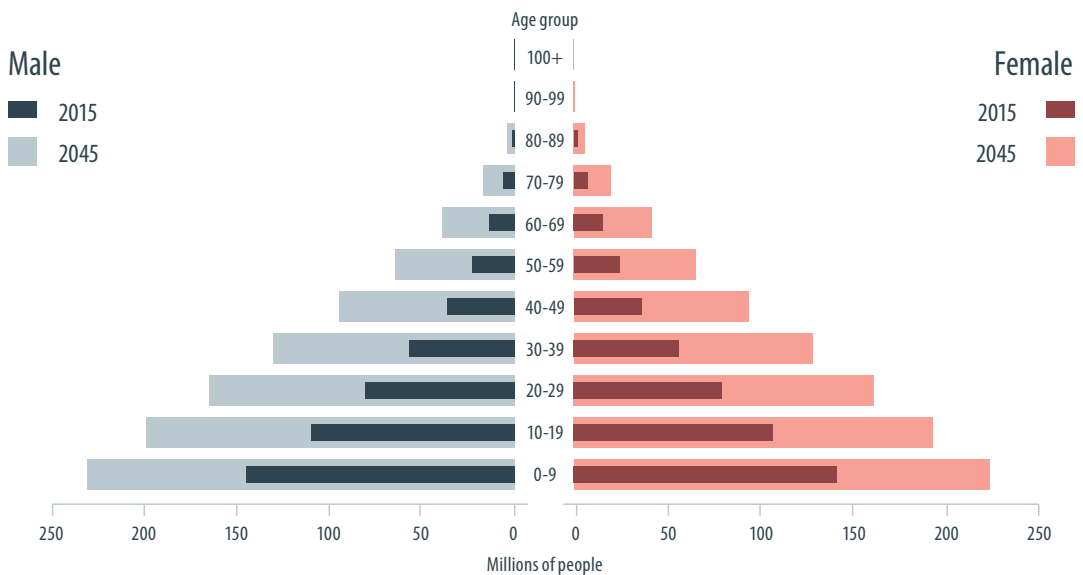
Source: World Bank

48   University of Stockholm. (2015), 'Quota Project'.

Nataly Reinch / Shutterstock.com

A meeting of 'Women without Husbands'; a group who have been ostracised from society or who have lost their husbands and only have themselves as a group to look after each other in Meru, Kenya

Joseph Sohm / Shutterstock.com

Increasing political representation, in line with trends across most of the world, suggests that empowerment for women is likely to increase out to 2045. As a general observed trend, as women become more empowered, the risk of violence towards women tends to decrease, although actual causality has not been established.[49] Looking forward, it is also possible that the risk of a disenfranchised youth population turning to violence could be mitigated by the increasing empowerment and influence of women and girls at the community level.

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49 McAslan Fraser, E., (2012), 'Economic Empowerment and Violence Against Women and Girls'.
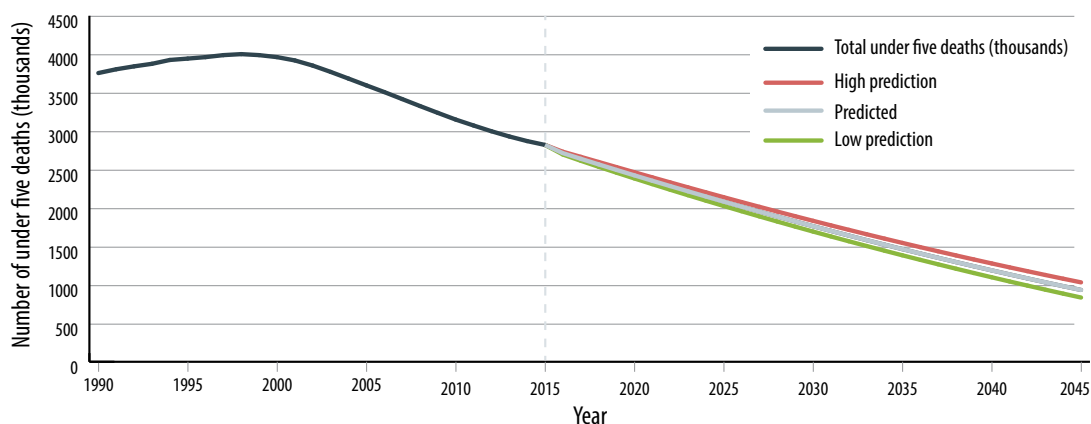
Health

Although by 2045 health care provision for most Africans is unlikely to meet the standards found in many OECD countries today, access to and the quality of medical services are likely to improve for most. Rising standards of education, government investment and technological advances are all likely to contribute to this improvement. In particular, there have been significant advances in tackling serious diseases such as malaria and HIV/AIDS, and further advances are expected out to 2045. The mortality rate for African children under the age of five reduced significantly between 1990 and 2013 (with the steepest improvements in North Africa), and by 2045 is forecast to reduce further from around 2.7 million to around 1 million annually, despite a growing population (see graph below).

Traditional health issues are likely to remain a challenge and attitudes and beliefs will remain a factor in addressing them. In particular, although public health facilities, including good sanitation, are likely to improve during the time-scale, inequality of access to quality medical services is likely to remain an issue out to 2045. For example, currently 42% of the urban population in sub-Saharan Africa has access to improved sanitation but this is often not the case in unplanned urban areas.

Number of deaths of African children under five years old

Source: World Health Organisation

Doctor from UNICEF mission giving tetanus vaccination in the Democratic Republic of Congo

Valeriya Anufriyeva / Shutterstock.com

On current trends, the number and size of unplanned urban areas are likely to increase out to 2045, resulting in more people without access to adequate sanitation and hence an increased risk of the spread of communicable diseases such as malaria.[50] Climate change, through rising temperatures and increases in flooding, is also likely to lead to longer transmission seasons and increase the range of malaria in some parts of Africa.[51] This could, for example, threaten highland areas which are currently unaffected, such as those in Kenya, Zimbabwe and Ethiopia.

The risk of epidemics, therefore, looks likely to endure over the coming decade at least, and globalisation increases the risk of these becoming global pandemics. Whether advances in health care and surveillance can keep pace with the increasing risk of pandemics is unclear. Even with more effective public health measures and the development of new vaccines and medicines, it is likely that Africa will still be afflicted by a number of

50 UN HABITAT, (2014), 'State of African Cities', Chapter 1.2, Cities at Risk, available at http://unhabitat.org/books/state-of-african-cities-2014-re-imagining-sustainable-urban-transitions/state-of-african-cities-2014-re-imagining-sustainable-urban-transitions/

51 World Health Organization (WHO) report, (2003) 'Climate change and human health – risks and responses', Chapter 6 'Climate Change and Infectious Diseases' available at http://www.who.int/globalchange/publications/cchhbook/en/ and University of Liverpool (2012) 'Quantifying Weather and Climate Impacts on Health in Developing Countries: The impact of climate change on malaria distribution in Africa: a multi-model approach', available at https://www.liverpool.ac.uk/media/livacuk/qweci/QWeCI,presentation,Cyril,Caminade.pdf

life-threatening infectious diseases out to 2045. Additionally, non-communicable diseases (such as cancer, diabetes and dementia) are likely to cause the majority of health-related deaths in Africa by 2025-30.[52] Nevertheless, the majority of Africans are likely to see significant improvements in health care out to 2045.

52 Institute for Security Studies (ISS), (2011), 'African Futures 2050', page 25 and WHO, 'Projections of Mortality and Burden Disease'.

🏫 Education

Education is likely to be increasingly regarded as an important part of human development across the African region out to 2045. Educating Africa's people and increasing the opportunities available to them will be crucial to future economic development and reducing corruption, as well as to ensuring improvements in health and governance. States which invest in education are likely to see improvements in living standards, life expectancy and stability. Conversely, states that do not make the necessary investments in their educational systems are likely to struggle with weak or ineffective governance and internal instability, which may further reduce opportunities for the populations of those countries out to 2045.

Levels of education. In many African states the quality of education is currently below minimum competency thresholds. Access to basic education provision is low and/or uneven and many children do not complete a full course of primary education.[53] Worldwide, nearly two thirds of all primary aged children who do not attend school live in Africa.[54] Of those children that do attend primary school, many do not achieve minimum literacy and numeracy standards. There is a significant divide between the standard of, and access to, education received by children in rural and urban environments, with children in rural locations at a disadvantage to their urban peers.[55] However, despite a low baseline position there are positive trends which suggest that basic levels of literacy and numeracy in many African states may continue to increase over the next 30 years. For example, although universal primary education completion rates are low, the number of children enrolling in primary education has been increasing. Between 1990 and 2015, enrolment rates more than doubled across the region.[56] In sub-Saharan Africa, 15 countries abolished school fees between 2000 and 2015, making education more accessible. In addition, although gender

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53 No African country achieved the millennium development goal of universal primary education – where all children have completed a full course of primary schooling. State of Education in Africa Report, (2015), 'A report card on the progress, opportunities and challenges confronting the African education sector', available at http://www. aaionline.org/wp-content/uploads/2015/09/AAI-SOE-report-2015-final.pdf

54 *Ibid.*

55 Centre for Universal Education at Brookings Africa learning barometer of sub-Saharan Africa, available at http://www.brookings.edu/research/ interactives/africa-learning-barometer

56 According to UNESCO between 1990 and 2012, the number of children enrolled in primary school in Africa increased from 62 million to 149 million. State of Education in Africa Report, (2015), 'A report card on the progress, opportunities and challenges confronting the African education sector', available at http://www.aaionline.org/ wp-content/uploads/2015/09/AAI-SOE-report-2015-final.pdf

disparity remains, gender gaps at the primary education level in Africa are narrowing, and there have also been positive developments in secondary and tertiary education ratios in some regions. Between 1999 and 2012 participation in secondary school education within sub-Saharan Africa increased more than in any other global region and enrolment in tertiary education doubled for many African universities in the decade from 2000 to 2010.[57]

Looking forward, basic literacy is likely to continue to increase out to 2045 as standards of, and access to, primary education improve across the continent. Education is likely to be a key priority for most African states and greater investment by many African governments may lead to improvements in their educational infrastructure. This is likely to increase opportunities for future generations of the African population. Out to 2045, increased access to technology (including access to computers and the Internet) is likely to improve access to education, particularly among the poor and the rural population. At the same time, social attitudes and employment models could change over the next 30 years, which would also improve access to education. For example, changing attitudes about the role of women and children in subsistence agriculture may allow more African children, in particular girls and those in poor rural households, to attend school. Similarly, changing attitudes about family size may enable parents to devote more resource to each child's

education, as family sizes become smaller in many African countries.

As well as anticipated improvements in basic education, there should be improvements in secondary and tertiary education across Africa out to 2045, albeit also starting from a low baseline.[58] Economic diversification, requiring a greater number of well-educated workers with the requisite technological and other specialist skills, could be just one of a number of significant drivers encouraging the development of tertiary education in some African countries out to 2045. However, on current trends even the more developed African education systems will require significant investment and effort to improve their provision of tertiary education. Within this context, it is likely that the role of international aid and development partners, new as well as existing, is likely to remain important out to 2045.

Attitudes towards education. African educational provision will not only be dependent on greater levels of investment but will also be influenced by continuing issues of social inequality, models of employment and traditional attitudes towards education which prevent many children and adults from receiving an education.[59] To improve educational opportunities across the continent, addressing these issues and attitudes will be crucial. However, there could be a counter-educational movement in some sectors of African society that seek to maintain what are

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57 State of Education in Africa Report, (2015), 'A report card on the progress, opportunities and challenges confronting the African education sector', available at http://www.aaionline.org/wp-content/uploads/2015/09/AAI-SOE-report-2015-final.pdf

58 The UNESCO Institute for Statistics identifies sub-Saharan Africa as having the least developed tertiary educational system in the world. See UNESCO Institute for Statistics, (2010), UIS Fact Sheet Number 10, 'Trends in Tertiary Education: sub-Saharan Africa'.

59 Mwega, Francis M., (2009), 'Improved Education infrastructure – A case study of Aid Effectiveness'.

African woman studying on her laptop

seen as 'traditional' African values and social norms. For example, some groups may seek to maintain traditional models of agricultural employment, preserving the role of women and children, and hence hindering access to education. In other cases, extremist groups, citing the need to maintain traditional customs, may continue to condemn and attack minority groups seeking improved access to education.[60] However, in common with most regions of the world, Africans place great store on education, with families willing to make huge sacrifices to provide schooling for their children. This is likely to be a major factor in ensuring a

continuing improvement in the level of education which most Africans receive out to 2045.

The role of technology. Africa is becoming increasingly integrated into the global information network and by 2045 nearly everyone in Africa is likely to have access to the Internet. This increased access to information technology is likely to improve both access to, and the demand for, education over the next 30 years. Increased integration and use of technology could allow Africa to 'leapfrog' many aspects of traditional classroom-based educational provision. For example, the opportunity to participate in courses delivered over the Internet, such as Massive Open Online Courses, demonstrates just one way in which technology could play a major role in

60 UNHCR, (2015), 'Background Paper on Attacks against Girls Seeking to Access Education', available at http://www.ohchr.org/Documents/HRBodies/CEDAW/Report_attacks_on_girls_Feb2015.pdf

African children reading and writing outside their school in Bamako, Mali

increasing access to education out to 2045. Digital learning, from subject-specific applications in primary schools to online degree courses, is already playing an important part in educating African children, and out to 2045 looks set to play an ever-increasing role in their educational provision.[61]

The rise of alternative educational providers. The increases in access to technology could encourage more diverse models of educational provision as an alternative to state educational provision, as Africa's access to the e-learning market increases. In addition, there are indications that multinational companies are investing in African technical colleges and academies to develop their own products and technologies and increase the pool of available employees on the African continent – a trend which may increase out to 2045. IBM, for instance, has invested around US $60 million in African universities and businesses to provide a greater pool of potential employees with the necessary information technology skills to support their activities.[62] Other companies may follow suit over time, as the opportunities offered by economic diversification and the attraction of Africa as a marketplace for consumer products increases.

Implications for governance levels. Across Africa, improvements in education could represent a significant positive trend for governance. As people benefit from improved standards of basic education, their outlook and

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61 Ambient Insight, (2013), 'The Africa Market for Self-paced eLearning Products and Services: 2011-2016 Forecast and Analysis', available at http://www.ambientinsight.com/Resources/Documents/AmbientInsight-2011-2016-Africa-SelfPaced-eLearning-Market-Abstract.pdf

62 It is estimated that the IBM African University will have 35,000 students by 2017. See www.prnewswire.com/news-releases/ibm-rolls-out-african-skills-initiative-300119067.html

attitudes to governance and politics in general are likely to change. As more people attain higher standards of education, the demand for access to better opportunities, in terms of both employment and general standards of living, will probably increase. A more literate society with greater access to information is likely to demand improvements in the quality of state governance, as well as provide a larger workforce with the skills necessary to run state institutions effectively and efficiently. It is also possible that improved standards of education may lead to declining levels of corruption. The Ibrahim Index of African Governance indicates that there is a correlation between levels of education and reducing corruption, although the causal factors remain unclear.[63]

Africa is likely to follow its own educational path out to 2045. All regions of Africa are likely to experience increased literacy and numeracy rates out to 2045, although issues of unequal access to education will persist, and higher fertility rates and population growth may mean that Central African literacy rates in particular could increase more slowly than other parts of the continent. However, rapid improvements in access to technology, greater awareness of the importance of (and hence the demand for) education, and recognition of the burgeoning market opportunity that Africa represents mean that patterns of educational provision in Africa will evolve. The pathway that Africa will take to develop its educational systems is likely to be unique to the continent, and will involve a complex range of drivers, motivations and stakeholders, both from the international community and across Africa.

63 ISS, (2011), 'African Futures 2050', available at https://www.issafrica.org/publications/monographs/african-futures-2050

🏠 The African middle class

Consumer class

Defining the consumer class in sub-Saharan Africa is extremely difficult. The standard international measure (those able to spend US $10 per day) indicates an extremely small consumer class; however, earnings above US $2 per day are sufficient to engage in economic activities beyond those needed for survival on the continent. The African consumer class is likely to have significantly less buying power on the global stage than individual consumers in Asia (for example), but with a rapidly growing population, the demand for basic goods and services is likely to increase rapidly out to 2045.
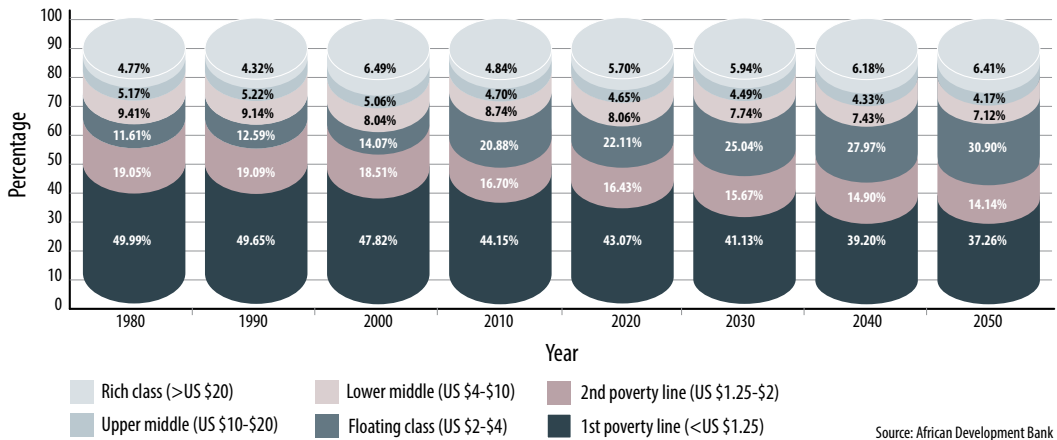
The middle class and wealth. A growing economy, improving levels of education and increasing urbanisation all suggest that the African middle class will grow out to 2045. The conventional classification of the middle class in Africa is those earning between US $4 and US $20 a day. On this measure, the middle class comprised approximately 14% of the population in 1980, reducing to a little over 13% by 2010. Those who fall just outside this bracket, earning between US $2 and US $4 a day, are able to participate in economic and political activities beyond those needed for survival, but remain extremely vulnerable to economic shocks.

Although the African middle class is likely to be poorer than those in other parts of the world, they are nevertheless likely to have small but growing disposable incomes out to 2045. As their incomes grow, they will seek to make the most of their money, driving tightly focused increases in consumption centred on African requirements; this is likely to create a virtuous spiral of increasing economic growth and development.

Whilst the African middle class is likely to grow, the effects of rising incomes are difficult to forecast as the African context is very different to that experienced by other developing countries, such as India or Vietnam. As the African model is likely to be unique, outside actors will struggle to correctly gauge the size and characteristics of the African middle class. For example, Nestlé, one of the world's largest food and drinks companies, announced in 2015 that it was cutting its workforce in Africa, having overestimated the size of the middle class and the rate

Changes in economic classes

Chart: Percentage vs Year (1980–2050)

Class	1980	1990	2000	2010	2020	2030	2040	2050
Rich class (>US $20)	4.77%	4.32%	6.49%	4.84%	5.70%	5.94%	6.18%	6.41%
Upper middle (US $10–$20)	5.17%	5.22%	5.06%	4.70%	4.65%	4.49%	4.33%	4.17%
Lower middle (US $4–$10)	9.41%	9.14%	8.04%	8.74%	8.06%	7.74%	7.43%	7.12%
Floating class (US $2–$4)	11.61%	12.59%	14.07%	20.88%	22.11%	25.04%	27.97%	30.90%
2nd poverty line (US $1.25–$2)	19.05%	19.09%	18.51%	16.70%	16.43%	15.67%	14.90%	14.14%
1st poverty line (<US $1.25)	49.99%	49.65%	47.82%	44.15%	43.07%	41.13%	39.20%	37.26%

Legend:
Rich class (>US $20) · Lower middle (US $4–$10) · 2nd poverty line (US $1.25–$2)
Upper middle (US $10–$20) · Floating class (US $2–$4) · 1st poverty line (<US $1.25)

Source: African Development Bank

at which it was growing. Nevertheless, the ability to afford an increasing array of goods, and to engage in a broader range of activities, supported by unprecedented access to information, is likely to increase the aspirations of each new generation going forward.

The middle class and political development. Whilst the African middle class is likely to follow a distinctly African model of economic growth, it will probably follow a more conventional pattern of political development. In common with middle classes across the world, the African middle class is likely to demand higher standards of governance, and probably greater accountability and representation. Those elites that fail to accommodate the middle class will almost certainly come under pressure, including civil protests or insurgencies. The middle class in Africa is therefore likely to play a critical role in driving improvements in governance out to 2045. In some cases, however, some members of the middle class may prefer to support the *status quo* if their government provides them with sufficient stability and prosperity, potentially stalling development.

🏛 Governance and change

> **Definition of governance**
>
> All processes of governing, whether undertaken by a government, market or network, whether over a family, tribe, formal or informal organization or territory and whether through laws, norms, power or language.[64]

Africa is a vast continent with huge geographic and cultural differences. It is therefore unsurprising that no one blueprint can describe current or future governance structures in Africa. However, democracy has continued to advance, albeit falteringly, over the last 30 years across most of Africa. This has been demonstrated by the increasing number of countries setting term limits for their presidents, and experiencing peaceful transitions following elections. Despite many challenges, including growing inequality, a rapidly growing population and limited resources, it seems probable that this trend will continue, due to improvements in educational standards, better access to information, growing prosperity and urbanisation, among other factors. Nevertheless, the path to improvements in governance will not be smooth and progress is likely to be disjointed, with setbacks along the way. In particular, greater democracy is likely to lead to populist measures which may challenge Western values, as elites feel forced to bend to majority 'conservative' rural values (with which many in the elites also agree), or indeed those of radical religion, to ensure victory.

The capacity of the state is likely to strengthen in African countries out to 2045. In the past, most African governments played a limited role in the lives of the majority of their populations, due to a lack of capacity both in terms of a trained workforce (for example, DRC at independence had only three African managers in its entire civil service and only 30 graduates),[65] and funds to support their activities. Internal strife across much of the continent further weakened many states' capacity to act, with many having only limited control beyond the capital. Whilst this description remains accurate for a few countries (for example,

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64 Bevir, M., (2013), 'Governance: A very short introduction'.

65 BBC World Service, 'The Story of Africa Independence. Case Study: Congo', available at http://www.bbc.co.uk/worldservice/africa/features/storyofafrica/index.shtml.

GDP (at purchasing power parity) of Africa and major global powers
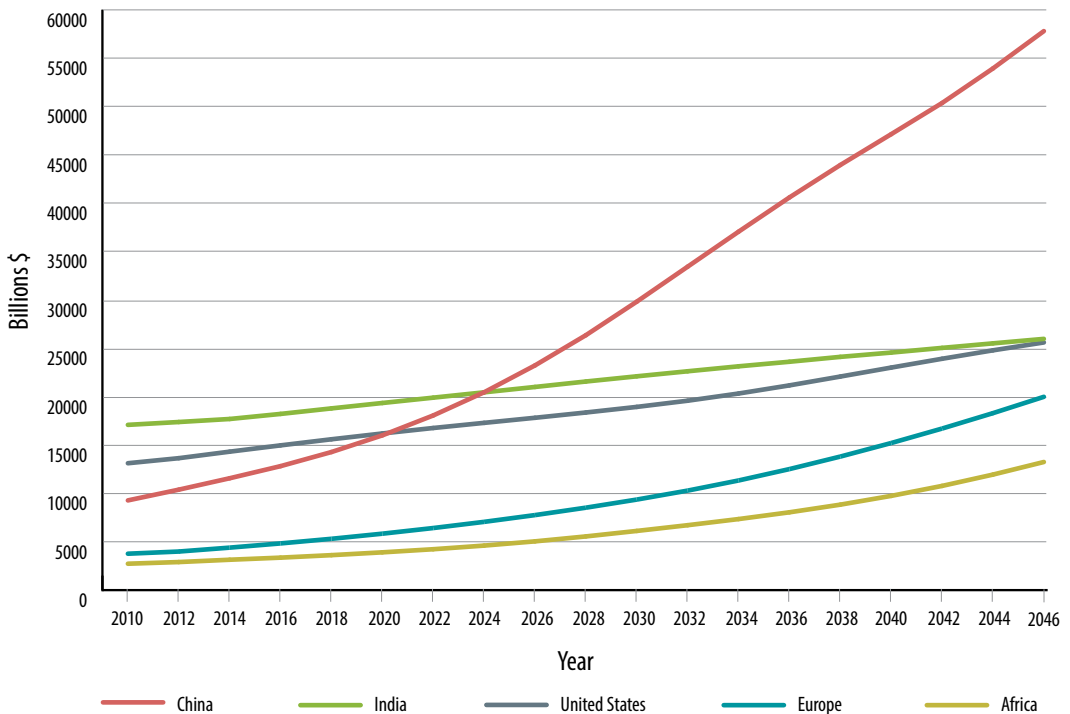
Source: IFs base case version 6.37

Somalia), most governments are exerting increasing authority over their territories, bringing greater levels of development, albeit slowly, and this will continue over the next 30 years. This is partly due to economic growth (see graph above), which has provided greater government revenue (for example, Kenya's GDP has more than doubled since 2006, whilst government revenue has also increased as a percentage of that GDP),[66] and is perhaps also partly due to a new emphasis on the development of physical and technological infrastructure, connecting different areas of African countries in new ways. As an example, the Tanzanian Government has recently built tarmac roads connecting the isolated west to the rest of the country. It should be noted, however, that increased engagement by the state with regions that have enjoyed relative autonomy could result in conflict, as entrenched interests resist the central state – sometimes resulting in secessionist movements.[67] This is likely to remain an issue in parts of Central Africa, the Horn of Africa and the Sahel for at least the next 10-20 years.
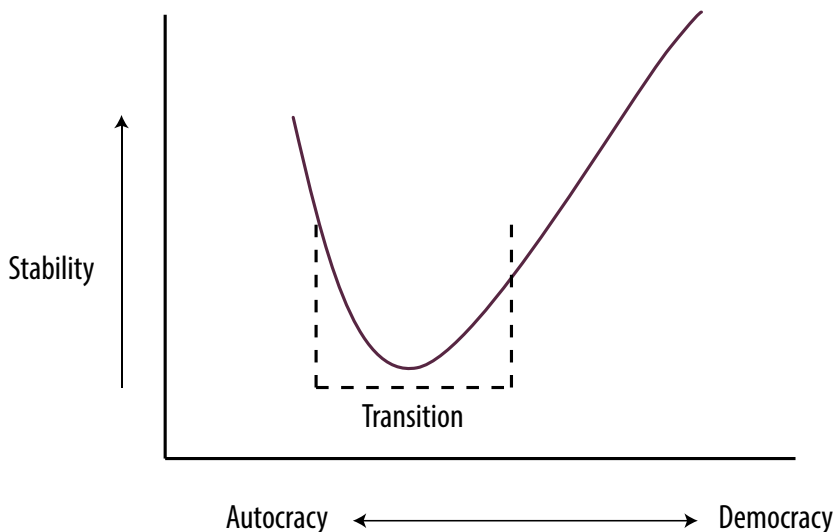
66 Trading Economics, (2016), Kenya GDP, available at www.tradingeconomics.com/kenya/gdp

67 Dertwinkel, T., (2009), 'Disaggregated Perspectives on Civil War and Ethnic Conflict: Prospects of an Emerging Research Agenda', Journal on Ethnopolitics and Minority Issues in Europe. Volume 8, Number 1.

Demand for change. The demand for change, from autocratic and corrupt systems of government to more democratic and/or fairer systems, is likely to increase across most of Africa. States will experience changes and tensions as they adapt to suit the increasingly demanding needs of their citizens. Until recently, the importance of the state authority has varied from region to region, depending on the influence, and therefore control, that it exerts over the general population. However, in most countries the state apparatus is now growing, and is recognised as being central to the running of the country. As a result the authority of the state is now only opposed in a few relatively autonomous areas, which were able to ignore the state in previous times. Instead, discussion now lies in whether the state should be based on a centralised or decentralised model; for example, there are growing arguments in Ghana that regional entitlements should take some discretion away from central national distribution.

Out to 2045 economic growth will contribute to the development and wealth of a growing middle class, which will want its views to be taken into account (as has happened throughout the world). Those elites that fail to allow this will find themselves under pressure from an educated middle class, which could lead to civil protests or insurgencies. At the same time the majority of the population, including the poor, will become increasingly well-informed through greater access to education and (social) media, and the latter could provide them with a more coherent voice, acting as a key driver for improvements in governance standards. One result is likely to be a dilution of external influence and an assertion of African self-determination, although offset by an increasing requirement to abide by international norms – particularly as Africa becomes more integrated into the global economy. Already, whilst a number of African democracies are fragile, the underlying trends of socio-economic development indicate that democracy is taking root.

Stability *versus* autocracy/democracy transition

President Robert Mugabe, leader of Zimbabwe African National Union, has served Zimbabwe since 1987

Tsvangirayi Mukwazhi / AP/Press Association Images

Whilst elections are often a major source of instability in the early years of a transition to democracy, over time they appear to create a rising expectation that they should be free, fair and held routinely. It therefore appears likely that many African countries will achieve genuinely democratic systems by 2045.

Implementing change. Out to 2045 astute leaderships will seek to balance the demands of the general population, but others will try to clamp down and stifle dissent, eventually leading to rebellion and in some cases revolution, as occurred in Burkina Faso in 2014. As a result, implementing change across the continent will be neither simple nor standard – nor necessarily peaceful. It is likely that a range of different ideologies will be used, commonly with the primary purpose of maintaining power by the current leadership (for example, by copying the Chinese model of economic development in combination with authoritarian government). Some will be successful in at least postponing their removal from power, whilst others will not. Similarly, some will act as benevolent despots, placing their countries well for further economic progress and the development of government revenues, which may allow a move towards genuine democracy in the future. It should, however, be noted that the move from autocratic government to a more democratic system will inevitably see a reduction in stability during the transition period before it improves again. Anecdotal evidence indicates that, although a number of African leaders have succeeded in adjusting electoral systems so that they can retain power, this ultimately weakens their position and increases the likelihood that they will be removed from power (with or without outside involvement).

Democracy and its risks. The link between democracy and quality of life has been long established but democracy can bring its own risks, such as division and polarisation within societies. Similarly, the growth of democracy, in tandem with socio-economic development, may lead to the much greater development of a national identity in African countries, which until recently appeared to be focused primarily on support for national football teams. Out to 2045, an increasing number of people, particularly in the urban population, are likely to define themselves more by their nationality than their ethnicity. Whilst this may create greater societal cohesion and reduce the likelihood of civil conflict, it may also be exploited by unscrupulous politicians, seeking to use it to gain support by directing nationalist sentiment against neighbours or foreign workers. This could lead to an increased risk of interstate warfare – although the continued development of the African Union (AU) and regional organisations should reduce that threat considerably.

Speed of change. The political and socio-economic changes described above are happening over a very short time frame when compared to the adoption of liberal democracy in Europe. The transition to democracy in Europe was marked by considerable violence and it is highly likely that such transitions will similarly cause considerable stresses in Africa, both within individual countries and with neighbours. Such political transitions will require skilful leadership if conflict is to be avoided. If conflict does occur, strong effective leadership will be required to prevent a country's collapse into chaos. Conversely, unscrupulous leaders may seek to exploit instability to shore up their position as 'strongmen' – usurping democratic principles in the name of security.

WOLF AVNI / Shutterstock.com

Community demonstrates at Himeville Court as suspects in the macabre murder of Dan Knight are arraigned in Kwazulu Natal, South Africa

A judge hears the testimonies of a legal case in a local court of law in Rumbek, Sudan

Sven Torfinn / Panos

The legal system. Although the majority of countries in Africa have formal state legal systems in place, some are outdated, most are not funded properly, and in many cases corruption prevents either easy access or results, as decisions can be delayed almost indefinitely. However, the same factors that drive a move towards democracy and better governance are likely to lead to the development of more effective legal systems out to 2045. The rule of law is likely to become increasingly important in many countries, where a growing middle class is more likely to be engaged both politically and in causes that seek to protect their increasing economic interests. As levels of education and the size of the middle class increases, demands for a fairer and more transparent system

of justice can be expected to grow.[68] Similarly, international organisations and multinational companies are likely to call for improvements in legal systems (particularly commercial law regimes) to protect the commercial interests of both African and foreign companies.[69] All of these factors are likely to lead to more effective and professional judicial and legal systems in African countries over the next 30 years.

Regional differences. It is likely that emerging regional differences will become more obvious in the coming years but reduce towards 2045 if the

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68 See US National Intelligence Council. (2012), 'Global Trends 2030: Alternative Worlds'. If the global middle class expands as many experts project, demand for rule of law and government accountability is likely to increase.

69   Balthasar, D. and Barrios, C., (2014), 'Africa: the EU-US Security-Economy Nexus'.

Sahel, the Horn of Africa and Central Africa begin to catch up with the rest of the continent. Already Southern, and more recently East, African countries are collectively showing signs of much greater progress in governance than the other regions. For example, Kenya's governance rating rose by 7.4% between 2010 and 2015, according to the Ibrahim Index of African Governance.[70] In contrast, the Horn of Africa, Central Africa and the Sahel remain at the bottom of the Index, and for the most part their generally authoritarian governments currently have only limited control of their hinterlands. However, state authority is developing, and there are some signs that the general population is increasingly accepting of state institutions.

Only West and North Africa show mixed results, although in the case of the latter, which generally has a higher level of development than sub-Saharan Africa, this is mainly due to the aftermath of the 'Arab Spring', and the failure of elites in some countries to give any influence/power to the general population. It is possible that these disparities could reduce radically towards 2045 if the least-developed regions reach a level of stability which allows progress to be made. For example, although still fragile, the situation in DRC is considerably better than it was 20 years ago. There are no rebel groups today, internal or external, which are a genuine threat to the DRC government. Whereas the United Nations (UN), when first deployed in 2003, covered half of the country, it is now mainly deployed within 30 kilometres of DRC's eastern border, due to the better security situation. If DRC's present rate of improvement continues, this could enable it to reduce the gap between its levels of governance and those of East and Southern Africa.

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70   Mo Ibrahim Foundation, (2015), '2015 Ibrahim Index of African Governance Executive Summary', available at http://static.moibrahimfoundation.org/u/2015/11/03174252/2015-Executive-Summary.pdf?_ga=1.255227468.597450736.1460987274

Transportation infrastructure

Whilst better in the north than the south of the continent, transportation infrastructure throughout Africa is poor in comparison with that of the rest of the world. This is reflected by the poor levels of trade between countries in Africa, which comprises only 12% of the total external trade carried out by African countries.[71] This compares with over 60% of EU countries' external trade being with their fellow members.[72] The World Bank, in common with other economists, believes that poor infrastructure acts as a barrier to greater economic growth on the continent. According to its 2013 study, a continental infrastructure similar to that of Mauritius would lead to extra growth of over 2% per annum, and that of South Korea to an extra 2.6% per annum.[73] There are many reasons for the current poor infrastructure, including lack of government revenue, low population density, low rates of urbanisation (despite rapid urban growth) and the presence of a large number of landlocked countries with small economies compared to other parts of the world. These have combined to make infrastructure uneconomic for all but the continent's main cities and major resource extraction projects, and hence only limited government funding has been made available for infrastructure development in the past.

Infrastructure spending. Whilst the investment in infrastructure may be low in comparison with the rest of the world, it is clearly rising fast compared with previous decades in many parts of Africa. For example, Uganda plans to invest 8% or more of GDP in transport infrastructure between 2015 and 2020, compared to approximately 3% in the previous ten years.[74] The drivers behind this are numerous but stem from improving security and stability in most of the continent. This has allowed revenues to grow to the level where governments can invest in longer-term programmes, which by their nature require good infrastructure. Furthermore, international actors have spotted the opportunity to develop increasing numbers of resource projects, such as mines and oil wells, on the continent; these require heavy infrastructure, which these actors also then develop, further increasing government revenues. For example, the

71 George, Dr E., Ecobank, (2013), 'Africa's external and intra-regional trade', available at http://www2.ecobank.com/upload/20131007100538337894G3jtuE82AC.pdf

72 Eurostat, (2014), 'Intra-EU trade in goods – recent trends', available at http://ec.europa.eu/eurostat/statistics-explained/index.php/Intra-EU_trade_in_goods_-_recent_trends

73 The World Bank. (2013), 'Fact Sheet: Infrastructure in Sub-Saharan Africa'.

74 Coronel, A., International Monetary Fund, (2015) 'IMF Survey: Uganda's Ambitious Infrastructure Plan Set to Boost Economy', available at http://www.imf.org/external/pubs/ft/survey/so/2015/car063015a.htm

Chinese project to rebuild the Benguela railway in Angola, which will have an annual capacity of 20 million tons of cargo when fully operational,[75] was intended to improve access to Katanga in DRC, which has some of the largest mineral deposits in the world. International aid, particularly that provided by countries with an economic focus on Africa, is also increasingly investing in infrastructure projects. Finally, there has been a rapid development of mobile telecommunications across the continent. This has vastly improved communication links within countries and regions, and has led to a much increased demand for better transport infrastructure and trade at the local level, as well as being a factor in population movement.

It is therefore highly likely that stable countries in Africa, particularly those transitioning to more diverse economic bases, will invest an increasingly high percentage of their GDP in infrastructure. This is currently being demonstrated in East Africa, where the governments of Kenya, Uganda and Rwanda have developed a plan to redevelop the railway system to improve freight movement. The intention is for much of this work to be funded by government borrowing, ultimately against revenue expected from oil development. For example, President Museveni of Uganda has explicitly stated that oil revenue, which he recognises as finite, should fund the development of a robust infrastructure, which will allow the economy to develop, diversify and spread across the country.[76] This is further

supported by the AU's Programme for Infrastructure Development in Africa (PIDA), which estimates that it will require a total spend of potentially US $360 billion by 2040, including a US $90 billion capital spend on transport infrastructure by 2020.[77]

Improvements in governance systems. Although infrastructure is normally perceived in terms of physical elements such as roads, the key change that has led to the recent growth in infrastructure construction has been the improvement in governance systems in many parts of Africa. This has led to better quality contracts for transport infrastructure being issued and standards checked. More importantly still, considerable work has been done on processes to allow the new infrastructure to work to best effect, reducing hold-ups at ports and borders. For example, the time taken for a container from Kigali to be put on a ship in Mombasa was reduced from 18 days to six between 2012 and 2014, and the time is expected to fall further in coming years.[78] Nevertheless, there will be a need for continued reform in future years if infrastructure is to continue to develop to its full potential. Willingness to carry out these reforms may be a key indicator as to different countries' potential to progress over the next 30 years.

Modes of transport. Almost all aspects of transportation infrastructure have improved across much of sub-Saharan Africa in the past 20 years, and are likely to

75 Pinsent Masons Law Firm. (2014), 'Angola's Benguela rail project is complete, says construction firm', available at http://www.out-law.com/en/articles/2014/august/angolas-benguela-rail-project-is-complete-says-construction-firm/

76 Mwesigwa, A., The Guardian, (2016) 'Uganda determined not to let expected oil cash trickle away'.

77 Africa Union Commission/UN Economic Commission for Africa. Meeting on financing of the programme for infrastructure development in Africa (PIDA), 22-25 March 2012, available at http://www.g20dwg.org/documents/pdf/view/26/

78 Donnan, S., The Financial Times, (2014), 'Rwanda finds working with the neighbours pays off', available at http://www.ft.com/cms/s/0/8ddf789e-1e54-11e4-ab52-00144feabdc0.html#axzz46rLDeSzw

improve at a faster rate over the next three decades. However, countries beset by weak government and long-term instability will probably continue to fall further behind the more advanced countries on the continent for at least the next 10-20 years, particularly when it comes to land transport systems.

Road. Road transport is the key method of transport in Africa. This is in spite of the vast majority of roads in sub-Saharan Africa not being tarmacked, meaning that poor weather can isolate over half of the rural population at various times of the year. However, investment in roads has increased in most countries, improving both the quality and quantity of metalled roads, as well as providing better maintenance equipment for those not tarmacked – key in extreme weather conditions. For example, in the past decade Ethiopia has halved the average distance to an all-weather road – a measure that has reportedly led to a 6.9% reduction in poverty.[79]

Map of proposed African highway network

Trans-African Highways

1. Cairo - Dakar
2. Algiers - Lagos
3. Tripoli - Windhoek - (Cape Town)
4. Cairo - Gabronne - (Cape Town)
5. Dakar - N'Djamena
6. N'Djamena - Djibouti
7. Dakar - Lagos
8. Lagos - Mombasa
9. Beira - Lobito

Source: African Development Bank

79 Statistics Department, African Development Bank, (2014), 'Tracking Africa's Progress in Figures'.

Assuming current rates of economic growth, present levels of domestic and international investment in road building can be expected to increase further, leading to significant expansion of the road network out to 2045. This should lead to greater economic integration and growth across the continent. However, this will also depend on other factors, including intergovernmental cooperation, particularly in developing transnational trunk routes.

Railways. Railways, which were generally built to move resources in colonial times, have received significant underinvestment in recent decades. However, global demand, a return to stability and better governance standards have in some cases led to increased government investment, with many railways in increasing use and new ones being built. This will open up some parts of the interior of Africa for the first time, perhaps improving the

Map of existing and proposed railways

— Existing rail lines
— Proposed rail upgrades and new lines
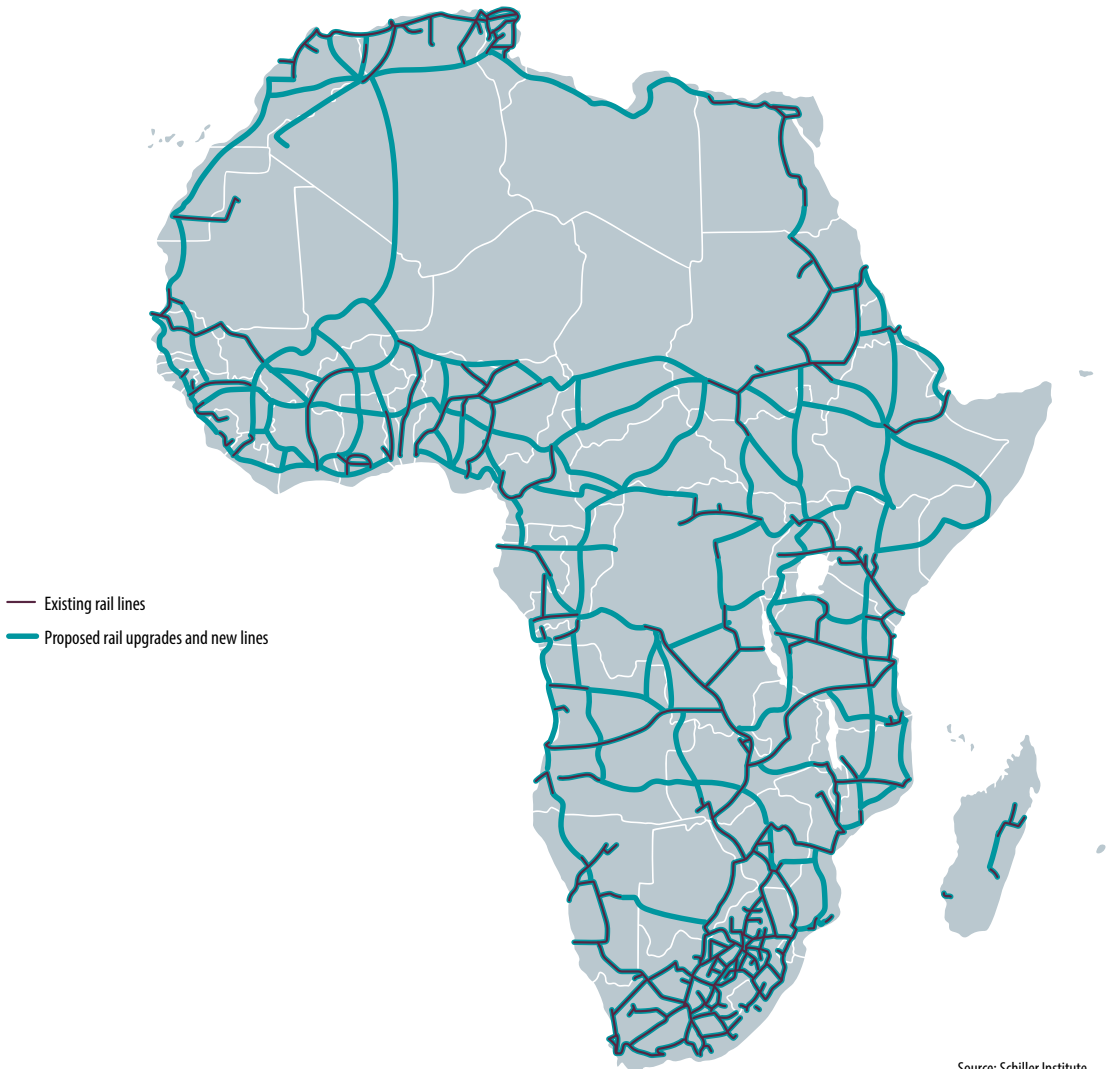
Source: Schiller Institute

A Chinese owned container ship sails north passing beneath the Mubarak Peace Bridge that links the Sinai Peninsula to the rest of Egypt

prospects of stability through economic development. For example, the rebuild of the railway from Mombasa on the east coast to Goma in northern Uganda might lead to its extension into north-east DRC or Juba in South Sudan. Such development will increase connectivity within regional economies over the next 30 years, and should create a large-scale boost to GDP growth. Furthermore, it is likely to encourage further development alongside the tracks as local people and businesses seek to use the asset, whether officially or otherwise.

Air. The sheer size of Africa, or even of individual countries such as DRC, makes air travel vital for businesspersons and government officials. However, like the railways, air infrastructure has suffered over time from a lack of long-term investment. This has resulted

in many of the national carriers, initially protected, going bankrupt and much of the continent's population being unable to travel to other parts of Africa except via Europe. In recent years, private companies have increasingly filled the gap, although there have been accidents due to poor maintenance and safety standards, as well as problems due to bilateral restrictions on international air trade across the continent. Nevertheless, current growth, and indications that the implementation of the Yamoussoukro Declaration of 1999 to create a single air market may finally occur, suggest that this will be a major growth area in coming years, providing significant investment continues – in turn enabling further regional integration and economic growth. It is also expected that the technology for hybrid air vehicles (air ships) will mature, potentially enabling the transportation of tons of goods to
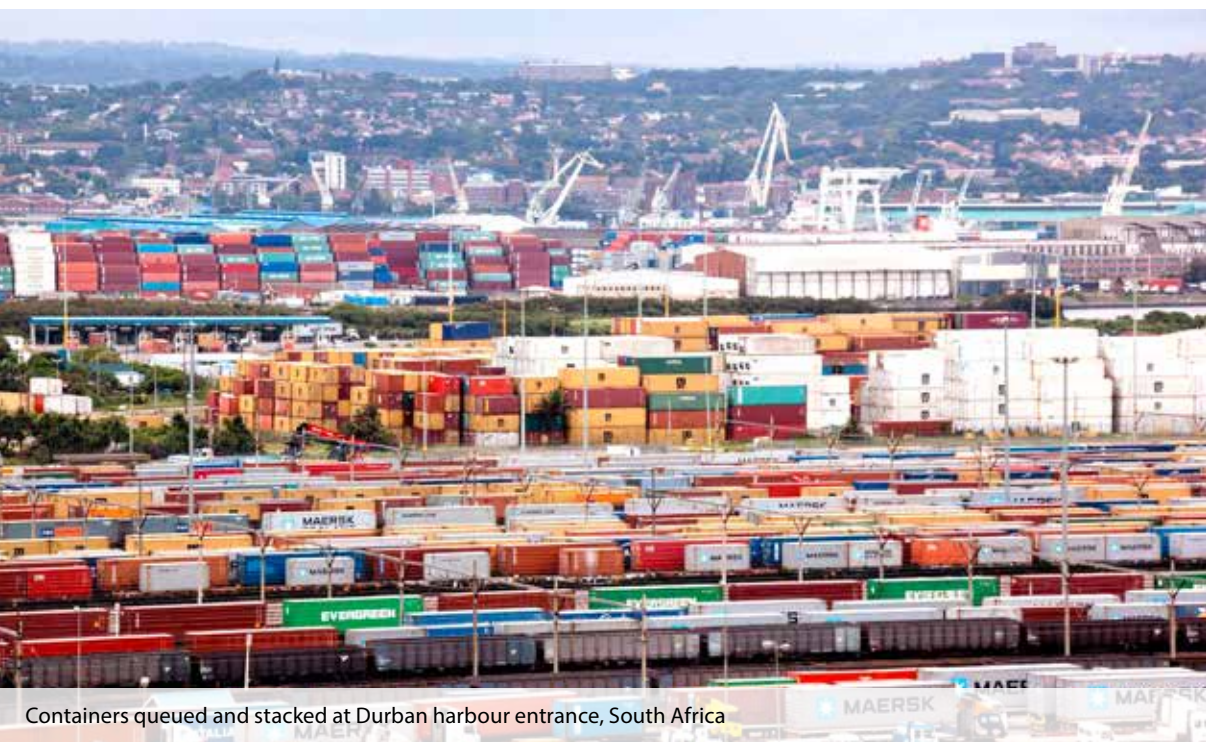
Containers queued and stacked at Durban harbour entrance, South Africa

Icswart / Shutterstock.com

otherwise inaccessible sites with limited infrastructure, boosting economic growth in remote regions.

Shipping. As in other parts of the world, the majority of goods moving in or out of Africa come by sea. Until recently, most of its ports have been old, with limited investment or infrastructure for containers. However, this is changing rapidly. It is recognised that capacity to move much greater quantities of goods must be developed if economies are to grow, and this is leading to greater investment in current ports as well as the development of huge new container ports. For example, in West Africa, the US $1.5 billion development of Ghana's Tema Port will increase current capacity

from one to 3.5 million teu[80] by 2020.[81] However, whereas the rehabilitation of the Djibouti-Addis Ababa railway will enable better utilisation of port facilities at Djibouti, there is considerable doubt whether the land infrastructure in Ghana will be ready to cope with this extra capacity – indicating the need for a holistic approach to infrastructure development. Nevertheless, the current programmes in progress, or being planned, suggest that Africa will achieve its projected physical port capacity requirements for 2020, which bodes well for it achieving similar growth rates in the coming 30 years.

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80 A teu is 20 foot equivalent units – the standard measurement for container capacity.

81 Port Strategy, (2015), 'APMT commits to Ghana', available at http://www.portstrategy.com/news101/world/africa/apmt-commits-to-ghana

Serious challenges concerning poor processes, and often high levels of corruption, make African ports some of the most inefficient, congested and expensive in the world at present. However, those governments which are committed to diversifying their economies have recognised the vital importance of liberalising the protocols to speed up movement of goods on the continent. It is therefore likely that we will see an increasing development in the capacity of Africa's ports to move goods in and out of the continent – although there will still be the potential for delays in some parts of Africa where capacity is reached. This is of particular concern for countries with no coastline, which may find their goods relegated to lower priority by coastal countries which need that capacity for themselves.

Aubrey Wade / Panos

A crane loads a shipping container from a truck onto a Maersk Lines container ship at the Queen Elizabeth Quay, Freetown, Sierra Leone

Technology

The global information network. As well as being more closely integrated into international markets, Africa is also developing closer ties with the global information network. Strong competition amongst network providers, and the increasing availability and affordability of mobile phones, has seen ownership rise from 15 million in 2000 to 760 million in 2014.[82] Mobile subscriptions in sub-Saharan Africa are expected to be about 1,400 million by 2045 and Africa is expected to have the highest regional mobile data traffic growth rate in the world for several years to come.[83] Increasing access to mobile technology has driven greater Internet usage; in 2000 there were only four million Internet users in Africa, but by 2012 this had grown to almost 200 million. Cheaper forms of computing and electricity generation are likely to continue to be developed and this, combined with a rising demand for technology and greater disposable income, is likely to ensure that almost everyone in Africa has access to the Internet by 2045.

African mobile phone subscriptions
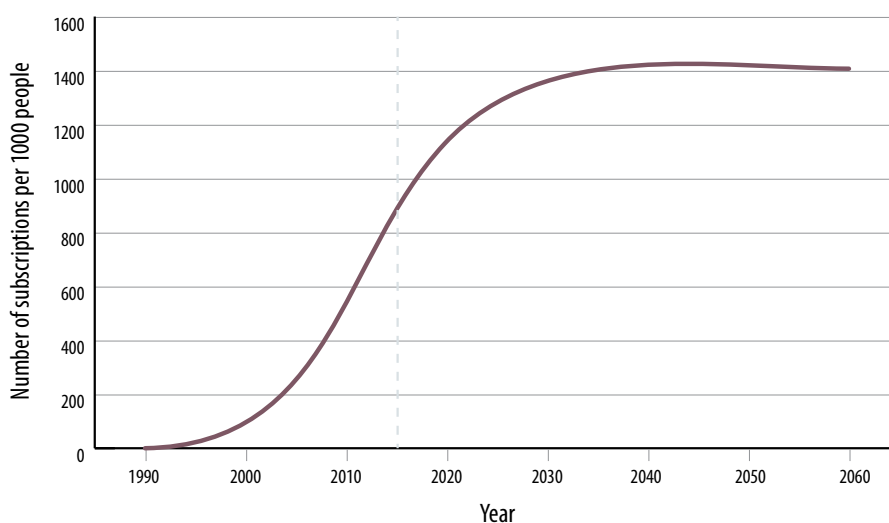
Source: African Development Bank

82 Mobile phone ownership data taken from the African Development Bank Group, available at http://www.afdb.org/en/knowledge/statistics/data-portal/

83 Smith, D., The Guardian, (2014), 'Internet Use on Mobile Phones in Africa Predicted to Increase 20-Fold'. See also Cilliers, J., Hughes, B. and Moyer, J., (2011), 'African Futures 2050', page 52.

A Mobiserve telecom employee carries out maintenance work on one of their communication towers in central Cairo

Mobile telecommunications and access to the Internet are likely to be significant drivers of economic growth and human development in Africa over the next 30 years. The effects of being able to access information freely, anywhere, are difficult to overestimate – particularly for rural communities who, until recently, had very little access to information. The implications (both positive and negative) for African governments of being able to easily collect data from citizens are also likely to be profound. For example, the increasing take-up of mobile phones has improved governments' ability to gather census data – particularly useful when birth certificates are unreliable or absent. Mobile phone coverage has also been shown to impact on agriculture and the labour market in a positive way: for example, farmers are able to find out

the prices of crops and fertilisers within different markets, and a 10% increase in mobile phone usage has been shown to increase GDP in a middle/low income country by around 1.2%.[84] By 2025, Africa's web-generated GDP ('iGDP') could account for as much as 10% of Africa's total GDP (potentially US $800 billion by 2045).[85] Much of this growth is likely to be driven by the development of innovative African Internet-based services. Currently, only 20% of Africans have a bank account, but technology is likely to play a significant role in increasing the numbers that do out to 2045.[86] Africa has also seen a surge in the quantity and

84 Deloitte, (2012), 'Deloitte on Africa: The Rise and Rise of the African Middle Class', page 5.

85 Manyika, J. et. al., (2013), 'Lions Go Digital'.

86 Economist Intelligence Unit, (2012), 'Into Africa: Emerging Opportunities for Business', page 7.

quality of fibre-optic cables connecting the continent to the Internet and by 2017 it is expected that data speeds in Africa should reach those found in North America in 2012.[87] If current trends continue, the vast majority of Africans are likely to have access to broadband coverage by 2045.

Automated and unmanned systems.
Automated, unmanned and remotely piloted systems (particularly robots) have huge potential to radically alter how African people and goods move around the continent in the future, and how Africans access services that currently require highly skilled personnel. In particular, they could help overcome critical skills shortages in health care. For example, health care robots based in rural villages could in future constitute the first line of medical care, providing instant diagnostics and possibly even treatment.

Remotely piloted systems could be used to deliver specific medical supplies: for example, Afrotech's RedLine project is currently seeking to use such technology to deliver vital medical supplies to remote and inaccessible locations.[88] There is also significant potential for emerging technology developments to overcome some of Africa's biggest infrastructural challenges, particularly those associated with transport. For example, prototype hybrid air vehicles (air ships) that can carry up to three tons have been developed, and by 2045 larger versions could be used to transport cargo to and from areas without traditional transport links.[89]

Technology and economic diversification. Greater adoption of technology and improvements in education opportunities will almost certainly alter traditional labour models and may allow greater economic diversification in some African countries out to 2045. Some low-skilled activity (for example, in areas such as agriculture and mining) is likely to be replaced by higher-skilled work in both traditional and new sectors (for example, in the service sector). It is unclear whether manufacturing will increase in Africa over the coming decades, as it has recently declined as a proportion of GDP. Although Africa will almost certainly have an abundant workforce, unreliable infrastructure and security concerns may continue to make large parts of the continent an unattractive option for investment in manufacturing. Even without heavy industry, however, the African economy is likely to diversify and become more productive out to 2045. This may, in turn, attract inward migration

87 Oxford Martin Commission for Future Generations, (2013), 'Now for the Long Term', page 22.

88 Afrotech EPFL, Red Line, available at http://afrotech.epfl.ch/page-115280-en.html

89 Lockhead Martin, Hybrid Airship, available at http://www.lockheedmartin.co.uk/us/products/HybridAirship.html

Dieter Telemans / Panos

Maasai women from Kenya and an Indian woman following a course on solar energy at the Barefoot College

Employees at a partly Dutch-owned flower farm 30 kilometres outside the capital of Addis Ababa, Ethiopia

Sven Torfinn / Panos

to certain regions over the next 30 years, resulting in an African 'brain circulation' (the return of skilled migrants back to Africa) rather than the 'brain drain' seen today.

Biotechnology and food security.
With changing climatic conditions and a growing population, the influence of biotechnology on improving food security could be important to Africa's long-term future. The adoption of high-yield, drought-, disease- and pest-resistant crops could have a direct bearing on poverty alleviation and environmental conservation.[90] Technologies such as interspecific hybridisation (which allows the cross-fertilisation of favourable traits from different species) has been used successfully in developing new rice for

Africa.[91] Enhancements to microbial production of animal feed, along with cheap, quick and accurate diagnostic techniques against disease, could also benefit livestock growth and production.[92] The ease with which these technologies are adopted will be influenced by cost, understanding and public opinion. African governments adopted tight restrictions on the international movement of living genetically modified organisms, crops and seeds under the United Nations-endorsed Cartagena Protocol

90 Agricultural biotechnologies in developing countries and their possible contribution to food security, available at http://www.fao.org/docrep/015/an111e/an111e00.pdf

91 Wopereis, M.C.S, *et al*., (2008), 'Why NERICA is a successful innovation for African farmers: a response to Orr *et al*. from the Africa Rice Center', available at https://www.researchgate.net/publication/224943396_Why_NERICA_is_a_successful_innovation_for_African_farmers_A_response_to_Orr_et_al_from_the_Africa_Rice_Center

92 The Journal of Allied Poultry Research, (2009), 'Feeding beneficial bacteria: A natural solution for increasing efficiency and decreasing pathogens in animal agriculture', available at http://japr.oxfordjournals.org/content/18/2/367.full

established in 1996;[93] this has stalled development of scientific research across Africa with only three African nations – South Africa, Egypt and Burkina Faso – producing genetically modified crops at present.[94] There are also barriers preventing investment: for example, small-scale land ownership across Africa makes it harder for the average farmer to raise funds and be informed on the benefits of bioengineered crops.[95] Governance standards are also a limiting factor; instability, combined with weak and ineffective intellectual property rights laws, can act as a barrier, deterring investment.[96,97] In the short term, these issues will endure across Africa. However, changing climatic conditions, a growing population, mobile phone dissemination into rural areas, economic growth and increasing stability could have a positive influence on biotechnology investment and food security out to 2045.

93 'UN convention on Biological Diversity', available at https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-8&chapter=27&lang=en

94 The Conversation, (2015), 'Why genetically modified crops have been slow to take hold in Africa', available at http://theconversation.com/why-genetically-modified-crops-have-been-slow-to-take-hold-in-africa-44195

95 'Africa's changing landscape: Securing land access for the rural poor', available at http://www.cpahq.org/cpahq/cpadocs/FAO%20Land%20Access%20for%20the%20Rural%20Poor%20in%20Africa.pdf

96 'African Perspectives on Genetically Modified Crops', available at http://en.biosafetyscanner.org/pdf/doc/335_allegato.pdf

97 'Policy, Investment, and Partnerships for Agricultural Biotechnology Research in Africa: Emerging Evidence', available at http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/127824/filename/128035.pdf

⚡ Climate change and the environment

The effect of climate change on Africa's environment and resources is likely to pose a huge challenge out to 2045, impacting on issues such as water and food availability, migration and energy. Effects will vary according to region, and not all will be adversely affected.

Temperature rises. Between 1901 and 2012, average temperature increased by 0.5ºC in Egypt and 2ºC in north-west Sahara. Current forecasts suggest that, with the exception of the central coastal regions, the African continent is likely to see at least a 1ºC rise in temperature and probably a 2ºC average temperature rise by 2050.[98] North and Southern Africa, specifically in the drier regions, will see larger increases of up to 3ºC by the middle of the century. The trend of warming across these areas will exacerbate the levels of water scarcity that already exists there, and if resources are not managed effectively this could lead to high levels of water stress – particularly as the population continues to increase.

Extreme weather events. Extreme weather, such as increases in the duration of dry spells, or changes in the intensity of rainfall, has already been observed across the continent. However, out to 2045 many countries will see increasingly intense, severe and frequent droughts and floods, higher maximum temperatures, and increasingly intense storms – all of which are likely to have a major effect on agricultural production and hence may potentially lead to increases in food shortages and even famines within the timescale. The frequency of a 1-in-30 year flood event is projected to increase across most of the continent, except along the northern coast and parts of Southern Africa. Mozambique, Tanzania and Madagascar have been identified as particularly vulnerable to tropical storms in the future.[99]

Coastal flooding. Sea-level rise will lead to coastal flooding, threatening Africa's coastal populations out to 2045. Continental Africa comprises 48 countries of which 33 have coastlines, and islands surrounding the continent provide a further 7,500 kilometres of coastline. Uncertainties in future projections and a lack of data prevent accurate predictions, but vulnerability to differing levels of future sea level rise is well-documented. Studies have shown that a mean sea level rise of only 0.38 metres, when compared against population growth scenarios,

98 Richardson, K., UK Met office Hadley Centre report, (2015), 'Climate Change in Africa; a review to inform DCDC's Africa Regional Survey 2045'.

99 Brown, S, Kebede, A, and Nicholls, R., (2011), 'Sea-Level Rise and Impacts in Africa, 2000-2100', available at http://www.unep.org/climatechange/ adaptation/Portals/133/documents/ AdaptCost/9%20Sea%20Level%20Rise%20 Report%20Jan%202010.pdf, page 7.

An Urhobo women dries tapioca using the heat generated by an oil company gas flare to carry out the process, Nigeria

George Osodi / Panos

would mean that the number of people flooded annually in Africa would increase from one million in 1990 to 70 million in the 2080s.[100] With an increasingly urban population, many of whom will be living in unplanned cities near the coast, the risk of humanitarian disasters is therefore likely to increase significantly out to 2045. Already, over 25% of Africa's population live within 100 kilometres of a coast; the Mediterranean coastal zone in particular (land up to ten metres above sea-level) is heavily populated due to the development of coastal activities such as fishing, tourism and sea ports for imports and exports. Many large cities are located in this area, for example, Cairo, Alexandria, Tunis, Tripoli, Algiers and Benghazi. If transportation and communication networks are flooded in these areas, it will have an adverse effect on the economy, affecting the agricultural, commercial, industrial and recreational sectors which

countries in this zone commonly rely on for income generation. Elsewhere, other large port cities are likely to be threatened by floods, for example, Mombasa in Kenya.[101] In total, up to 1.4 million people in Africa could be displaced by the present rates of sea level rise by 2050, most of whom are expected to be from the Nile Delta.[102] The areas most at risk from flooding due to sea level rise, however, are Mozambique in the east and Benin and Guinea-Bissau in the west.[103] Whether countries can adapt depends on their capacity, population density and wealth. Poorer countries with a lower ability to prepare or respond to climate

101 Brown, S, Kebede, A, and Nicholls, R., (2011), 'Sea-Level Rise and Impacts in Africa, 2000-2100', available at http://www.unep.org/climatechange/adaptation/Portals/133/documents/AdaptCost/9%20Sea%20Level%20Rise%20Report%20Jan%202010.pdf, page 8.

102 *Ibid.*, page 9.

103 Richardson, K., UK Met office Hadley Centre report, (2015), 'Climate Change in Africa; a review to inform DCDC's Africa Regional Survey 2045'.

100 *Ibid.*

change will be worst hit.

Rainfall and water shortages. While limited historical data exists for rainfall patterns there is some evidence to suggest a decrease in average annual rainfall in West Africa and parts of western and eastern Sahel and an increase in parts of East and Southern Africa out to 2045.[104] Projections also show a drying trend in the already dry regions of the north and south of the continent. Taken together with the projected temperature increases across the whole of Africa, this suggests an expected increase in the number of days of drought out to 2045 (except in the Horn of Africa).

As rainfall becomes more erratic, the numbers of people suffering from shortages of water will increase, compounded by population growth, migration and a lack of infrastructure. While Africa has historically coped with shortages of water, its farming methods are susceptible to even small fluctuations in rainfall, which are likely to lead to migration and competition over land. In Ethiopia and Sudan, the disruption to rainfall patterns has already adversely affected agriculture and rural livelihoods.

There will be increasing demands for water out to 2045, with the amount of water required for agricultural production likely to grow most significantly (since crops require more water as the temperature increases). More efficient irrigation will be necessary just to maintain current levels of crop production, but with a growing population demand can be expected to increase. The proportion of those without access to fresh water has increased over the previous two decades, and currently more than 40% of all people without

access to safe drinking water live in Africa. Africa's rising population is driving demand for water and accelerating the degradation of water resources.

The effects of water stress are therefore likely to be widespread, and may include:

- the spread of disease;
- a reduction in agricultural productivity and resulting malnutrition; and
- harm to the economy.

Institutional, financial and human capacities for managing water are currently lacking and this is made worse by competition for public funding between sectors, and public debt burdens in most countries.[105] Most countries within the continent are failing to achieve adequate water sanitation and hygiene standards, with over 80% of countries reportedly falling significantly behind the progress needed to meet their targets for access to sanitation and drinking water. A lack of coordination among authorities and inadequate staffing in governments' environmental departments provide further challenges. There have been increases in the proportion of the urban population having access to an improved water source in recent years, with the number of countries where at least 80% of their urban population has access to clean water rising from 26% in 1990 to 38% in 2010.[106] Rural populations are more poorly served, although the numbers of those having access has still increased.

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104 *Ibid.*, page 9.

105 UN, 'International Decade for Action 'Water for Life' 2005-2015, Africa: Challenges, Risks and Uncertainties', available at http://www.un.org/waterforlifedecade/africa.shtml

106 UN, 'International Decade for Action 'Water for Life' 2005-2015, Africa: Progress so far', available at http://www.un.org/waterforlifedecade/africa.shtml

A sea of bottles and a sorter at one of the Wecycler hubs, Lagos, Nigeria

Joan Bardeletti / Panos

Overall the number of countries with less than 50% of the rural population having access has fallen from 27% to 16%.[107] However, the proportion of the population using improved sanitation facilities is low (40% in 2010) and there is a marked contrast between rural (31%) and urban (54%) populations. More significantly, while there have been slight improvements in rural areas, there has been a decline in adequate sanitation coverage in urban areas since 1990 (57%).[108] This can be attributed to increases in the slum population, and the trend is likely to continue unless water management strategies are implemented for the urban slums.

If water stress is not managed effectively (including, where appropriate, regional cooperation), it could pose a significant source of social and political tension, potentially leading to conflict, particularly in areas of high population density and where access to water resources is disputed. UN initiatives such as the Water for African Cities Programme and Human Values in Water, Sanitation and Hygiene Education Programme may assist with some of these issues. However, reaching agreement between countries which are already in dispute over water rights may be more challenging.

Recycling. Africa faces significant challenges in the field of waste management, giving rise to pollution, disease and environmental concerns. Africa was already producing 70 million tons of waste annually in 2014, and with projected increases in the population and levels of economic activity this figure is expected to rise above 160 million tons

107 *Ibid*.
108 *Ibid*.

in the next decade.[109] It is estimated that only 10% of waste generated is currently collected – a problem for the fishing industry and for urban areas in particular. However, this highlights a recycling opportunity for Africa, especially in areas experiencing extreme poverty. While environmental concerns are a low priority for many, the financial incentives to recycle waste which have been set up by communities and individuals across Africa have already proved successful, as illustrated by waste collection schemes such as Wecyclers in Nigeria and EcoPost in Kenya. Another initiative is using landfill to make new settlements as rising sea levels claim land.

Joan Bardeletti / Panos

Wecyclers offer a waste collection service with a fleet of 25 of these tricycles

109   World Bank Urban Development Series, (2015), 'Making money from trash-Meet Africa's top 5 entrepreneurs in the waste recycling business', available at http://financialjuneteenth.com/making-money-from-trash-meet-africas-top-5-entrepreneurs-in-the-waste-recycling-business

⚡ Energy

Energy is an area where Africa could 'leapfrog' developed countries, adopting renewable energy generation on a large scale to arrive quickly at a low-carbon future. Currently, however, sub-Saharan Africa has more than 620 million people living without access to electricity – the majority of Africa's population, and nearly half the global total of those without electricity.[110] Furthermore, half of all grid-based generation capacity in the sub-Saharan region is in South Africa and losses during transmission are double the world average.[111] These factors contribute to some of the highest electricity tariffs in the world and an unreliable supply.

Some forecasts see sub-Saharan Africa's electrification rates growing from 34% in 2010 to about 71% by the middle of the century.[112] Urban areas will lead the way, increasing from 65% to 93%, whilst rates in rural areas will rise from 16% to 46%. In addition, 8% of the population will gain access to electricity through off-grid systems, meaning that in total almost 80% of sub-Saharan Africans should have access to electricity by the middle of the century.[113] Nuclear electricity generation is currently exclusive to South Africa, but potentially the north of the continent will be the next region to adopt it. In addition, Algeria, Egypt and Libya could potentially develop nuclear power through existing agreements with nuclear energy countries, and Algeria and Egypt plan to have nuclear power stations by 2045.[114]

Energy reserves. Although few have access to reliable supplies of energy, energy resources in Africa as a whole are more than sufficient to meet the continent's needs, both now and in the foreseeable future. Almost 30% of global oil and gas discoveries made over the last five years have been in sub-Saharan Africa, which has around 65 billion barrels of proven oil reserves, equivalent to around 5% of the world's total. Remaining recoverable resources are sufficient for around 100 years (oil), 400 years (coal) and 600 years (gas) on current rates of consumption.[115]

110 International Energy Agency. (2014), 'Africa Energy Outlook Special Report - A Focus on Energy Prospects in Sub-Saharan Africa', available at https://www.iea.org/publications/freepublications/publication/WEO2014_AfricaEnergyOutlook.pdf

111 *Ibid*.

112 McKinsey & Company, (2015), 'Brighter Africa: The growth potential of the sub-Saharan electricity sector', available at http://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/powering-africa

113 *Ibid*.

114 World Nuclear Association, (2016), 'Emerging Nuclear Energy Countries', http://www.world-nuclear.org/information-library/country-profiles/others/emerging-nuclear-energy-countries.aspx.

115 International Energy Agency, (2014), 'Africa Energy Outlook Special Report - A Focus on Energy Prospects in Sub-Saharan Africa', available at https://www.iea.org/publications/freepublications/publication/WEO2014_AfricaEnergyOutlook.pdf.
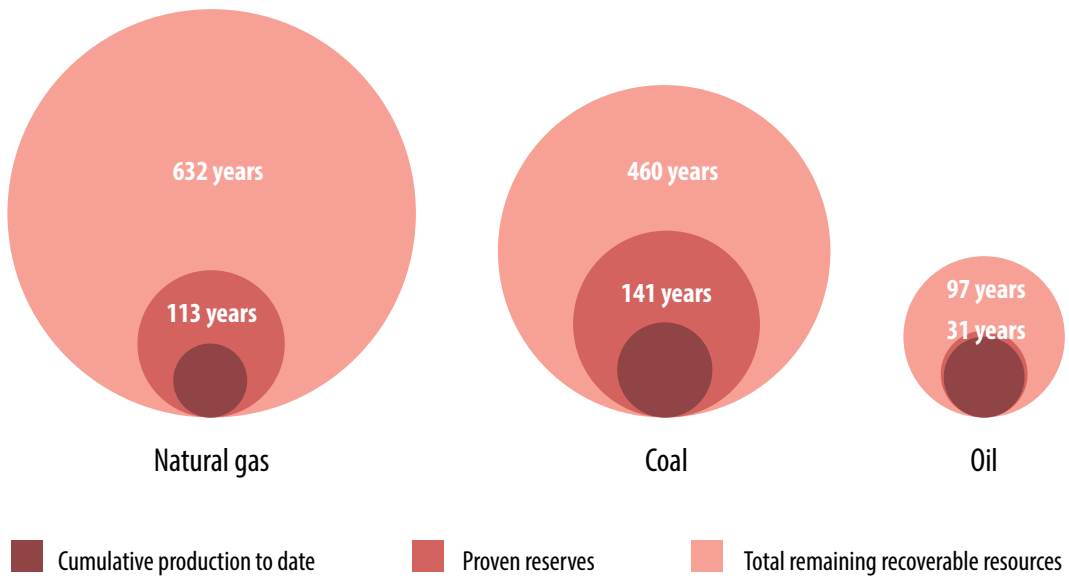
Graph showing current expected recoverable resource reserves

632 years	**460 years**	**97 years**
113 years	**141 years**	**31 years**
Natural gas	Coal	Oil

■ Cumulative production to date   ■ Proven reserves   ■ Total remaining recoverable resources

Source: International Energy Agency

Renewable energy. Africa has abundant potential for renewable energy, particularly hydropower, which in 2015 accounted for 20% of the power supply in sub-Saharan Africa, even though less than 10% of the estimated technical potential has been harnessed. Solar power might have even greater potential. Additionally, the East African Rift Valley is considered one of the most promising global prospects for geothermal development. Already the cost of renewable energy infrastructure is reaching economic parity with the cost of new infrastructure for fossil fuel energy production, and by 2045 renewable energy is likely to be even cheaper.[116] By 2045, much of Africa's energy could potentially come from renewables, and although current forecasts still show the majority of energy coming from oil, natural gas and coal,

initial indications are of a faster move to renewables in the future,[117] particularly through small-scale local generation, and with larger projects potentially exporting energy to Europe and perhaps beyond.

Energy poverty has a profound impact on more general poverty reduction strategies. For example, it is estimated that universal access to electricity would increase annual African GDP growth by between 2% and 3% and increase business productivity in Africa by 40%.[118] The most cost-effective way of producing power for the rural population could be by using smaller-scale innovation

116 Sanni, M., (2014) 'Adopting latecomers' strategies for the development of renewable energy technology in Africa'.

117 International Renewable Energy Agency. (2015), 'Africa 2030: Roadmap for a Renewable Energy Future', available at http://www.irena. org/DocumentDownloads/Publications/IRENA_ Africa_2030_REmap_2015_low-res.pdf

118 S Bössner. (2014), 'The EU and sub-Saharan Africa: An energy partnership', available at www.iss. europa.eu/uploads/media/Brief_5_energy_in_ SSA.pdf

Employees of the Odebrecht Company, a Brazilian engineering firm, working on the renovation of the Cambambe dam and hydroelectric power station in Angola

techniques, such as deployable miniature off-grid photovoltaic solar power. It is estimated that this could be the most cost-effective solution for 34% of the population of sub-Saharan Africa.[119] Notwithstanding this, connecting to a central electricity grid is likely to remain the most efficient solution for 39% of the population and will play a vital role in economic growth.[120]

119 Bössner, S., (2014), 'The EU and sub-Saharan Africa: An energy partnership', available at www.iss.europa.eu/uploads/media/Brief_5_energy_in_SSA.pdf

120 *Ibid*.

🌾 Agriculture and land reform

Agriculture and productivity.

Agriculture has the scope to dramatically increase African prosperity, but it will require increased investment (particularly in infrastructure and technology) and improved management if that potential is to be realised by 2045. Agriculture and agribusiness are Africa's largest economic sectors: for example, in sub-Saharan Africa they comprise at least 40% of exports, 30% of GDP and 30% of foreign exchange earnings.[121] Between 70-80% of all employment in the region is in the agricultural sector, although this mainly consists of subsistence farmers.[122] On current trends, it is likely that agriculture will continue to be the largest sector of the African economy (by number of workers) out to 2045, even with the expected increases in urbanisation and economic diversification. Assuming that investment increases (as is expected), agriculture and agribusiness are projected to be a trillion dollar industry in sub-Saharan Africa by 2030, up from US $313 billion in 2010; if that rate of growth continues, the value of agriculture could reach around US $2 trillion by 2045. A lack of investment, however,

means that crop yields and production are currently low by global levels. For example, yields typically achieved in Africa are only half the global average. This is likely to change by 2045, by which time agriculture is predicted to be the most promising investment opportunity for growth in Africa, ahead of mining and metals. The lack of infrastructure, access to markets, and the need for land reform are three factors that prevent the economic potential of agriculture being realised today. With over half of the population employed in the agricultural sector, investment in these areas could bring about hugely beneficial opportunities for rural societies out to 2045.[123] However, if the agricultural industry is not managed correctly, the issue of land tenure is not addressed to facilitate larger farms, and the necessary investment is not made, the effects of population growth and environmental degradation could result in a failure to realise Africa's agricultural potential and severe food shortages out to 2045.

Land ownership.

More efficient use of land will be needed to increase Africa's agricultural productivity out to 2045. Whilst efficiencies may be achieved

121 The Government Office for Science, London, (2011), 'The Future of Food and Farming: Challenges and choices for global sustainability. Final Project Report', available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288329/11-546-future-of-food-and-farming-report.pdf.

122 *Ibid.*

123 Ernst and Young. (2015), 'Africa Attractiveness Survey 2015', available at http://www.ey.com/Publication/vwLUAssets/EY-africa-attractiveness-survey-june-2015-final/$FILE/EY-africa-attractiveness-survey-june-2015-final.pdf

through scale and improvements in infrastructure and education, the reform of land tenure will be key to improved agricultural productivity going forward. In large parts of Africa, ownership of land is not formally recorded. Occasionally this is due to records of ownership being incomplete or non-existent, but mostly this is because land is not owned by individuals but held in informal trusts by a tribe, village or other group. Without clear rights of ownership, land cannot be used as security to raise capital, nor can small unproductive plots be sold so that they can be joined together into productive blocks of land. Most governments understand the problem, but attempts at reform have often failed and have frequently been seen (sometimes for good reason) as a way for unscrupulous officials to steal land from ordinary citizens. With effective land reform, agriculture could sustainably provide more food and greater employment, with less impact on the environment. Therefore, if countries are to achieve their full agricultural potential over the next

30 years, the issue of land ownership will need to be addressed. However, recent attempts to reform land ownership have been fraught, and struggles over land reform, between governments and rural farmers who wish to maintain their way of life, are likely to continue out to 2045. The problems of land tenure and food insecurity are inextricably interlinked and will be exacerbated by the rapid population growth in Africa over the next 30 years. Despite having some 24% of the world's agricultural land, Africa only produces 9% of global agricultural output.[124] Africa has a growing dependence on food imports; for example, it currently imports 30% of cereals used for food, and levels of imports are rising.[125] Furthermore, while the percentage of undernourished people in Africa is declining, the actual number has increased due to population growth. If Africa is able to realise its full agricultural potential, then not only should rates of malnutrition reduce substantially, but the sector will also drive economic growth out to 2045.

124 African Development Bank, (2014), 'Tracking Africa's Progress in Figures' available at http://www.afdb.org/en/knowledge/publications/tracking-africa%E2%80%99s-progress-in-figures/

125 Evans, A., (2009), 'The Feeding of the Nine Billion. Global Food Security for the 21st Century', available at http://inec.usip.org/resource/feeding-nine-billion-global-food-security-21st-century
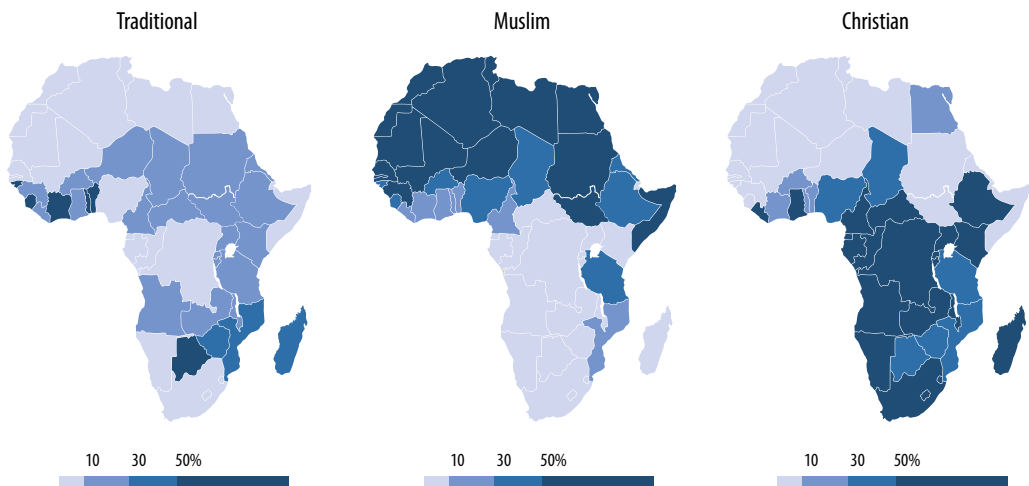
Religion

Importance of religion. Religion is very important to most Africans, and this is unlikely to change significantly out to 2045. The vast majority of North Africa is Muslim, whilst sub-Saharan Africa is split between Islam in the North and Christianity in the south, but with considerable overlap. Christianity is likely to remain the majority religion on the continent out to 2045, but the proportion of the population who are Muslim will increase (mainly due to higher fertility rates).[126] Indigenous beliefs are also practised in many parts of Africa, and in many cases have become entwined with Christianity and Islam.

This may explain why much of the population has been relatively willing to change denominations within their own religion, or indeed between the two in countries which are religiously mixed. This may also explain the general religious tolerance exhibited in the 20th Century.[127] The maps below demonstrate the location of the different populations, but it is worth noting that there is a large enough Muslim minority in all countries of coastal West Africa for them to belong to the Organisation of Islamic Community. These maps also mask the numerous denominations within both religions.

Maps showing split of religions geographically

Traditional	Muslim	Christian

10   30   50%

Source: Pew Research Centre

126 Pew Research Centre, (2015), 'The future of World Religions: population growth projections 2010-2050', available at http://www.pewforum.org/2015/04/02/religious-projections-2010-2050.

127 Pew Research Centre, (2010), 'Tolerance and Tension: Islam and Christianity in Sub-Saharan Africa', available at http://www.pewforum.org/2010/04/15/executive-summary-islam-and-christianity-in-sub-saharan-africa/

Steven Miric / istock

> **Salafism and Sufism – a simple characterisation**
>
> **Sufism** describes a mystical form of Islam made up of many sects which exist across much of the Islamic world, including a number of African sects. Whilst Sufi movements resisted colonial expansion in the past, they tend to be relatively parochial/inward-looking in Africa.
>
> **Salafism** describes a movement which strictly interprets the Koran as it was written, and does not accept religious innovation but supports the implementation of Sharia law. The majority of adherents avoid politics but others are more political (for example, the Muslim Brotherhood in Egypt) and a growing number of groups call for global jihad. For example, Daesh considers itself Salafist, as does al-Shabaab in Somalia and Boko Haram in Nigeria.

Traditional tolerance may reduce. Christians and Muslims have generally lived peacefully together in Africa for centuries, although localised tensions have existed. Unfortunately, these tensions are likely to increase out to 2045 with the increasing growth of less tolerant movements, such as Salafism and evangelical Pentecostalism. Whilst religion is seldom the main driver of conflict, it can be manipulated for political purposes. Radical Islam and Christianity have provided an identity around which political actors can galvanise major sections of society – particularly in opposition to others. Such polarising actions could lead to a reduction in religious tolerance, which may lead to an increase in violence between religious groups out to 2045.

Sufism and Salafism. Following its establishment in North Africa, Islam's spread south of the Sahara and into East Africa has become intertwined with the local indigenous systems of belief. In many regions, Sufism can be perceived as more a way of life than a religion, with many adherents having only a limited understanding of the doctrinal underpinnings of Islam (perhaps not dissimilar to Christianity in some parts of Europe). However, traditional Sufism in much of Africa appears to be under challenge from Salafism, which is expanding. This has been driven by:

- the external offer of scholarships for would-be Imams;

- funding for Madrassas;

- an increase in 'missionaries'; and

- a more outward rather than insular approach, which has appealed to the young as well as the disenfranchised.[128]

Social media, and television stations like al Jazeera, also have considerable influence in the Horn and East Africa, and have provided further impetus for widening horizons rather than the inward-looking approach of the past. Salafist adherents, whilst not necessarily extremist, appear to be more open to

128 Furnish, T., (2013), 'Sufis v. Salafis: Winning Friends and Interdicting Enemies in Islamic Africa.'

Ethiopian girls walk to a madrasa in Harar, Ethiopia

radicalisation,[129] as has been seen most obviously in Somalia, Mali and with Boko Haram in Nigeria. It seems likely that the trend from Sufism to Salafism will continue over the next 30 years, if only driven by the external factors described earlier in this paragraph. It is therefore probable that this traditionally (relatively) peaceful religion in sub-Saharan Africa will become increasingly intolerant of people of other religions, or indeed other sects within Islam. There is also an accompanying risk of increasing links across the continent to more extreme external groups like al Qaeda and Daesh, and with it a greater possibility of violence and conflict. For example, there are reports of thousands of sub-Saharan Africans, possibly from

Boko Haram, joining Daesh at Sirte.[130]

Changing face of Christianity. Africa has an increasingly important voice in the Roman Catholic Church and other established churches such as Anglicanism. This growing level of influence comes, at least in part, because the number of African worshippers continues to increase as the population grows. At the same time, the population is in decline in other parts of the world, whilst in Europe there is a rapid drop-off in church attendance in many countries. For example, in the UK a report by the Office of National Statistics indicated that Christian faith dropped from 71% in 2001 to 59% in 2011, despite being boosted by over

129   Abdel-Latif, O., (2009), 'Islamist Radicalisation: The Challenge for Euro-Mediterranean Relations', Chapter 4 - 'Trends in Salafism'.

130   Patton, C., International Business Times, (2016), 'ISIS in Libya: How Boko Haram jihadis are flocking to join Daesh's holy war in North Africa', available at http://www.ibtimes.co.uk/isis-libya-how-boko-haram-africas-jihadis-are-flocking-join-daeshs-holy-war-1547640

one million foreign-born practising Christians.[131] At the same time there is also a move towards neo-conservative evangelism in Africa, and the more conservative approach of Africans is putting them in direct conflict with the more liberal elements of the global established churches, who have pushed for modernisation (for example, by anointing female priests or advocating a more tolerant attitude to homosexuality). Out to 2045, there remains a significant risk of a schism in the Anglican Church, in which over 50% of adherents are now African,[132] with talks of a parallel structure being set up. Further divisions between traditionalist and liberal elements of the established churches look likely to increase in the coming years, while both elements are likely to face competition from Pentecostalism in large parts of Africa. For example, by 2015 there were more Pentecostalists in Zimbabwe and Ghana than there were Roman Catholics. Pentecostalists and charismatics of the established churches have risen in numbers from 5% of the total African population in 1970 to over 17% by 2006, a figure that is expected to rise still further out to 2045.[133] Whilst evangelical wings of Christianity preach positive messages, they are likely to be less tolerant of others, again raising the spectre of future religious tension out to 2045.

Religion and development. Religious groups will continue to be an important social force in Africa out to 2045, with significant roles in development, health care, education and welfare.[134] However, whilst activities by religious groups to promote development and welfare are usually beneficial, there have been problematic outcomes in the past, and risks remain for the future. For example, the increased provision of Salafist madrassas for education in Somalia left a generation open to radicalisation. Furthermore, international attempts to highlight the importance of human rights for minority groups have had negative effects when translated into a highly conservative context. For example, it has been argued that the recent politicisation of homosexuality in some African countries was at least partially driven by American evangelical churchmen reacting to their failure to stop gay marriage in the West, and finding fertile ground for their views in Africa.[135] It is also likely that some churches will take increasingly harsh stands against liberal ideals and may force governments to take further action which the West would consider reactionary. Additionally, in some parts of Africa Islamic communities have a less than positive attitude towards Western forms of education, and increasing educational disparities may lead to a widening wealth divide between different communities, which will in turn increase the likelihood

131 Saul, H., Independent, (2013), 'Census figures show Christianity in sharp decline while belief in Islam dramatically increases', available at http://www.independent.co.uk/news/uk/home-news/census-figures-show-christianity-in-sharp-decline-while-belief-in-islam-dramatically-increases-8621271.html

132 Pew Research Centre, (2008), 'Global Anglicanism at a Crossroads', available at http://www.pewforum.org/2008/06/19/global-anglicanism-at-a-crossroads/

133 Pew Research Centre, (2006), 'Overview: Pentecostalism in Africa', available at http://www.pewforum.org/2006/10/05/overview-pentecostalism-in-africa/

134 Fredriksen, B. and Kagia, R., Global Journal of Emerging Market Economies, (2013), 'Attaining the 2050 Vision for Africa: Breaking the Human Capital Barrier', available at http://Eme.sagepub.com/content/5/3/269.full.pdf+html?frame=header

135 Walker, T., Independent, (2014), 'How Uganda was seduced by anti-gay conservative evangelicals', available at http://www.independent.co.uk/news/world/africa/how-uganda-was-seduced-by-anti-gay-conservative-evangelicals-9193593.html

of violence and unrest. In Nigeria, school attendance rates and the proportion of qualified teachers are higher in the Christian south than in the Muslim north of the country, which has also been rocked by a violent insurgency.[136]

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136 Compilation from: Nigeria Education Data Survey 2015; State Government Annual School censuses 2010-2014; UK Aid funded TDNA (teachers' development need assessment) surveys in Nigeria 2010-2014.

💰 Corruption and crime

Organised crime. Organised transnational crime and the illicit trade of goods, circumventing taxation, are expanding in Africa.[137] The evolution of organised crime is closely linked to the development and changing nature of the African state and is increasingly facilitated by the connections between Africa and the global economy and advancements in technology.[138] Poor governance will almost certainly continue to provide space for organised crime in Africa out to 2045; what is more, in some parts of Africa, political establishments and security structures may take part in criminal activities or directly benefit from them.

Organised crime in Africa goes back to the decolonisation of the 1970s, when structural adjustments and shrinking economies created conditions for criminal networks with close links to political and business elites to spread. Large-scale cocaine trafficking was also introduced to the continent at this time.[139] After the Cold War there were protracted conflicts with armed groups establishing close links to foreign criminal networks to

fund their activities, and an increase in cross-border criminal activities. Weak and corrupted state institutions facilitated a rapid growth and consolidation of organised crime at the beginning of the millennium, as indicated by a flourishing drugs trade from Latin America and Asia to Europe via Africa, as well as to a growing number of African consumers.[140] Well-established crime networks in Nigeria benefited from unprecedented volumes of illicit funds from drugs trafficking,[141] impacting on political processes in West Africa and exporting fragility across the region and the Sahel.[142] Today, African (mainly Nigerian) criminal groups are increasingly in control of the drugs trade to Europe via East Africa.

In the long term, increasingly powerful criminal networks with strong links to the state are likely to exploit developments in communications technology and closer

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137 UN Office on Drugs and Crime, statistics; and Shaw, M and Reitano, T., ISS, (2013), 'The evolution of organised crime in Africa.

138 Shaw, M and Reitano, T., ISS, (2013), 'The evolution of organised crime in Africa'.

139 Organised criminal activity was initially largely concentrated to south–eastern Nigeria and Western Cape.

140 UN Office of Drug and Crime, (2012), 'West Africa – 2012 ATS Situation Report', available at https://www.unodc.org/documents/scientific/ATS_West_Africa_final_2012.pdf

141 UN Office of Drug and Crime, (2011), 'The Transatlantic Cocaine Market', available at https://www.unodc.org/documents/data-and-analysis/Studies/Transatlantic_cocaine_market.pdf

142 Compare UN Office on Drug and Crime regional report West Africa and the US Congressional Research Service report 'Illegal drug trade in Africa: Trends and US policy' (2009). For an excellent analysis on origins of organised crime in Nigeria see Ellis, S., (2016), 'This present darkness – a history of Nigerian organised crime'.

Elephant feet displayed at the animal sanctuary in Pemba, Mozambique after poachers had killed the animals

Katiekk / Shutterstock.com

integration into the global economy to facilitate their activities. Urban hubs are likely to play an increasingly important role as centres for channelling illicit resources. The spread of unplanned but digitally-connected urban areas is also likely to provide a breeding ground for criminal organisations in many African countries out to 2045. African criminal groups are increasingly likely to engage in international transnational crime, leading to new and emerging forms of crime. Traditional hierarchical criminal groups are likely to give way to the expansion of a virtual network, comprising individual criminal entrepreneurs who cooperate together, leading to a more fragmented global criminal environment.[143] The introduction of virtual currencies is likely to reinforce this trend out to 2045. Europe and North America are likely to be increasingly influenced by African organised crime out to 2045.[144]

Illicit trade in wildlife. The illicit global trade in wildlife includes trophy smuggling and illegal hunting and already has a significant impact on security in Africa. Despite a worldwide ban on the trade in ivory, wildlife crime in Africa is increasing at an alarming rate due to:

- a combination of high demand on the black market in Asia;

- continued instability in some states;

- weak African institutions; and

- limited resources to counter it.[145]

143 EUROPOL report, (2015) 'Exploring tomorrow's organised crime', available at https://www.europol.europa.eu/sites/default/files/edi/EuropolReportDigitalCove.html

144 EUROPOL, (2011 and 2013), 'EU Serious and Organised Crime Threat Assessment', available at https://www.europol.europa.eu/content/eu-serious-and-organised-crime-threat-assessment-socta

145 Lawson, K, and Vines, A., (2014), 'Global Impact of the Illegal Wildlife Trade – The costs of crime, insecurity and institutional erosion', 2014.

Wildlife crime fuels conflict by helping to finance non-state actors involved in conflict and it overlaps with other criminal activities such as large-scale corruption, small arms trading and money laundering, all of which further undermine national institutions.[146] Looking forward, the long-term trend in wildlife crime in Africa will be largely dependent on the degree of willingness on the part of the demand countries to cooperate with the supply countries to stop the trade.

Illegal migration. Africa's socio-economic challenges will almost certainly continue to serve as a push factor for migration out to 2045, and Europe is likely to continue to be an important destination for illegal migration due to its geographical proximity and higher levels of prosperity.[147] The majority of illegal migration to Europe is facilitated by criminal networks with a criminal turnover of between three and six billion Euros in 2015.[148] In the future, people smugglers may have access to technologically advanced surveillance/information systems and improved electronic links to active networks within Europe, helping them to operate without interference from law enforcement authorities. On the other hand, legislation against trafficking will almost certainly be in place in some African countries by 2045, which in combination with improved surveillance capabilities may make trafficking more difficult both inside and outside Africa.

Corruption. Corruption remains a significant challenge to eradicating poverty and encouraging investment in Africa.[149] A range of indicators currently suggest an increasing level of corruption in Africa.[150] Institutional weaknesses in many African countries create the conditions for a misuse of power and national resources. Furthermore, the continued decline in living standards of public servants makes corruption more attractive. The presence of weak and ineffective institutions provides the opportunity for external private companies to take advantage. There is also a strong link between organised crime and high-level corruption in Africa. The poor are likely to continue to be disproportionately affected by corruption, contributing to rising inequality and the potential for unrest.[151] Whilst perceptions of corruption in Africa have often centred around petty corruption (for example, using public office for private benefit, generally involving smaller values of money),[152] large-scale corruption and state capture (private sector and/or criminal actors influencing and shaping government institutions for their own benefit), are the major long-term threats to development in Africa.

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146 *Ibid*.

147 EUROPOL, (2016), 'Migrant Smuggling in the EU', available at https://www.europol.europa.eu/content/eu-serious-and-organised-crime-threat-assessment-socta

148 *Ibid*.

149 UN Economic Commission for Africa, (2009), 'African Governance Report II', available at http://www.uneca.org/sites/default/files/PublicationFiles/agr2-english.pdf

150 UN Economic Commission for Africa, (2016), 'African Governance Report IV', available at http://www.uneca.org/publications/african-governance-report-iv

151 DCDC, (2014), 'Global Strategic Trends – out to 2045', page 75.

152 Transparency International report, 'People and Corruption, Africa Survey 2015 – Global Corruption Barometer'. The report estimated that 75 million Africans paid some sort of bribe last year. In South Africa 83% of the respondents believe corruption is getting worse while an African average of 58% had the same opinion.

Illicit financial flows have a significant effect on the African continent. Over the last 50 years, Africa is estimated to have lost more than US $1 trillion in illicit financial flows and today the yearly loss is estimated to be more than US $50 billion per year.[153] The volume of illicit outflows has been particularly large in countries with significant commodity exports. Although large commercial corporations and organised crime groups are identified as the biggest culprits, corrupt African practices and weak state capacity facilitates these outflows.[154] Out to 2045, the illicit outflow of money from Africa is likely to grow, due to greater global connectivity and the increasing value generated by organised crime and large-scale corruption.[155]

Technology and law enforcement. Increasing professionalism of the law enforcement agencies, together with technological factors, is likely to lead to an improvement in law enforcement capabilities in Africa out to 2045. Greater transparency, through technological developments, and increasing pressure from private companies, the media and better-informed citizens, are likely to increase the incentive for governments to act against corruption and crime. Developing a more integrated approach among those actors involved in combating organised crime, as well as greater regional and international cooperation, is likely to improve the ability to share knowledge on complex criminal networks and the flows which they operate, and build the capacity to

disrupt them. International cooperation to control financial flows and seize assets will be important. Local measures to curtail tax avoidance among major corporations are also likely to be more effective over time, and the capacity of legal institutional frameworks and the criminal justice system is expected to increase. There is a general international acceptance that corruption needs to be addressed and that transparency and rule of law are prerequisites for good governance. However, although improvements in governance are likely to lead to positive developments in combating crime out to 2045, organised crime in Africa could adapt and benefit from new opportunities, including forming new alliances. Overall, large-scale corruption and illicit financial flows are likely to remain a major constraint to inclusive economic development in Africa out to 2045.

Private security actors. Although the capacity of many African states is expected to increase, projected increases in crime mean that private security actors are likely to continue to play an important role in crime prevention out to 2045. These actors range from heavily armed mercenaries and major private security companies to traditional chiefs, neighbourhood watches, militias and vigilante groups. In South Africa, for example, the number of private security guards currently outnumbers the police and army combined.[156] Whilst private security actors are likely to play a broadly positive role in improving security, they are also likely to complicate the security

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153 AU/UNECA report, (2015), 'Illicit Financial Flows – Report of the High Level Panel on Illicit Financial Flows from Africa', available at http://www.uneca.org/sites/default/files/PublicationFiles/iff_main_report_26feb_en.pdf

154 *Ibid.*

155 *Ibid.*

156 South African Private Security Industry Regulatory Authority (PSIRA) annual report 2013/14. According to the report the South African security industry employs 487,058 active people while the police employs 194,852 people and the South African National Defence Force consists of 78,707 active people.

Djiboutian coast guards patrol in the port harbour

environment, and some may forge toxic relationships with politicians, criminals and terrorist organisations.

Maritime crime. While international counter-piracy responses have had some success in addressing piracy in the Gulf of Aden and the West Indian Ocean, piracy has recently been on the rise in the Gulf of Guinea and could continue to be a serious issue for Africa out to 2045.[157] In addition to piracy, smuggling (of weapons, drugs and people) is likely to remain a cause for concern; very few African states have the capacity to control their territorial waters. Weak maritime legal frameworks and unclear maritime boundaries add further limitations. However, international support, improved governance and economic growth in a number of coastal states have led to a growing awareness of, and therefore

increased focus on, the maritime environment. A number of states are in the process of procuring equipment such as patrol vessels and it is almost certain that more will follow suit out to 2045. Technology is also likely to enhance states' capacity to police their territorial waters (for example, using remotely piloted aircraft to patrol territorial waters) and cross-border cooperation looks set to increase. However, despite expected improvements the magnitude of Africa's maritime security challenges may dwarf the capacity of most African states. As a result, piracy, smuggling and other criminal maritime activities are likely to remain serious issues out to 2045. The flow of small arms, much of which moves into Africa by sea, is also likely to remain a particularly significant challenge across Africa out to 2045.

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157 Ukeje, C. and Mvomo Ela, W. (2013), 'African Approaches to Maritime Security – the Gulf of Guinea'.

🌍 Africa on the international stage

Africa is becoming increasingly integrated with the rest of the world. Having remained semi-detached from an increasingly interlinked global system over the past five decades, this is changing rapidly and the continent will become increasingly integrated into global matters over the next 30 years. This is partly due to growing self-confidence and levels of development, both of which encourage a more outward-looking role. However, it also reflects the growing importance of Africa, whether due to its raw resources (mineral, agricultural and human – actual as well as potential) or its voice on the global stage within international organisations and religious movements. These factors are causing Africa to be viewed in a different light by the rest of the world, which perceives it as the next frontier market for investment, and as a potential ally in international debates. Whilst crises will continue to occur on the continent, Africa will decreasingly be seen through the lens of aid.

Location. Africa's location is of key strategic importance on global trade routes. The majority of trade between Europe and Asia flows through the Suez Canal, while South Africa dominates the alternative route through the Southern Ocean. The significance of the Indian Ocean is already growing, and ports on Africa's eastern coast are likely to be of growing relevance as trade with Asia and the Middle East increases. Similarly, ports on Africa's western coast are likely to become more important as trade with South America increases. An effect of this has already been demonstrated with the creation of the India, Brazil, South Africa (IBSA) Dialogue Forum in 2003, an innovative South-South grouping, which may well strengthen in the coming years.

Resources. Although the importance of Africa's natural resources may have been overstated in the past, other parts of the world are now finding it increasingly difficult to provide enough resources to meet global demand. For example, Rio Tinto production at Pilbara in Australia (its flagship enterprise for iron ore) appears to indicate completion before 2030 when cross-referenced against its declared deposits.[158] Therefore, whilst Africa's recent growth and development has both supported and been driven by improving security and the redevelopment of old infrastructure, particularly railways, it has been the advent of external support keen to access African resources which has provided the momentum, and which will continue to grow. This is not confined to minerals; there is increasing external interest in land for greater agricultural

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158 Rio Tinto, (2015), 'Fourth quarter operations review', available at www.riotinto.com/documents/150120_RT_fourth_quarter_operations_review.pdf; and Rio Tinto, (2015), 'Increase to Pilbara ore reserves and mineral resources', available at www.riotinto.com/media/media-releases-237_14567.aspx

The India, Brazil, South Africa Dialogue Forum

The India, Brazil, South Africa (IBSA) Dialogue Forum started as a dialogue forum, and has swiftly improved economic integration between the three member states, increasing trade between them from four to 30 billion dollars in the first ten years of its existence.[158] However, it is likely to become increasingly significant as an arrangement for security provision and sharing technology between these three increasingly powerful countries. As such it could be the first of several meaningful regional organisations – in its own case, especially for security around the Indian and South Atlantic Oceans. It has held annual naval exercises since 2014 (IBSAMAR), some of which have been conducted in deep water using submarines and supply ships alongside other vessels. The IBSA members are also playing an increasingly significant role in supporting peacekeeping operations.[159]

production. Africa will also continue to have a burgeoning youth population as much of the rest of the world ages, which investors may find attractive for employment both overseas and on the continent.

Markets. Until very recently Africa, even as a whole, constituted a very small part of world trade. Its poor infrastructure has made it difficult for the continent to achieve economies of scale. This is perhaps best demonstrated by the low levels of internal African trade at present.[161] However, that reality, and perception, has begun to change quite rapidly as the stability of much of Africa improves and the development of

infrastructure takes shape. Furthermore Africa is perceived as being the last great region of the world to develop; as a result, financial markets, particularly private equity companies, are looking for opportunities to invest early to benefit from that development when it comes. For example, Helios Investment Partners, founded in 2004, now has more than US $3 billion in capital commitments across Africa.[162] This is providing impetus for investment in both international and indigenous companies, which are seeking to develop local markets as well as export resources. The risk is that this influx of money will overheat various markets, and its withdrawal could have immediate negative effects, as has been seen elsewhere in the world. However, whilst there will be bumps, the overall effect is likely to be hugely positive.

Political. In an increasingly multi-polar world, many countries are seeking to strengthen their links with Africa. Western and Chinese relationships with Africa are

159 Kurtz-Phelan, D., Quarterly Americas, (2013), 'What is IBSA anyway?', available at http://www.americasquarterly.org/content/what-ibsa-anyway

160 US NIC, (2012), 'Global Trends 2030: Alternative worlds', available at https://cgsr.llnl.gov/content/assets/docs/Global_Trends_2030-NIC-US-Dec12.pdf

161 The Economist. (2013), 'Intra-African trade: The road less travelled', available at http://www.economist.com/blogs/baobab/2013/04/intra-african-trade

162 Helios Investment Partners, www.heliosinvestment.com

well documented. However, the quiet competition between the United Arab Emirates (UAE), Qatar and Turkey in the Horn of Africa, and increasingly important trading relationships between India, Brazil and African countries, may indicate an increasingly complex future of multiple, often competing, relationships at the national level.

African influence. Over the next 30 years it is likely that African countries will become increasingly engaged in global matters, and as a result will gain greater influence on the world stage, particularly in partnership with others. For example, dissatisfaction with the (perceived) hegemonic control of the world's leading economies (and the West in particular) over international institutions, such as the UN Security Council, the World Bank and the International Monetary Fund, has led to the formation of alternative structures such as the Group of 20 (G20) and BRICS (Brazil, Russia, India, China and South Africa), including the New Development Bank. In this context, African states are likely to be perceived as key actors, not least because they make up over 25% of the UN General Assembly. As a result, their support is likely to be of increasing importance out to 2045. However, Africa is unlikely to be sufficiently united to be a global power in its own right, since it is currently difficult to see the countries routinely working as a bloc.

Threats to the rest of the world. Until recently, few, if any, global threats were perceived to emanate from Africa. This will probably remain the case in terms of state threats, although individual countries could make maritime movement in their territorial waters difficult if they feel ignored or slighted. The larger threat comes in terms of non-state actors and other, less obvious concerns to international security in the wider sense.

German Chancellor Angela Merkel and South African President Jacob Zuma at a press conference after a meeting in the Federal Chancellery in Berlin

The main threats from non-state actors currently appear to come from crime and Islamist extremism, and these remain most likely to endure in the foreseeable future. Al Shabaab in Somalia has already demonstrated the threat that radical Islam represents to the international community. Having begun life as an organisation trying to take control of a country, partly to create a secure base from which its global jihadists could operate, its defeat in Mogadishu makes this look less likely – and is probably the key factor which has led to more overseas terrorist activity. At the same time, Boko Haram appears unlikely to have genuine aspirations to take control of Nigeria, but instead seems to want to set up its own transnational state ignoring modern-day borders and, like al Shabaab, appears to promote global jihad, as does al Qaeda in Maghreb (AQIM) and other Islamic groups in Africa. Further west, South American drug cartels are believed to have helped to create a short-lived narco-state in Guinea-Bissau. Although this has now largely been dismantled, using Africa for criminal activities based elsewhere in the world (whether drugs, financial scams or smuggling of resources such as uranium, which is found in some central and southern countries of Africa) is likely to escalate as links become better.

Africa is the source of several extremely infectious diseases, for example, Ebola, which will continue to keep international organisations engaged out to 2045. The level of threats of global pandemics is interlinked with the movement of people. Migration within Africa by those pursuing opportunities is commonplace, and is now spreading outwards across the world. Out to 2045, migration figures
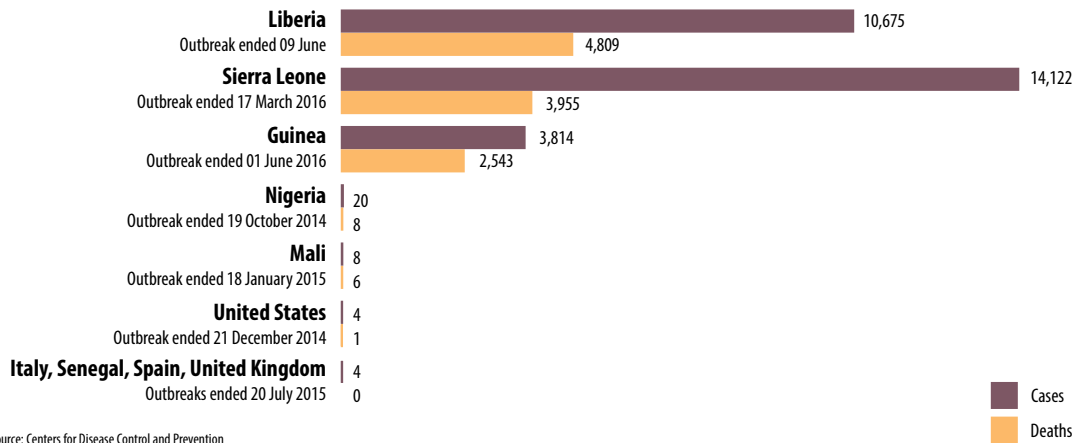

A sign warning visitors that the area is Ebola infected in Makoua, Congo

Sergey Uryadnikov / Shutterstock.com

are likely to swell as growing numbers of Africans become better educated, more aware of better economic opportunities overseas, and increasingly have the financial resources to make the move – legally or otherwise.

Map showing outbreaks of Ebola globally

	Cases	Deaths
Liberia Outbreak ended 09 June	10,675	4,809
Sierra Leone Outbreak ended 17 March 2016	14,122	3,955
Guinea Outbreak ended 01 June 2016	3,814	2,543
Nigeria Outbreak ended 19 October 2014	20	8
Mali Outbreak ended 18 January 2015	8	6
United States Outbreak ended 21 December 2014	4	1
Italy, Senegal, Spain, United Kingdom Outbreaks ended 20 July 2015	4	0
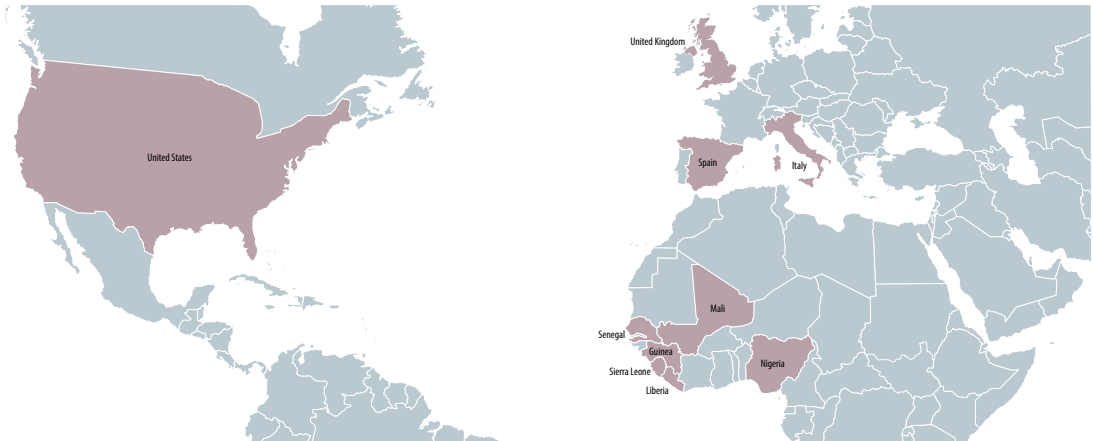
Source: Centers for Disease Control and Prevention

🎭 External actors in Africa

Outside the UN, individual state actors are likely to remain the key external actors operating in, and with, African countries. However, international organisations or alliances, commercial companies and individuals will have an increasing influence over the next 30 years, whilst global events generally will also have a greater effect than in the past as Africa becomes more integrated at the global level.

Countries. The United States, France and the UK are likely to remain key influences in Africa, but will be joined by others. Traditional colonial powers often see their past territories as both a responsibility and an opportunity – the former, partly due to their liberal democratic principles, but also due to the presence of various pressure groups on their territory, including the African diaspora. As Africa develops, it is likely that this line of thinking will reduce and be replaced by increasing interest in the opportunities that many former colonial powers have always recognised in countries where the main language and legal system is often their own. To some extent, this is driving the argument for 'trade not aid', along with the realisation that economic growth is more likely to achieve long-term results than simple aid. Nevertheless, whilst of lessening importance, external aid will remain one of the key components of financial support to a number of African countries for the foreseeable future.

Engagement by new actors on the African continent is largely the result of economic drivers. Larger developing countries, such as China, India and Brazil, are increasingly engaging in Africa; this interest is mainly economically driven due to an underlying need for resources. Chinese engagement is often perceived as being state-led; however, there are also a considerable number of companies and individuals operating independently, often at the lowest levels; for example, individuals selling Chinese medicines in the local markets. Other countries' agendas are even less centrally driven. For example, companies in India, whose economic links with Africa are growing rapidly, often make use of the presence of ethnic Indian communities in Africa, which have been key members of the business community in East and Southern Africa for close to a hundred years. Whilst there may be increasing political overtones, their primary motivations, whether state, company or individual, are likely to remain economic in the medium term.

In contrast, other actors are driven by more political aims. A good example of this is the engagement of Qatar and the UAE, who appear to be competing for influence in the Horn of Africa. For example, Qatar has invested in Eritrea, whilst Dubai is building a large container port in Djibouti, and al Jazeera (Qatari-owned) has a very large following

in the region. Whilst these investments all have an economic aspect, the primary aim appears to be to create areas of influence at the political level. Similarly, Turkey is also building its interests across the continent, particularly in areas where there is a Muslim majority, taking both an economic and political approach.

Multinational companies. Multinational companies, particularly those engaged in the extractive industries, have operated in Africa for decades. Oil companies have often been closely linked to home governments but mining companies have been more independent. It is claimed that companies in both sectors have funded rebellions and/or authoritarian governments on occasion; however, as governance in Africa improves, there will be fewer opportunities for this sort of behaviour. Notwithstanding this, the engagement of multinational companies with African governments is likely to continue as they seek to develop strategic reserves of chosen commodities.

Projects in Africa can be on a vast scale with the potential to hugely influence the future shape and development of the continent. The infrastructure required to develop a large mine can lead to large-scale population movement for both employment in the project itself and to use the new opportunities afforded by this infrastructure. For example, the Rio Tinto-planned Simandou iron ore project in Guinea includes a new 650 kilometre-long railway and a port, both of which will be available for use by third parties.[163] The routes chosen therefore have major political implications, which in turn could lead to political divisions within countries and

with their neighbours. Equally, resource development programmes may lead to better cooperation if properly run. It is highly likely that most big transnational infrastructure projects will stem from these large-scale resource development programmes. One way or another, therefore, these projects are likely to have a major effect on the continent over the next 30 years.

However, international interest is not just in commodities – investors are increasingly seeing opportunity in other African business sectors. For example, over 50% of Chinese foreign direct investment in Africa in 2013 was in non-commodity industries including financial services, construction and manufacturing.[164] International service industry companies are becoming increasingly engaged as African economies become increasingly diversified. For most of these companies, stability and predictability is vital. Furthermore, they need internationally accepted commercial legislation to achieve further integration into the global market. As a result, they will increasingly exert pressure for better governance to ensure that this does not prevent economic growth. This again indicates the key influence of economic drivers on wider social and political development over the next 30 years.

Diaspora. It would appear that the strong political pan-Africanism championed in the past by the diaspora has today given way to a focus by individuals on their countries of origin. More specifically, this focus is on their socio-economic progress, and how

163 Rio Tinto. (2016), 'About Simandou', available at http://www.riotinto.com/guinea/about-simandou-10974.aspx

164 The World Bank, (2015), 'Africa Still Poised to Become the Next Great Investment Destination', available at http://www.worldbank.org/en/news/opinion/2015/06/30/africa-still-poised-to-become-the-next-great-investment-destination

Participants at the Eritrea vigil in London on 17 May 2011 protesting against the Eritrean government's religious policies and denouncing 10 years of brutal clampdown on Christians

that affects their own families. This is partly because the African diaspora, now estimated at over 30 million people worldwide, of which one third are middle class, has become more settled and established, earning more money which can now be used to make remittance payments.[165] However, it also reflects the fact that Africa itself has developed, particularly in security terms, providing excellent opportunities for investment. All of this has been facilitated by improvements in communications systems, which allow the diaspora to keep in touch with their families on a day-to-day basis, and visit relatively quickly and cheaply. As a result, the benefits provided by the diaspora, currently estimated at US $65 billion, are set to increase further, with an increasingly mobile middle class moving between countries. Indeed it is probable that the diaspora will become the most important 'external actor' in Africa over the next 30 years.

The diaspora is also playing an important role in host countries. First, it can act as a powerful lobbying tool for its home country, both actively and by explaining its culture and position on some issues which may appear alien to the host nation's population. It also acts as an important channel of communication to facilitate trade between countries; this seems to be an increasingly important factor in China.

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165 Speakman, J. and Agaba, D., The World Bank, (2015), 'The Trade Post. Connecting the dots: engaging the African diaspora in trade, investment, and skills transfer for Africa's development', http://blogs.worldbank.org/trade/connecting-dots-engaging-african-diaspora-trade-investment-and-skills-transfer-africa-s-development

However, there are also negative aspects to diaspora engagement. For example, some of the trade facilitated is illegal, with drug smuggling in particular reportedly growing. Equally, some of the diaspora remain wedded to the past, and can obstruct progress by preventing compromises. This can be particularly important in unstable countries, where the diaspora can have a far larger effect. For example, some elements of the Somali diaspora remain tied to clan affiliations which they reinforce, in contrast to those on the ground who have reached the point of accepting the need for change. In general, though, this appears to be of limited effect when balanced against the positive aspects of diaspora activity on a continent-wide basis.
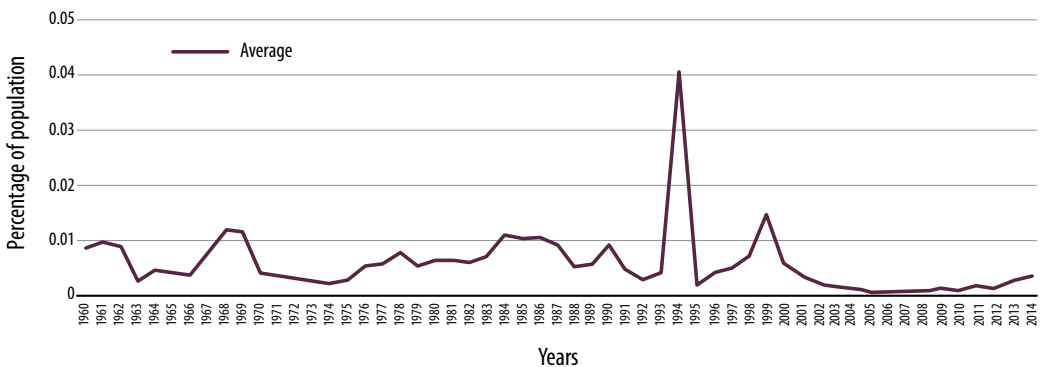
◎ **Conflict**

Levels of violence. Although criminal violence is likely to kill more Africans than military conflict out to 2045, armed conflict appears to be increasing in the short term in spite of many countries achieving strong economic growth for over a decade. More than half of African states are still 'fragile' due to weak governance combined with extensive poverty, inequality and social, economic and political exclusion, including high levels of youth unemployment and violence.[166] State fragility will remain a driver for instability and violence in Africa throughout the next 30 years. North Africa, the Sahel, the Horn of Africa and the Great Lakes Region, in particular, are likely to retain a degree of instability out to 2045.[167]

While armed conflict in Africa has followed the general global decline (if measured in relation to population size), there has been an increase in the level of armed violence since 2010 (mainly due to spill-over effects from instability in North

Number of deaths due to conflict in Africa

Source: The World Bank, Uppsala Conflict Data Program, Peace Research Institute Oslo, Armed Conflict Location and Event Data

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166 Cilliers, J. and Sisk, T., ISS Monograph Number 188, (2013), 'Assessing long term state fragility in Africa: Prospects for Africa's 26 'more fragile' countries', available at https://www.issafrica.org/uploads/Monograph188.pdf
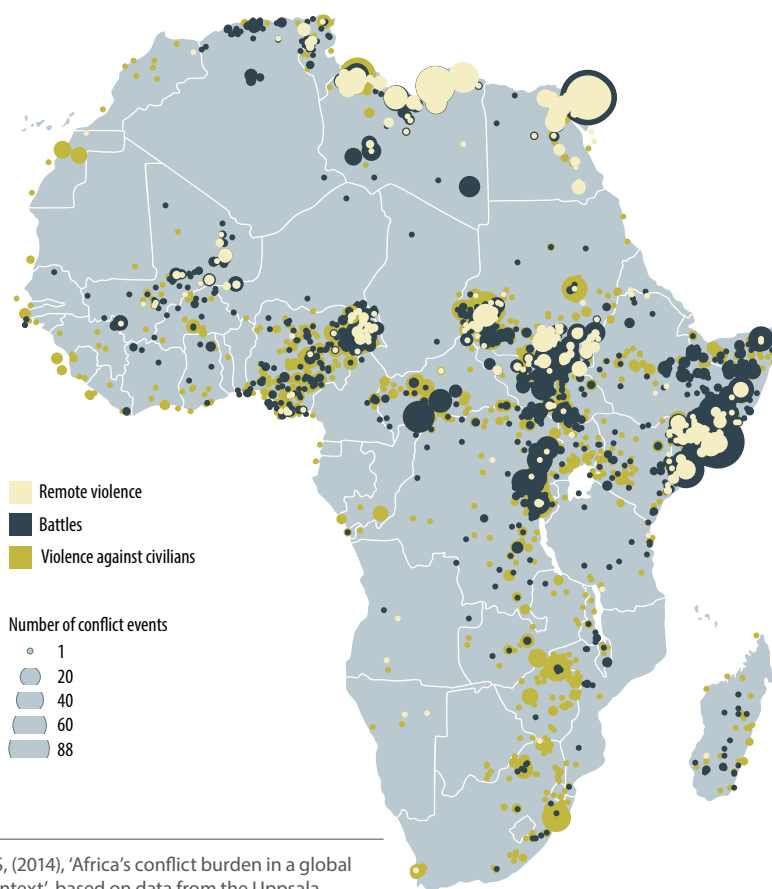
167 *Ibid.*

Africa and the Middle East) and this may continue before reducing out to 2045.[168]

The majority of conflicts are likely to be non-state or intra-state – particularly in areas where governance is weak or where the state is expanding its influence into areas that previously had a degree of autonomy. Conflicts are likely to involve a number of non-state actors fighting one another, and have cross-border dimensions and thus a wider regional impact.[169] Such conflicts are, however, likely to be of a smaller scale than those which occurred during the Cold War and the following decade, and in the future the majority of violent deaths in Africa are likely to be due to criminal activity rather than political violence.[170]

Geographical representation of violence across Africa

Remote violence

Battles

Violence against civilians

Number of conflict events
- 1
- 20
- 40
- 60
- 88

Source: Heidelberg Institute for International Conflict Research

168 ISS, (2014), 'Africa's conflict burden in a global context', based on data from the Uppsala Conflict Data Program (UCDP), reports from Global Burden of Armed Violence (GBAV), the Heidelberg Conflict Barometer, the Political Instability Task Force (PITF), the Armed Conflict Location and Event Data Project (ACLED) and the National Consortium for Study of Terrorism and Responses to Terrorism (START). Note that 75% of the current conflict related fatalities in Africa takes place in five countries: Nigeria, South Sudan, Sudan, CAR and Somalia.

169 ISS, (2013), 'Future of intrastate conflict in Africa'. Also see, DIIS Report 2015:1 'Insights from Eastern Africa and Sahel – Protection and (in) security beyond the state'.

170 ISS, (2011), 'African Futures 2050', available at https://www.issafrica.org/publications/monographs/african-futures-2050

A Kenyan riot police officer carries a baby during a protest

However, although criminality will probably continue to be the major cause of violent death, political violence (particularly terrorism) is likely to remain the focus of international attention out to 2045.[171] In the long term, economic growth on the African continent is likely to reduce the number of fragile states and increase state capacity to respond to security challenges.

The potential for international conflict between African states will not disappear out to 2045, and may even increase. The move towards democracy, combined with increasingly capable armed forces, could see a rise in the incidence of international conflict on the continent. First, a growing sense of nationalism might be exploited by unscrupulous political leaders as an excuse for conflict. Second, as armed forces become more capable, leaders may be more tempted

to use them as means of 'settling' disputes – particularly as a number of unresolved border disputes remain across the continent. As populations increase and the effects of climate change are more keenly felt, conflict over territory and resources is also likely to rise – see map below. However, the growing effectiveness of African security structures, as well as external pressures, suggests that the likelihood of international armed conflict in Africa should reduce overall out to 2045.

Criminal violence. The character of violence in most African countries is expected to shift from 'militarised' to 'criminalised' out to 2045.[172] Although trends in violent crime vary significantly across the continent, poverty is likely to remain a driver for high levels of crime out to 2045 when combined with rapid population growth, increasing

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171 *Ibid.*

172 *Ibid.*

In Nigeria over the past 30 years, thousands have died during race riots, which were often sparked by religion, resulting in northern and southern minorities being killed in different parts of the country. Nigeria has recently become more sharply divided with increasingly harsh Sharia law adopted in much of the north. By contrast, the Christian south has become increasingly geared towards evangelical churches. In all cases, ethnicity appears to be tied into the issue. Boko Haram in north eastern Nigeria has added another layer of complexity, professing itself to be Salafist with links to global jihad, showing intolerance towards the Muslim communities within which it exists, including those in Niger, Chad and Cameroon.

income inequality, high levels of youth unemployment and weak justice and law enforcement systems. With 31% of all intentional homicides occurring in Africa (Southern Africa having the highest homicide rates, at four times higher than the global average), violent crime is already the most significant threat to personal security for many Africans.[173] While the overall trend in global homicide is a decreasing one, the current trend in Africa is one of sharp increase.[174] The persistence of small arms flows into and around Africa contributes to the high levels of violent crime.[175] The connection between violent crime and alcohol abuse is also significant in sub-Saharan Africa.[176] Enduring instability in the Middle East and North Africa is likely to be a major source for continued small arms flows into Africa, although the importance of external arms dealers should not be underestimated.

173 UN Office on Drugs and Crime, Global Study on Homicide, 2013, available at https://www.unodc.org/documents/gsh/pdfs/2014_GLOBAL_HOMICIDE_BOOK_web.pdf

174 Ibid.

175 Ibid., 28% of all homicides in Africa were carried out by fire arms 2012 according to UNODOC.

176 WHO Policy Briefing, (2013), 'Interpersonal violence and alcohol', available at http://www.who.int/violence_injury_prevention/violence/world_report/factsheets/pb_violencealcohol.pdf

Motivations for violence. A number of contributory factors have acted as drivers of violent conflict on the African continent over past decades, and to a greater or lesser extent are likely to continue to exert an influence in the future.

Control of resources. Control of commodities has historically been particularly linked to political power in Africa, and this dynamic is likely to continue out to 2045. The pursuit of power and resources is often the key driving force behind local security dynamics; it drives political instability, including forceful power grabs such as military coups. Deliberate destabilisation by both African and external actors to obtain control over resources is also a driver for conflict on the continent, particularly in fragile states. Whilst improvements in the governance of extractive industries should reduce conflict over resources, the use of violence to acquire control of them cannot be ruled out.

Inequality. Out to 2045, millions of Africans are likely to remain trapped in varying degrees of poverty. Whilst poverty alone is not usually a driver for conflict, it can become a source of grievance when combined with

inequality, which can lead to conflict.[177] Perceptions of inequality, in particular discrimination, are highlighted in most conflict research as the single most important motivating factor.[178] A key problem in Africa is that economic growth has often only benefited a few, to the exclusion of others. In fact, income inequality tends to increase significantly in those developing countries with rapidly growing economies. South Africa, for example, has the highest (official) GDP in sub-Saharan Africa but also the highest levels of inequality – and the highest murder rates.

Governance and power transitions.
Political transitions and changes in governance are likely to be a feature of many African countries out to 2045. Some power transitions – such as the overthrow of long-standing authoritarian regimes – will be of great political significance, and could be instrumental in shaping a country's future. In the short term, there may be a risk of a power vacuum, potentially resulting in further instability, and some countries will require external support during the transition period. Ultimately, the effects of political transition and reform may not be evident for many years, and it is unlikely that all attempts will be successful in the long term. In a number of cases, transition will be punctuated by periods of instability (including conflict), which may continue for several decades.

Ethnicity. Events such as the conflicts in Darfur and Côte d'Ivoire, the Rwandan

genocide, and the aftermath of the elections in Kenya can drive a perception that conflict in Africa is often due to ethnic violence. However, there is little evidence that ethnicity itself is a driver of conflict. Instead, unscrupulous political leaders exploit existing grievances (for example, over access to land) and use ethnicity to mobilise supporters to further their pursuit of power.[179] Democratic states with strategies for building national identity and/or promotion of inclusive diversity have been shown to be less prone to such politicised violence.[180] While ethnicity is likely to continue to constitute an important element of identity in Africa out to 2045, most ethnic groups have coexisted peacefully to date and are expected to continue to do so in the future, with a high degree of intermarriage, economic partnerships and shared values – trends likely to be enhanced by increasing urbanisation out to 2045.

Religious conflict. Out to 2045, the risk of religious strife, and possibly warfare, in Africa appears likely to rise. Al Shabaab has taken a hard line against Sufis in Somalia and has described soldiers in the AU Mission in Somalia (AMISOM) as 'Crusaders', despite some of them also being Muslim. At the same time, Christian evangelists have stirred up trouble against Muslim communities in other parts of Africa. It is likely that the next 30 years will see an increase in interdenominational struggle within both Muslim and Christian communities, as well as some conflict between adherents of the two religions in countries which have mixed populations. However, in some cases this fighting will be a reflection of local grievances as much as religion. For example, the

177 Cilliers, J. and Hedden, S., ISS, (2014), 'Africa's Current and Future Stability'. Cilliers, J., (2014), 'Africa's Conflict Burden in a Global Context'. Cilliers, J. and Schunemann, J., (2013), 'The Future of Intra State Conflict in Africa'.

178 Wagner, M., (2013), 'Inequality Matters – Prospects and Perspectives on Africa's Disparities'.

179 Aapengnou, C. M., (2010), 'Misinterpreting Ethnic Conflicts in Africa'.

180 *Ibid.*, Ghana and Tanzania are good examples.

Protests following the capture of 276 schoolgirls in Nigeria by the terrorist group Boko Haram

fighting in Côte d'Ivoire in the 2000s, whilst sometimes characterised as being between the Muslim north and Christian south, was more to do with migration and nationality tied to economic factors.

Terrorism. Whilst the Middle East is likely to remain the region most afflicted by terrorism out to 2045, Islamic extremist groups are likely to continue to pose a threat in Africa. African-based terror groups (including al Shabaab, Boko Haram, Ansar al-Dine, and al Qaeda in the Islamic Maghreb) are likely to continue to target Western interests and other external actors, as well as African governments. Although it is impossible to calculate the exact number of new recruits to Daesh from North Africa, their likely return poses a potentially severe and long-term threat to regional governments. Extremists could establish a stronghold where state fragility allows; for example, in Libya, which would also have a destabilising effect

on neighbouring countries. Expected improvements in communication technology (and ease of transport) could strengthen links between extremists in Africa, Europe and the Middle East out to 2045, which would make tackling these groups more complicated. The emergence of an extremist Islamist Caliphate in Africa is therefore possible – although the diverse character of African extremist movements, often with specific local agendas, makes the possibility of establishing a unified African Caliphate unlikely.

As well as strengthening links between terror groups, there is also some evidence to indicate that these groups are forging links with transnational crime networks.[181] Like all organisations, terror groups need funding and those that control territory

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181 Shaw, M. and Reitano, T., ISS, (2013), 'The Evolution of Organised Crime in Africa: Towards a New Response'.

will need large sums of money to support their governing structures.[182] Whilst extremists and organised crime tend to have different agendas and objectives, which make cooperation difficult, global interconnectivity is likely to facilitate financial flows between supporters and criminal groups, potentially making them an integrated part of the terrorist economy. Nevertheless, despite the threat from terrorism, many (probably most) governments' capacity to control their territory and deal with the threat from terror groups is likely to improve over the next 30 years.

Military capabilities. The character and capability of Africa's armed forces vary considerably across the continent. While some countries have well-trained soldiers with modern equipment, others are less capable. In the recent past, security forces were often used by rulers to maintain their hold on power, focusing on internal population control rather than on securing the nation's territory and interests. Even today only a few states in Africa have security services which are widely regarded as legitimate and professional by the local population.[183] Out to 2045, however, many (perhaps most) African militaries and gendarmerie (more heavily armed police) are likely to see significant improvements in terms of both their capability and professionalism. Many African states are procuring increasingly capable communication and surveillance systems, investing in more efficient logistics, improving command

and control capability and increasing their manoeuvrability. A number of recent African military operations have demonstrated the improved capabilities of African armed forces. For example, Ugandan logistics facilitated the conduct and sustainment of operations in South Sudan, whilst soldiers from the Economic Community of West African States (ECOWAS) deployed to Mali without external assistance; a decade ago this might not have been possible. Furthermore, a number of states are also procuring maritime offshore patrol vehicles and unmanned systems which are likely to be readily available in the future for a number of tasks in support of both military operations and more general security requirements.

Out to 2045, the armed forces of many African states are likely to become smaller, but also more professional. Security sector reform programmes are also likely to increase civilian control over the armed forces. Taken together, these two factors should increase the support for, and legitimacy of, the armed forces in the eyes of the civilian population. However, the armed forces of many African countries are likely to remain closely linked to political power. Those countries facing insurgencies and terrorism may see the armed forces become increasingly involved in politics.[184] Indeed, foreign government support for counter-terrorism programmes on the African continent may reinforce this phenomenon.

African peace support operations. African peace support operations have developed considerably over the last decade and are likely to continue to

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182 Alda, E. and Sala, J., Stability: International Journal of Security and Development. Volume 3, Number 1, (2014), 'Links Between Terrorism, Organized Crime and Crime: The Case of the Sahel Region'.

183 For example, the armed forces of Botswana and Morocco have wide popular recognition for their professionalism. Discussions during DCDC engagement in Southern Africa, March 2016.
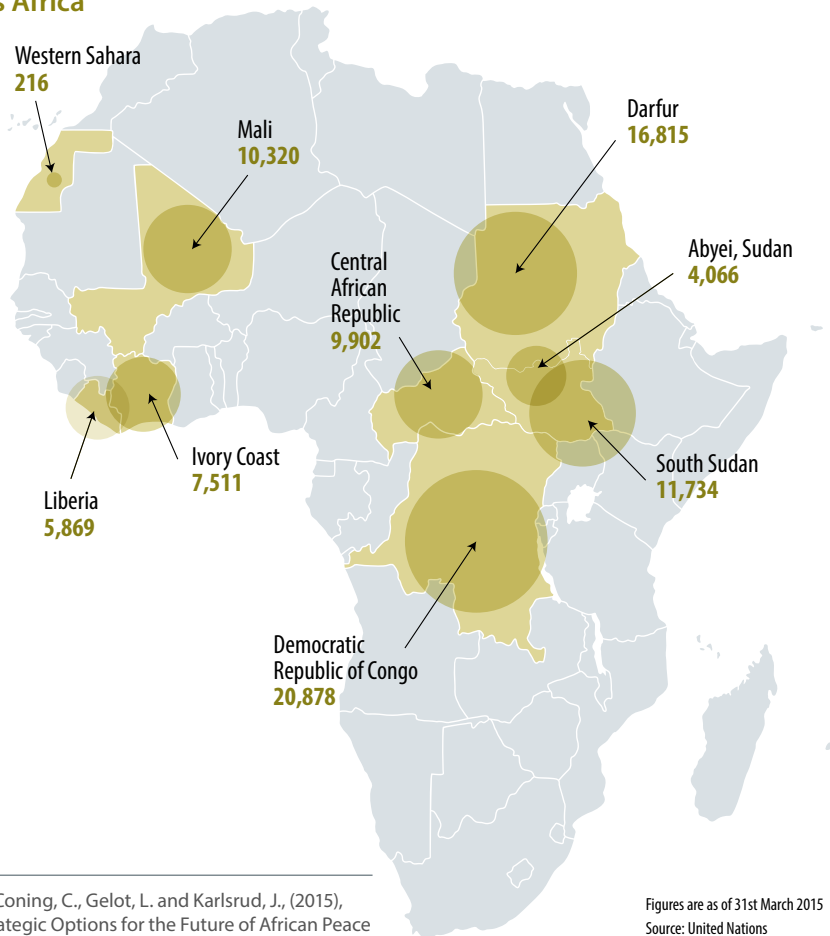
184 Fisher, J. and Anderson, D., International Affairs, Volume 91, Number 1, (2015), 'Authoritarianism and the Securitization of Development in Africa', page 134.

do so out to 2045.[185] Regional African institutional capacity and frameworks continue to develop, and the number of African troops taking part in operations has steadily increased. An important development in these operations, in future, is likely to be the increasing use of police and gendarmerie in African peace support operations, together with a greater understanding of the importance of the civilian contribution more generally.

United Nations. UN peacekeeping in Africa has continued to grow since its inception (nine of the current 16 UN peacekeeping missions are based in Africa), but it now focuses on the more remote parts of the continent. Whilst the number and proportion of missions have only varied slightly over the last ten years, the proportion of the manpower and cost dedicated to African missions has been increasing and in 2015 accounted for approximately 84% of both UN manpower deployed on operations (126,000 personnel) and the budget (US $8.27 billion). When the AU missions are added to that number (the mission in Somalia alone has 22,000 troops), it is credible that the demands of such missions in Africa will increase significantly out to 2045.

Size of peacekeeping missions across Africa

Western Sahara
216

Mali
10,320

Darfur
16,815

Central African Republic
9,902

Abyei, Sudan
4,066

Ivory Coast
7,511

South Sudan
11,734

Liberia
5,869

Democratic Republic of Congo
20,878

Figures are as of 31st March 2015
Source: United Nations

185 de Coning, C., Gelot, L. and Karlsrud, J., (2015),
     'Strategic Options for the Future of African Peace
     Operations 2015-2025'.

As the capabilities of African states increase, however, and standards of governance improve (as expected), it is likely that the number and size of UN deployments will diminish over the next 30 years – although conflicts could still break out, and there are enduring border disputes between many states which could result in state-on-state conflict.

Even with a reduction in the need for UN peace support operations, the UN will almost certainly continue to be a major actor in Africa out to 2045, in economic, development and political issues as well as security operations. Asian states, together with African ones, are likely to remain important troop contributors, with China likely to increase its contribution. Europe is still likely to support UN operations, but probably through providing funds and specialist support, rather than large-scale troop contributions. Cooperation between the UN and the various African security structures will remain important and is likely to continue to evolve out to 2045. Additionally, as African states grow stronger they are likely to work together, without outside support, to resolve an increasing number of security issues.

The African Union. Although the UN is likely to remain engaged in Africa out to 2045 it seems likely that the AU will become a more important actor going forward. The AU has developed the Africa Peace Support Architecture (APSA), which plans for each of five regions to have a brigade on standby, to be deployed at short notice. This is being supplemented by a more assertive approach as demonstrated by the AU mission in Darfur (AMIS), which has since been replaced by a hybrid UN/AU mission (UNAMID), and AMISOM in Somalia. Uganda and other states have turned operations against the Lord's Resistance Army (a terrorist organisation) into an AU mission. However, it should be noted that these AU missions have normally required UN or other logistic support, and it is unlikely that this will change in the next 10-20 years due to the complexity and cost of such operations. The overall trend is for other agencies to engage initially when quick, high-risk action is required and there is an actual 'enemy' to defeat, and then for these organisations to be replaced by a UN mission. This has been seen most recently in Mali and in the Central African Republic, where France initially took a significant role with large-scale support from African regional organisations. Although these operations subsequently became AU/regional missions before morphing into UN missions, the AU, regional bodies and countries accepted the authority of the UN throughout, normally through UN Security Council Resolutions. This gives the UN a moral authority above anything any other external agency can offer, and this is likely to continue over the next 30 years. Nevertheless, it remains a fact that African regional organisations are likely to play a vital role in preventing intra-state conflict in future. The AU in particular appears to be increasingly effective and is likely to play a vital role in maintaining peace and stability out to 2045.
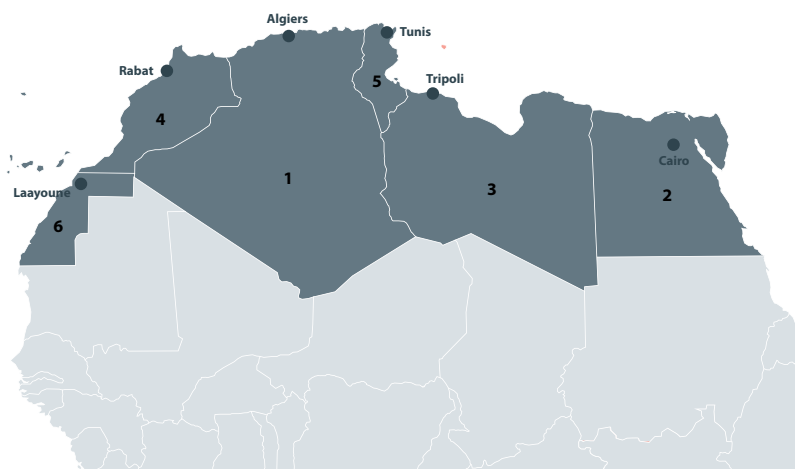
Part 2 – Regions

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5 Tunisia
6 Western Sahara

North Africa comprises Algeria, Egypt, Libya, Morocco, Tunisia and Western Sahara. The region is more closely connected to the Middle East in many ways, including both culturally and linguistically, with the Sahara acting as a greater natural barrier than the Mediterranean. As a result it is far more integrated with other parts of the world than sub-Saharan Africa, although Egypt may be more focused on the Nile valley than the north coast. The region is also generally at a higher level of socio-economic development than the remainder of Africa, although its political development has not made similar progress. This has led to unrest in recent years, which has already led to the fall of some leaders. Serious unrest is likely to continue in the near to medium future across the region, until institutions are put in place which create genuine capacity for state institutions rather than the individual who occupies power. This should allow the systems themselves to change and develop over the next 30 years, although progress is likely to be uneven. However, those countries that succeed are likely to

develop quickly, aided by their proximity to the Mediterranean. Economic development in the north should lead to the development of better routes and connections along the Nile and across the Sahara, which in turn will provide the potential for greater development in the Sahel. This, combined with the possibility of further long-term problems in the Middle East, may lead to increasing ties with the remainder of Africa, and North Africa playing an increasing role on the continent over the next 30 years. Egypt's internal problems, potentially tied to water security, may lead to greater engagement with its neighbours in the Nile basin as it strives to protect its interests concerning Nile waters.

Environment. The North African region is hot and dry and experiences high levels of water stress; climate projections show a trend of warming and drying across the region. Although the temperature on the warmest days of the year is expected to increase everywhere across the continent, larger increases are projected in the northern and inland southern

Emanuele Mazzoni Photo / Shutterstock.com

parts of Africa, which would contribute to the drought situation. These changes, combined with projected increases in population, could lead to further drought and potentially exacerbate existing water stress in North Africa. Coastal populations in Western Sahara are also projected to be affected by coastal flooding due to sea level rise.

North Africa has made good progress towards the Millennium Development Goal (MDG), set by the United Nations (UN), on access to water.[186] Most of North Africa has access to clean water (92%) and was on track to meet its MDG targets, contrasting hugely with sub-Saharan Africa which was off-target.[187] Egypt, however, already uses every drop of its water resource (cited as President Sisi's Achilles heel). [188] Impacts on the Nile delta from climate change could lead to either conflict or cooperation with neighbouring countries out to 2045.

Demographics. North Africa currently accounts for about 6% of the global population, with an average annual growth rate of 1.7%.[189] However, population growth will be slower than that expected in sub-Saharan Africa, and the average age will increase compared to that in the south of the continent.[190] People of working age are likely to form the largest section of the population; however, figures have shown that working-age youths in North Africa were nearly three and a half times more likely to be unemployed than adults.[191] There will be a potential move out of the cities by the rich as inequality deepens. An example of this is in Cairo, which is expected to have over ten million inhabitants by 2045. The majority of African migration is likely to remain inside the continent as more developed countries continue to receive migration, evident in a number of North African states. Many will be in search of work and not necessarily looking for passage to Europe. North Africa is likely to continue to be a migrant destination, transit area and source of economic migrants. Migration will also continue to Europe and North America, but also Asia and Latin America. This can bring positive outcomes, with migrants helping to establish partnerships between their country of residence and country of origin by connecting cities and promoting co-development, as shown by the partnership between Lyon and Rabat.[192] Much migration is to the Middle East and this is likely to continue. However, many return after a few years,[193] potentially impacting on security in North Africa.

Human development. While literacy rates are seen as improving across the continent, education systems

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186 UN, Millennium Development Goals and beyond 2015, available at http://www.un.org/millenniumgoals/

187 UN, International Decade for Action 'Water for Life' 2005-2015, available at http://www.un.org/waterforlifedecade/africa.shtml

188 Research discussions in Cairo with British Embassy officials, February 2016.

189 DCDC, (2014), 'Global Strategic Trends – out to 2045', page 126.

190 Research discussion with IMO in Cairo, February 2016.

191 African Development Bank, (2014), 'Ending Conflict and Building Peace in Africa; a Call to Action: High level Panel on Fragile States', page 11, available at http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Ending_Conflict_and_Building_Peace_in_Africa-_A_Call_to_Action.pdf

192 International Organization for Migration, (2015), 'Conference on Migrants and Cities', page 64, available at https://www.iom.int/sites/default/files/our_work/ICP/IDM/RB-25-CMC-Report_web-final.pdf

193 Research discussion with British Embassy officials in Cairo, February 2016.

Map of population density in North Africa
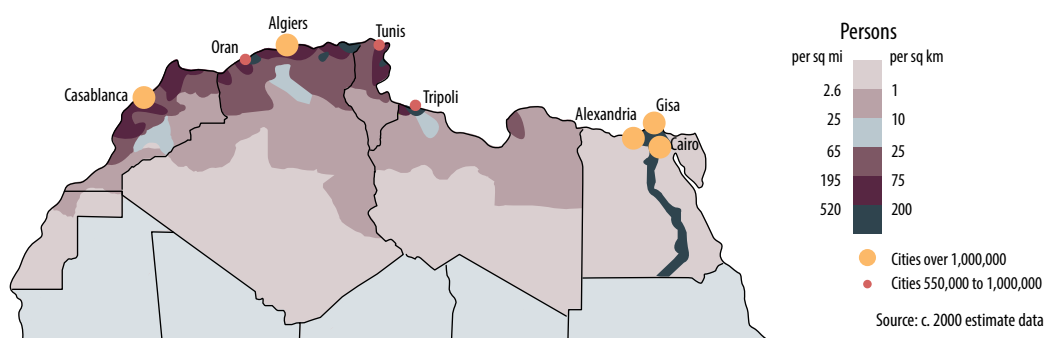
are struggling in North Africa. While investment has been made into education, the quality and access differs markedly for rich and poor, and urban and rural. Many factors influence this, including availability of the right teachers and infrastructure. Constant changeovers of education ministers has not helped and more continuity may make a difference.[194] There is a recognition of the need to reform education and turn bright students into skilled workers.[195] The same is true for gender. While the gender gap for enrolment in primary, secondary and tertiary education has been improving, the same cannot be said for labour force participation.[196] The gap between men and women is seen as widening in the North Africa region, with women's participation in the labour market showing a downward trend.[197] As the vast majority of North Africans are, and are likely to remain, Muslim, cultures and

beliefs are likely to continue to contribute to this gender gap. Notwithstanding this, female empowerment is expected to increase.[198] Morocco, Algeria and Tunisia already have parliamentary quotas for women. In Egypt today, 30% of women are the head of the household. Sexual harassment, however, remains a problem.[199]

Child mortality rates for African children have reduced significantly across Africa between 1990 and 2013 but the steepest improvements are in North Africa. While communicable diseases still blight much of the African continent, North Africa generally reports a brighter picture with more extensive access to basic health care, although Morocco still struggles with high rates of tuberculosis, with 25,000 new cases a year despite a 95% vaccination rate at birth.[200] Chronic diseases pose a threat across the continent, however, due to increased urbanisation and growing incomes and lifestyle changes. The World Health Organization (WHO) estimates

194 Rsearch discussion with British Council in Cairo, February 2016.

195 DCDC, (2014), 'Global Strategic Trends – out to 2045', page 129.

196 World Economic Forum, (2015), 'Ten Years of the Global Gender Gap', available at http://reports. weforum.org/global-gender-gap-report-2015/ report-highlights/

197 Research discussion with British Embassy officials in Cairo, February 2016.

198 *Ibid*.

199 *Ibid*.

200 The Economist Intelligence Unit, (2011), 'The Future of Healthcare in Africa', page 9, available at http://www.janssen-emea.com/sites/default/ files/The%20Future%20of%20Healthcare%20 in%20Africa.pdf

that non-communicable diseases will overtake communicable diseases as the most common cause of death by 2030.[201] These are already prominent in North Africa. With the prevalence of affordable smoking and urban pollution, the incidence of lung cancer has already increased, according to the former head of the National Cancer Institute at Cairo University.[202]

Economy. The gross domestic product (GDP) of North Africa is high compared to the rest of the continent. During 2000-2010 North African countries grew at a steady pace, averaging nearly 4.5% of GDP, while enjoying relatively low inflation.[203] However, inequality and unemployment have blighted the region and are likely to continue to do so without reforms and better governance. The region has a more developed middle class than the rest of Africa, although there may be a squeeze of the middle class out to 2045 if the rich grow richer and the number of those living in poverty increases.[204] The current World Bank rankings for 'ease of doing business' are low and will depend on local political leaders communicating reforms to encourage job creation to prevent future Arab uprisings.[205] North Africa has a particularly high dependence on food imports (51%) and this is likely to rise as the population increases. This also makes North Africa particularly vulnerable to sudden increases in food prices due to external factors. Another

structural problem is the dependence on oil and gas exports. Despite good GDP per capita, Algeria and Libya rely on oil exports, and this lack of diversification makes them vulnerable to changes in oil prices. Morocco, Egypt and Tunisia are far more diversified in their exports as well as having relatively high GDP compared to the rest of the continent. There is much potential for renewable energy in the region, for example, solar power in Morocco. Europe is likely to remain an important trading partner out to 2045, and is therefore likely to maintain its interest in the region and in its stability.

Governance. Governance in North Africa is characterised by authoritarian regimes and politics dominated by security concerns. Tunisia is the only established democracy in the region, albeit resting on a relatively weak foundation. Although North Africa traditionally has the highest level of defence spending in Africa, extremist violence has led to even higher spending on security and therefore postponed reforms. As the drivers behind the 'Arab Spring' remain largely unaddressed (namely, a lack of genuine democracy, high youth unemployment (including graduates) and a disenfranchised youth population) the focus on short-term security priorities will continue to neglect these root causes. This may reinforce the drivers for instability causing unrest and violence in the short term. The most striking differences in the responses of the North African states to the Arab Spring lie in their regime institutions.[206] For example, in Tunisia a complete collapse of the state was avoided in part due to the key institutions remaining in place; whereas in Libya the state virtually disintegrated.[207]

201 *Ibid.*, page 11.

202 *Ibid.*, page 11.

203 Fishman, B., *et al*, (2015), 'North Africa in Transition: The Struggle for Democracies and Institutions', page 114.

204 Research discussion with British Embassy officials in Cairo, February 2016.

205 Fishman, B., *et al*, (2015), 'North Africa in Transition: The Struggle for Democracies and Institutions', page 139.

206 *Ibid.*, page 132.

207 *Ibid.*, page 133.

Institution building requires a home-grown demand for change; this has already been proved by the Arab uprisings themselves.[208] Demands for better governance and efforts to improve institutional capacities are likely to continue out to 2045. It is unclear what the response will be to this pressure, and therefore the extent of the ability and appetite to bring about change.

Geopolitics. The Arab Maghreb Union (AMU) dominates North African structures but the political differences between the countries have meant that there has been little progress in moves to increase cooperation. While Egypt is heavily populated and influential in the Middle East, this position of power is counterbalanced by the AMU. Egypt's focus, however, is likely to remain on the Nile and access to water and land in the Nile delta.

Security. The security situation in North Africa remains highly volatile, characterised by the presence of Daesh and other extremists and disenchantment on the part of the working-age population. Forecasts suggest that the region will continue to see higher levels of conflict than comparable regions of Africa in the short term (as the drivers behind the Arab Spring remain unaddressed), but in the longer term there will be reducing levels of violence. However, the current food insecurity may be exacerbated in the future due to climate change, potentially leading to tension and conflict. The dependence on food imports and on income from oil and gas will also increase the vulnerability of the region to conflict out to 2045. Vast areas remain ungoverned, allowing illicit trade and organised crime to flourish, and the increasing presence of extremism

is also likely to continue to spread into these vacuums. North Africa, through its close connection to the Middle East, is particularly vulnerable to external extremist influences, especially through high levels of migration. Without economic growth and better governance, security in the long term appears unlikely.
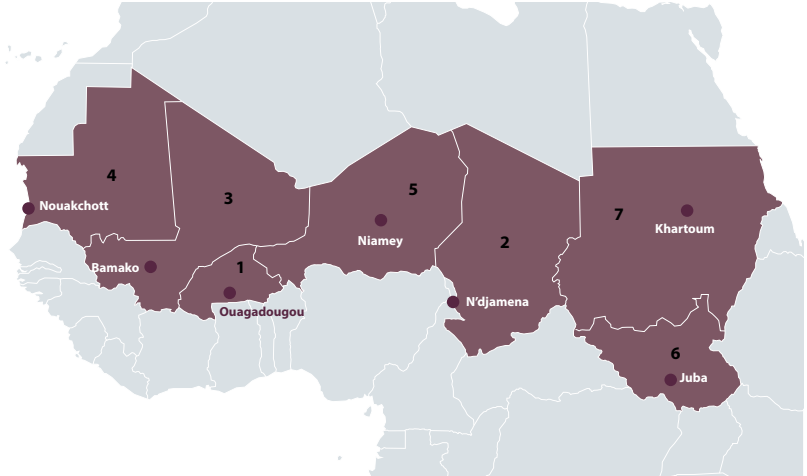
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208 *Ibid.*, page 137.

Sahel

1 Burkina Faso
2 Chad
3 Mali
4 Mauretania
5 Niger
6 South Sudan
7 Sudan

The Sahel is a region that is not easily defined, but for the purposes of this study it includes the countries of Mauretania, Mali, Burkina Faso, Niger, Chad, South Sudan and Sudan. Culturally the Sahel also overlaps the vast southern desert areas of Morocco (Western Sahara), Algeria, Libya and to some extent the south western corner of Egypt and the northern parts of Nigeria. Despite being characterised by its location in the southern part of the Sahara desert, the region is still remarkably diverse.

The Sahel is the poorest region of Africa and at the same time it has the highest population growth. Unlike most of Africa, the centrality of the state authority is still in question, and is likely to remain so in many countries out to 2045. This is because many of the nomadic peoples prefer local democracy and do not accept the centralisation of power away from themselves, whilst low population densities and weak state finances makes it difficult for a government to either enforce its position or demonstrate its value. Unfortunately, this indicates that the Sahel is likely to be the most unstable part of Africa over the next 30 years, as

governments try to exert their authority or weaken under external and local pressures. Some of this instability may be exported to the wider region. A rapidly growing population, at the same time as detrimental climate change, is likely to lead to large population movements and migration both north and south of the Sahel.

Environment. The Sahel is split into three climatic zones:

- the dry and hot desert climate in the northern part of the region;

- the hot wet climate, with pronounced dry seasons, in the south; and

- a hot semi-arid climate zone with one rain season in the transition region between these two.

The year-to-year variability in rainfall in the Sahel is large and there is also variation on ten-year timescales. The region currently experiences food and water stress. Climate projections show a significant warming across the region, but natural variability is expected to dominate future year-to-year changes in rainfall in

the medium term.[209] This, combined with estimates of very large increases in population, and the increases in the frequency and severity of drought and flooding, will put further strain on food and water resources. Mauretania may also be affected by coastal flooding due to an expected sea level rise of 0.32-0.38 metres.

Demographics. The total population of the Sahel is expected to grow from 114 million in 2015 to 254 million 2045.[210] Some of the countries in the region, such as Niger and Mali, are likely to face a tripling of their populations out to 2045. As a result, the populations of the Sahel countries will have the youngest populations of Africa out to 2045. However, while most of the region will remain sparsely populated out to 2045, the population density will increase drastically in already heavily populated areas such as the southern parts of the region, Darfur and the capital cities. Poverty, the impact of climate change and enduring conflicts are likely to lead to significant numbers of people emigrating from the Sahel out to 2045.

While 72% of the Mauritanian and 58% of Mali's population is expected to be urban by 2045, the population of the other countries in the region is expected to remain predominantly rural with Niger and Chad being the least urbanised. However, the cities of the Sahel are growing rapidly.[211] Young populations and urbanisation are particularly

important drivers of cultural change in the Sahel. Urbanisation in the Sahel reinforces the socio-economic divide between the cities and the rural areas.[212]

Human development. While all of the Sahel countries have experienced sustained economic growth over most of the past decade, this has not translated into a comparable reduction in poverty. High population growth means that this is not likely to change significantly and extensive poverty is expected to remain a challenge in the Sahel out to 2045. Although the reach of basic health services and education has been substantially extended, most of the Sahel's human development is likely to lag behind the rest of Africa out to 2045. A number of countries in the Sahel are likely to have the lowest life expectancy in the world and child malnutrition is expected to remain an issue. Investments to stabilise the region may lead to improvements; however, these will start from a low base.

Economy. Investments from, and trade with, North Africa and further economic integration with West Africa including connection to West African ports is likely to improve the conditions for growth in the Sahel. Technology, such as micro credit initiatives and renewable energy, provides the potential for economic activities in remote areas of the Sahel. Sudan has, in part, a more developed economy, including manufacturing, which has good potential to be part of the broader Middle East and Eastern African markets. Support from donors and remittances are likely to remain important sources of finance in the
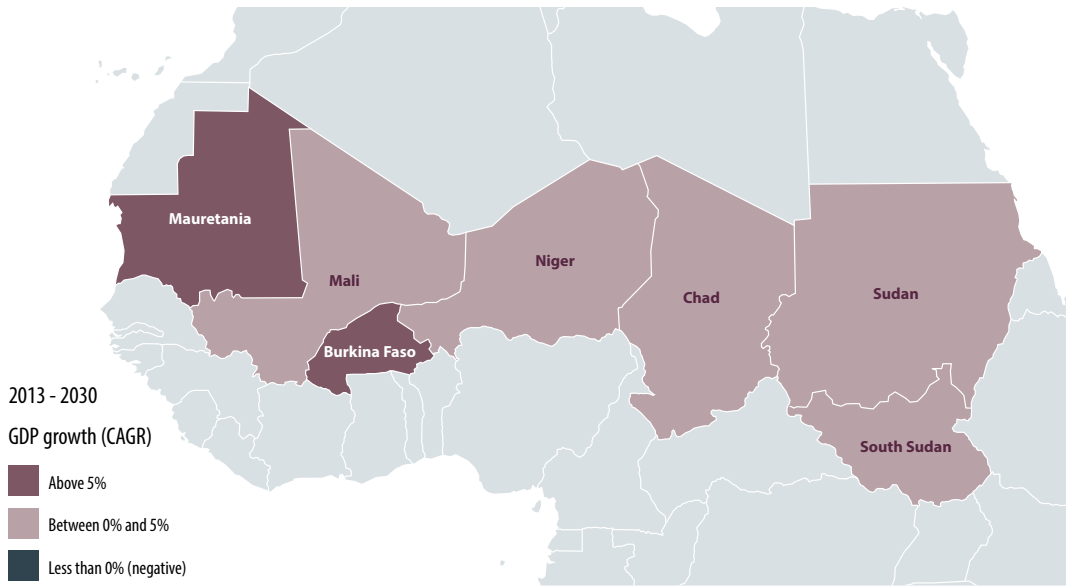
209 Richardson, K., Met Office Hadley Centre, (2015), 'Climate change in Africa; a review to inform DCDC's Africa Regional Survey 2045'.

210 UN Population Division, (2015), 'World Population Prospects 2015', available at https://esa.un.org/unpd/wpp/

211 UN Population Division, (2014), 'World Urbanisation Prospects', available at https://esa.un.org/unpd/wup/

212 EU ISS report number 17, (2014), 'Re-mapping the Sahel: transnational challenges and international responses'; and DIIS Report 2015:01, 'Insights from Eastern Africa and Sahel – Protection and (In)Security Beyond the State'.

Map of economic growth in the Sahel

2013 - 2030

GDP growth (CAGR)

- Above 5%
- Between 0% and 5%
- Less than 0% (negative)

Source: Oxford Economics database estimates, accessed in August 2014; EY analysis

Sahel. Donor support contributes to improving the infrastructure for economic activities in the region. Significant areas of economic activity in the Sahel, such as agriculture, cattle herding and markets, are interdependent in the region. Increased food security and sustainable household livelihoods are prerequisites for stability. The lack of employment and opportunities for young people is likely to be a major challenge across the entire region out to 2045.

Governance. The Sahel is the least democratic part of Africa today and the outreach of the state is limited. Discontent with poverty and poor public services can rapidly undermine support for state structures, even where the state is present. Most states in the Sahel face issues of racial, ethnic, regional and religious domination and control of land and other resources by ruling elites. In the long term the character of governance will have a strong impact

on the level of conflict. Possible violent power transitions may further complicate the picture. Islamic civil society may act as a stabilising force and play a role in state-building in this region, particularly by offering alternatives to violent radicalisation, but this will depend very much on the dynamics at the local level. However, democracy and more inclusive governance have started to develop in parts of the region and governance is likely to improve in the long term, driven by a combination of internal and external pressures. By 2045, some of the states in Sahel may be established democracies, although poor ones.

Geopolitics. Sudan is likely to remain the most powerful country in the region out to 2045. However, Sudan is not likely to become a regional hegemon, as its development is also closely linked to the Horn of Africa and the Arab world. Following South Sudan's independence in 2011, the residual state of Sudan remains

a multi-ethnic, multi-religious society, very similar to its predecessor. Together with other countries in the region, Sudan is likely to remain a fragile country, with a centre struggling to control its periphery and to keep the diverse nation together. Although Sudan is likely to retain a considerable degree of influence in the eastern Sahel over coming decades, it is also likely to be part of the broader power struggle in the Arab world, and is therefore likely to continue to be engaged on the Arab peninsula and possibly in North Africa out to 2045.

Competition over power and regional influence has made the Sahel a region which sees extensive state interference in other states, often through the use of proxies. However, some states with conflicting interests have been able to end hostilities and begin cooperating. Given the potential spill-over effects of conflict within the Sahel and the cross-border nature of extremist activity, regional cooperation is likely to improve further out to 2045. The current international attention on, and support to, the region is likely to endure as long as the threat of extremism and migration remains a global concern.

France is the major external security actor in the region, and exercises a considerable influence in western and central Sahel. The French long-term presence in the region is likely to depend on perceptions of threats to France emanating from the region and on French internal politics. The North African states of Morocco and Algeria are likely to retain an influence in western Sahel, along with Nigeria and the regional organisations, in particular the Economic Community of West African States (ECOWAS).

Security. Every country in the Sahel hosts a complex mix of conflict drivers:

- poverty and unemployment;

- drought;

- inequality;

- poor governance; and

- armed threats emanating from non-state actors seeking autonomy from the central government and external influences.[213]

Rapid population growth, socio-economic pressures and the effects of climate change will combine to make the region vulnerable to crisis out to 2045. Vast, sparsely populated areas and a vulnerability to external influences add to the challenges which any kind of government will have to deal with. The current wave of extremist Islamist violence is a not a unified movement but is being conducted by a complex mix of armed groups with constantly shifting affiliations and structures. Extremist and separatist groups overlap and there are close connections between many of these groups and organised crime (such as human trafficking and smuggling). Furthermore, the character of the groups differs, as do their agendas.[214]

In large parts of the Sahel the state does not have a monopoly on the use of force. Governments are often opposed by armed groups which control significant parts of their territory. There

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213 UN HABITAT, (2014), 'The State of African Cities 2014', available at http://unhabitat.org/books/state-of-african-cities-2014-re-imagining-sustainable-urban-transitions/state-of-african-cities-2014-re-imagining-sustainable-urban-transitions/

214 EU ISS report number 17, (2014), 'Re-mapping the Sahel: transnational challenges and international responses', available at http://www.iss.europa.eu/uploads/media/Report_19_Sahel.pdf

is a plethora of national and sub-national identity markers, security practices and rules which co-exist alongside each other throughout the region. The state is therefore not the only actor to set agendas. In addition, ethnic and economic links across national borders make it easy for armed groups to extend their actions into several countries. UN multidimensional peace operations have already been deployed, for example, in Mali; but these alone are unlikely to establish long-term peace, and the UN is likely to conduct major missions in the Sahel out to 2045. There are some signs of optimism for home-grown solutions in the form of increased capacity of local governments to grip security; however, these are only likely to come to fruition in the long term.

West Africa

1	Benin	**7**	Liberia
2	Côte d'Ivoire	**8**	Nigeria
3	Gambia	**9**	Senegal
4	Ghana	**10**	Sierra Leone
5	Guinea	**11**	Togo
6	Guinea-Bissau	**12**	Cabo Verde
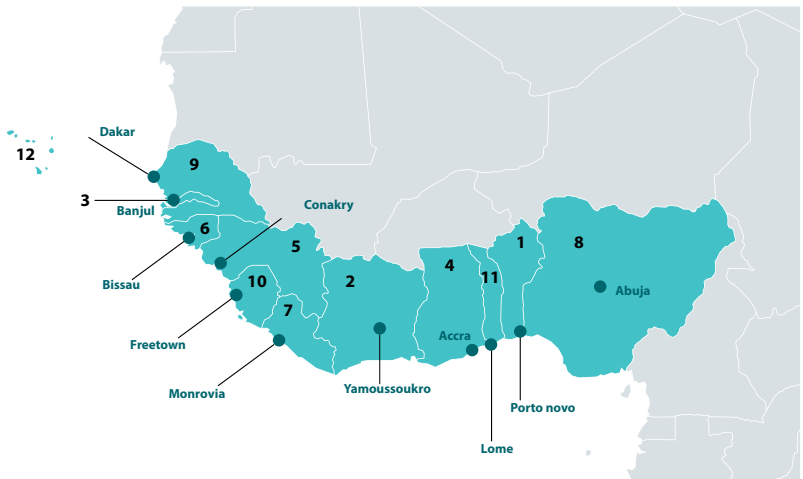
Coastal West Africa covers an area of 3000 kilometres from east to west and approximately 900 kilometres north to south. The sheer size means that, whilst there are similarities, there are also a considerable number of differences between the region's countries. For example, the 12 countries include Nigeria, the most populous country in Africa, Gambia, the smallest mainland country in Africa, and the Cabo Verde islands. As a result, the region can in many ways be considered a reflection of the diversity found across Africa.

Despite its internal differences, the past ten years indicate that this region as a whole is progressing, albeit at differing speeds. It is likely that the next 30 years in the region will be relatively peaceful with economic growth, and will see a consolidation of state authority which will be linked to popular support in most cases. However, this region has a more religiously-mixed population than other parts of Africa. Whilst Christians and Muslims have co-existed peacefully for centuries, there will be growing pressures stemming in particular from urbanisation and education as well as external sources. This is likely to lead to civil strife

in differing ways, although Boko Haram is an extreme case and is unlikely to be replicated elsewhere. These pressures are likely to be exacerbated by economic development being strongest on the (Christian) coast, leading to a greater economic divide with the Muslim north. At the same time an east-west divide is likely to develop as Nigeria, particularly around Lagos, becomes the engine of growth for the east of the region, leaving the west behind. This will also further demonstrate Nigeria's growing dominance in the region and increasingly out into the Sahel and Central Africa.
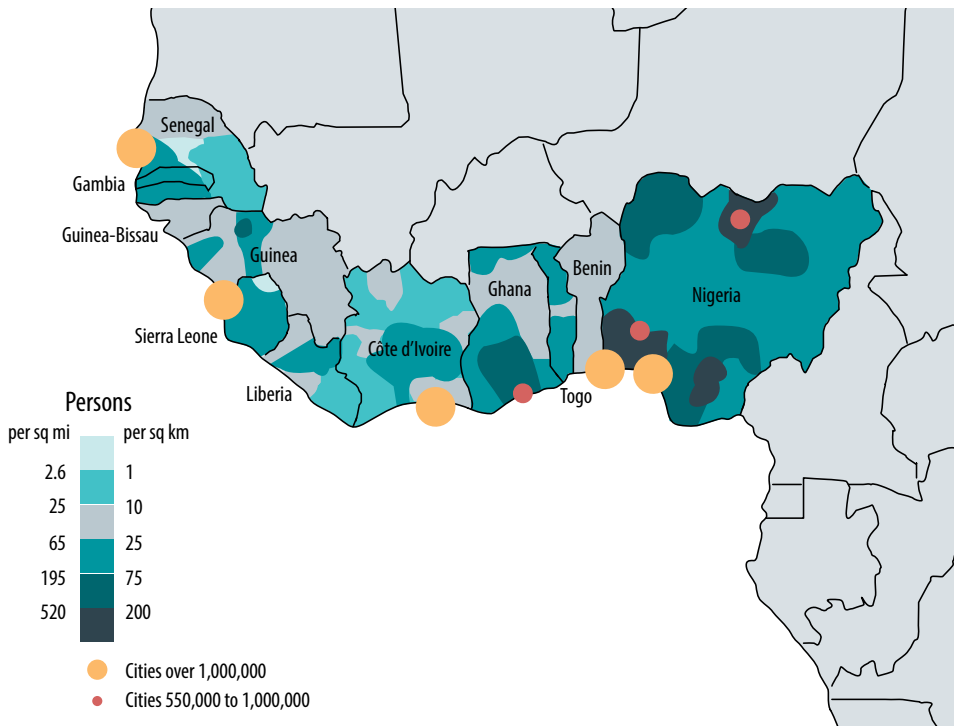
Environment. The region has high levels of rainfall along the coast, reducing steadily further north. This has resulted in tropical rainforest in the south, particularly in Sierra Leone, Liberia and Côte d'Ivoire in the west, and Nigeria in the east. Further north there is tropical savannah and then grasslands, with only parts of Senegal and the northern borders of Nigeria having semi-arid conditions. Historically, these environmental differences have had a major effect on Islamic dominance in the area, as horses (their key force multiplier) were unable to survive further south. Today the key issue is access to water

and fertile land, which is likely to lead to further migration from the northern parts of countries and from the Sahel towards the south. This will be further driven by climate change in the form of temperature rises and therefore reducing water availability in the north, resulting in an increasing percentage of Muslims along the coast.

Demographics. West Africa is generally more densely populated than most of sub-Saharan Africa, with only East Africa having a comparable density level. Fertility rates remain high (although not as high as the Sahel) in Nigeria and the western countries. This, combined with improving life expectancy, points to a

continually growing population out to 2045. However, there are considerable differences within the region. Most notably, Nigeria, with 40% of the land mass, holds close to 65% of the population. It also makes up 20% of the entire population of Africa, and it is likely that this percentage will grow in coming years. The UN is predicting that Nigeria (which currently has the seventh largest population) will have the third largest in the world by 2050, having overtaken the United States.[215] More specifically, the most densely populated areas tend to be the capital cities on the coast. The population in Greater Lagos in Nigeria is estimated to be over 25 million, a number similar to the population of Ghana, the

Map of population density in West Africa

Persons	
per sq mi	per sq km
2.6	1
25	10
65	25
195	75
520	200

● Cities over 1,000,000
• Cities 550,000 to 1,000,000

Source: c. 2000 estimate data

215 UN Department of Economic and Social Affairs, (2015), 'World Population Prospects: Key Findings and Advance Tables', available at http://esa.un.org/unpd/wpp/Publications/Files/Key_Findings_WPP_2015.pdf
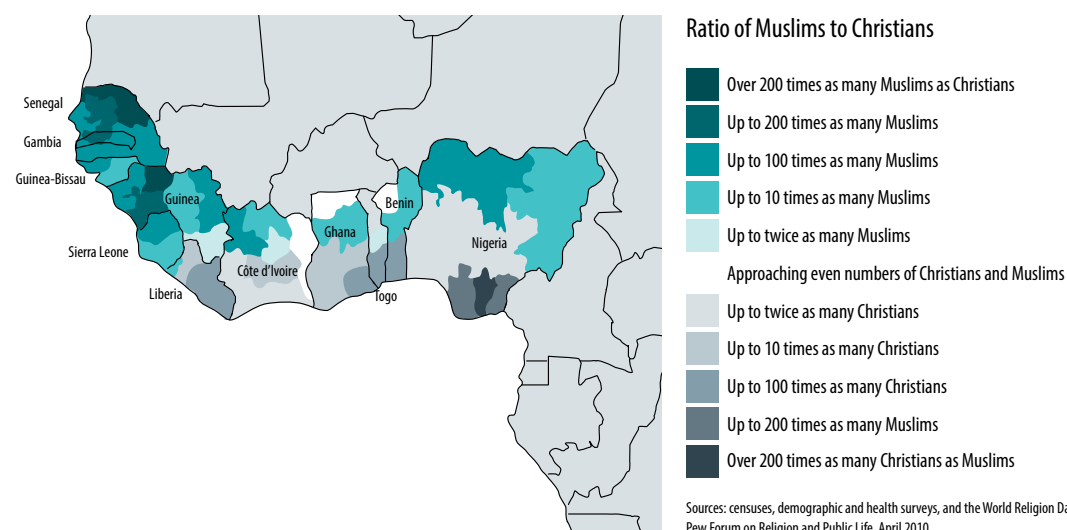
next most populous country. These concentrations of population coincide with the region's economic hotspots which are drawing in more people from rural areas, providing cheap labour which will facilitate further expansion. Finally, it is worth noting that the northern Muslim populations are growing faster than the southern Christian populations, which is likely to have a serious impact on the politics of some countries where the population is fairly evenly spread between the two, particularly in Nigeria.

Human development. Notwithstanding the immediate problems of slums and poverty, urbanisation is likely to lead to improvements in health and education because it provides a population density which can be easily supported either by the state or by private companies. For example, Lagos has numerous private schools. However, this could lead to an increasing divide in opportunity between the rural and urban poor, and an ever

greater division between the more rural north and the developing urban south, leading to a growing economic gap between Christian and Muslim populations. This gap will be accentuated in some countries by the latter's inherent distrust of 'Western' education. For example, in Nigeria the rural Muslim communities appear to have a negative attitude towards the principles of Western education,[216] and this may lead to a widening wealth divide between the different communities which will, in turn, increase the likelihood of social unrest.

Economy. There are large disparities in terms of GDP between and within the countries of West Africa. Cabo Verde has the highest GDP per capita but it is only a little ahead of that of Nigeria, which according to the World Bank is twice the rates of Côte d'Ivoire and Ghana. These, in turn, are 30% greater than Senegal's GDP per capita, and more than twice that of the other countries in the west of the region.[217] These differences are

Map of religious groups in West Africa

Ratio of Muslims to Christians

- Over 200 times as many Muslims as Christians
- Up to 200 times as many Muslims
- Up to 100 times as many Muslims
- Up to 10 times as many Muslims
- Up to twice as many Muslims
- Approaching even numbers of Christians and Muslims
- Up to twice as many Christians
- Up to 10 times as many Christians
- Up to 100 times as many Christians
- Up to 200 times as many Muslims
- Over 200 times as many Christians as Muslims

Sources: censuses, demographic and health surveys, and the World Religion Database
Pew Forum on Religion and Public Life, April 2010

216 DCDC research visit to Nigeria March 16.

217 The World Bank, (2016), 'Countries and Economies', available at http://data.worldbank.org/country

currently due mainly to oil revenue, but it is also clear that there is rapid economic development taking place around the major cities. Lagos, in particular, appears to be having a major effect on its surroundings; whilst it is too early to confirm a definitive trend, it appears likely that this is having a ripple effect, including across borders, with both Benin and Togo's coastal economies developing. With the further development of large container ports near their capital cities, as well as at Tema in Ghana, it is highly likely that there will be continuing rapid economic growth in a zone stretching from Abidjan in the west to beyond Lagos in the east. In contrast, the western countries are likely to see much lower growth, except perhaps around Dakar in Senegal. It is also likely that there will be a

growing economic divide between north and south, leading to further migration towards the coast.

Governance. Governance in West Africa, whilst mixed in type and performance, appears to be improving in most cases. The Ibrahim Index of African Governance 2015 reported that three coastal West African countries lie in the top ten performers, with only one in the bottom ten.[218] Furthermore, since that 2015 report Nigeria, listed as a poor performer, has held successful elections resulting in a peaceful change of government. Urbanisation and economic growth are expected to drive progress more quickly in the eastern countries, particularly in the south near Lagos and Accra. Corruption remains a major problem in many of the countries, particularly within

Map of economic growth in West Africa

2013 - 2030

GDP growth (CAGR)

- Above 5%
- Between 0% and 5%
- Less than 0% (negative)
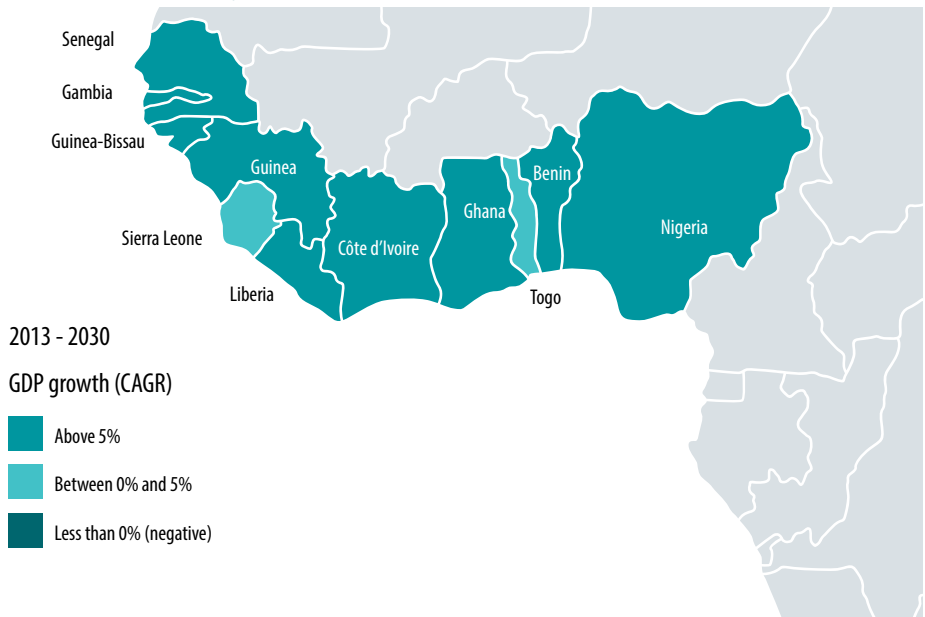
Source: Oxford Economics database estimates, accessed in August 2014; EY analysis

218 Mo Ibrahim Foundation, (2015), '2015 Ibrahim Index of African Governance, Executive Summary', available at, http://static.moibrahimfoundation.org/u/2015/11/03174252/2015-Executive-Summary.pdf?_ga=1.255227468.597450736.1460987274

government, and this will continue to put a brake on rapid progress. However, it is possible that new technologies will reduce this problem by changing attitudes. Anecdotal evidence indicates that individuals within security forces are increasingly worried about being exposed through, for example, the use of smartphones. At the same time, mobile banking, used to pay utility and other bills, is reducing the general population's need to make personal cash transactions, which have previously provided opportunities for demands for petty cash from the clerk taking the money. Overall, it is assessed that governance in West Africa will improve over the next 30 years as state authorities consolidate their power by actively seeking popular support through more inclusive systems.

Geopolitics. Nigeria dominates West Africa because of its location, population and GDP. To some extent this has been balanced by France, with five of the countries previously being French colonies and others also belonging to the Francophonie. West Africa, with much of the Sahel, makes up the ECOWAS, which was active earlier than most of the other regional organisations in Africa, and deployed troops in the 1990s to various countries that had collapsed. However, whilst the organisation continues to mature, and acted most recently in Mali during the conflict, some countries, particularly Nigeria, will not want to reduce their own sovereignty in its favour. These current dynamics are highly likely to remain for the next 30 years. However, new dynamics will also develop as Africa, and this region, becomes more closely linked with the rest of the world. This is likely to lead to greater political engagement, with alliances perhaps being formed with third parties by both Nigeria and others. Some of these alliances may be primarily designed to

increase the members' influence globally, but most will have a regional effect as well.

Security. The last 30 years in West Africa have been tumultuous with civil wars in Guinea-Bissau, Sierra Leone, Liberia and Côte d'Ivoire as well as considerable internal strife in most of the region's other countries. However, these internal conflicts have now significantly reduced with aggressive rebel groups operating only in Casamance (southern Senegal) and in north-east Nigeria. In the case of the latter, Boko Haram may be an early example of future groups inspired by religious ideologies, some of which will resort to violence, although they will have different methodologies. Whilst Christians and Muslims have co-existed happily for centuries, this harmony may break down in the coming years in some regions. This will be due to a variety of pressures, stemming from socio-economic and political factors at local, regional and global levels. More positively, there will be less likelihood of general uprisings against governments, which are likely to take greater account of their populations' interests, although attempted coups driven by disempowered elites may still occur on occasion. Military forces are also becoming more professional, which should lead to loyalty to their state rather than to individuals, making coups less likely. Traditionally Nigeria, Ghana and Senegal have been key providers for peace support operations, particularly to the UN. However, it is likely that other countries in the region will provide increasing numbers of troops in coming years, both for the UN and the African Union (AU), as well as collectively, as they did in Mali in 2013.

Central Africa

1   Cameroon
2   Central African Republic
3   Congo
4   Democratic Republic of Congo
5   Equatorial Guinea
6   Gabon
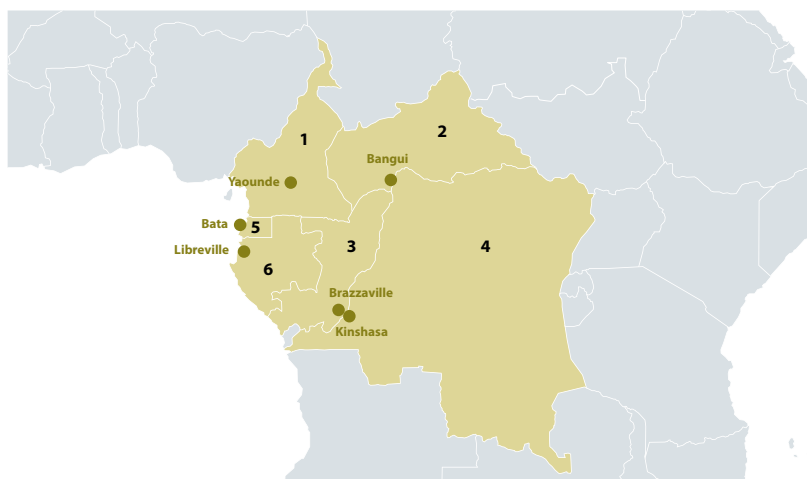
Central Africa, as defined for this paper, is made up of the Economic Community of Central African States less Chad in the north, which fits more naturally into the Sahel, and Angola in the south, which is also a member of the Southern African Development Community. The remaining countries are relatively homogenous, generally heavily forested with a resulting low population density. Most use the Central African CFA Franc as a currency and are French speaking. Many have high GDPs per capita coming predominantly from resources such as oil. Cameroon, however, is different, with widely differing climatic zones across the country, and an increasingly diversified economy over the last 20 years.

The combination of low populations and significant resources has meant that those in power have focused on controlling revenue raised from resource extraction. This has led to limited general development, whether social or economic. Furthermore, those in power have developed systems of patronage to ensure they remain in place and, as a result, governance systems have made limited progress. The outlier is Cameroon, where the long-term President, Paul Biya, faced with limited revenue from resource extraction, has encouraged economic diversification as well as human development, whilst keeping tight control on power. It is possible that others, faced with long-term decline from oil revenues, will attempt to follow in his footsteps.

Environment. Most of coastal Central Africa is tropical forest, although limited areas have been cleared for agriculture. There is some tropical savannah further inland, particularly in the north in Central African Republic (CAR) and Cameroon, whilst eastern Democratic Republic of Congo (DRC) has land which can support heavier populations. As a result climate change is unlikely to have the drastic effects it may have on the drier Sahel, for example. Almost all of the countries have considerable raw resources. On the coast, oil has been developed along with forest products, whilst there are large-scale mineral resources across the region, particularly in DRC and CAR. However, the mineral resources have not all been developed due to a continued lack of infrastructure and security.

Sylvie Bouchard / Shutterstock.com

Demographics. The population densities of Central Africa are exceptionally low, even by African standards. The coastal countries average less than ten people per square kilometre, and over 40% of each of these populations live in their two main cities. CAR has a similar density but the population is less urbanised. The result of this is a limited need for infrastructure, which would in any case be uneconomic without a major economic user such as a mine. An example of this would be the Transgabonais railway, which still requires subsidies and is running at less than 50% capacity.[219] Cameroon and DRC have greater population densities, although still less than 50 people per square kilometre.

Whilst both of these have larger cities than the other countries, their general populations are spread more widely across the country, and across more cities, mainly due to better agricultural lands and general mineral resources. In Cameroon's case this has led to some infrastructural development, particularly along the route to Chad and CAR, as well as a more diverse economy. This has not really occurred in DRC, partly because of insecurity, but also because the more heavily populated eastern and southern parts of the country have more natural communication links with neighbouring countries. Only on the islands is there a more dense population, with resultant better infrastructure.

## Map of population density in Central Africa
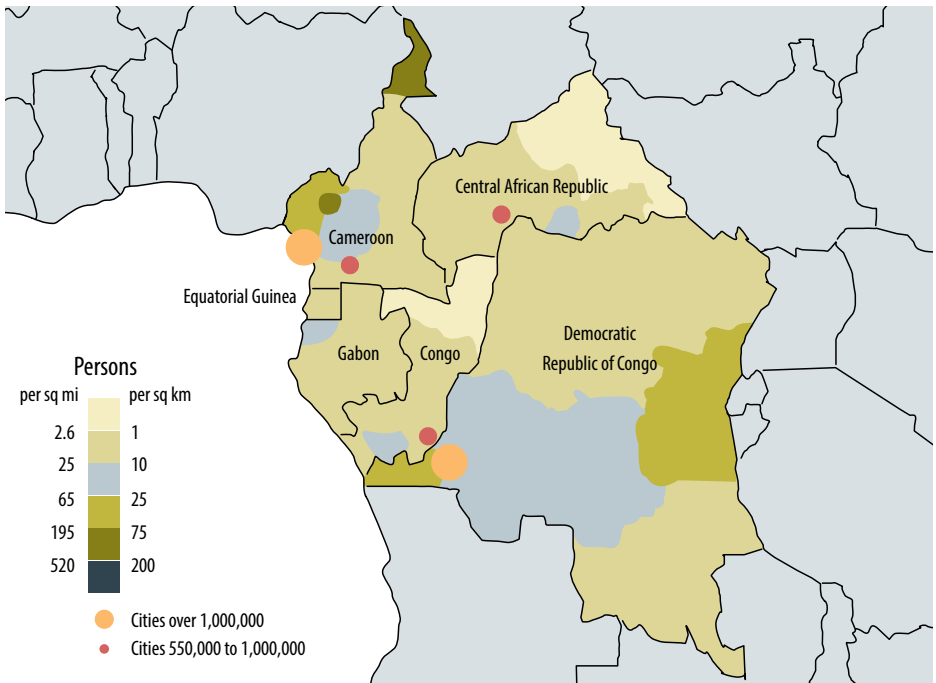
Source: c. 2000 estimate data

219 Mining Review Africa, (2015), 'Gabon's Transgabonais railway unsustainable and underutilised', available at http://www.miningreview.com/news/gabons-transgabonais-railway-unsustainable-underutilised/

However, demographers predict that the population of Central Africa will continue to grow more rapidly than most of Africa over the next 30 years due to high fertility rates as well as greater life expectancy. Whilst this will put greater pressure on central governments to provide work and amenities, it may also prove key to development in these currently sparsely populated countries.

Economy. The economies of the region are almost all based on resource extraction, but with differing results. The exports of Equatorial Guinea, Gabon and Congo-Brazzaville are almost totally made up of oil products, which make these countries some of the richest in GDP per capita in Africa.

This probably explains why such a high proportion of the population lives in the major cities, dependent on the trickle-down effect from oil sales, which also make up the majority of government revenue. However, the vast majority of the population remain in poverty, with limited effort made by governments to develop alternative sources of national wealth since they have no need to do so. Similarly, there is little interest shown in human development, since it provides little revenue for the government. This is not the case in Cameroon, where oil revenue is much lower. The government has encouraged the economy to diversify, and by 2012 factory products were estimated to make up 30% of GDP,[220] a figure that is still rising. This may be

Map of economic growth in Central Africa

2013 - 2030

GDP growth (CAGR)

- Above 5%
- Between 0% and 5%
- Less than 0% (negative)
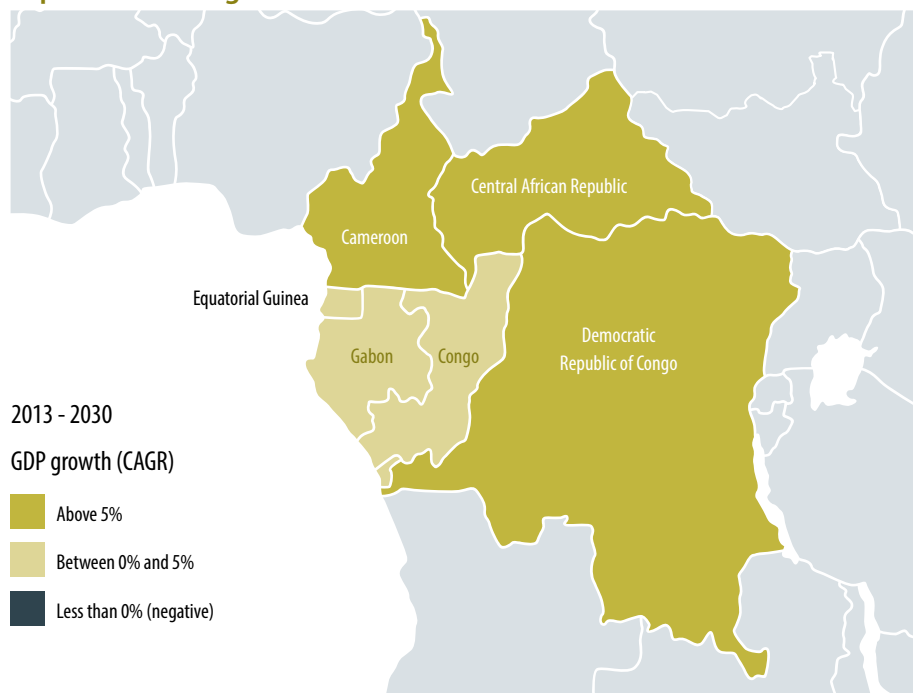
Source: Oxford Economics database estimates, accessed in August 2014; EY analysis

220 KPMG Central Africa, (2012), 'Doing Business in Cameroon', available at https://www.kpmg.com/Africa/en/KPMG-in-Africa/Documents/CameroonInfo.pdf

the example that the others will have to follow as their oil exports reduce in value and quantity. Gabon, for example, which already has an infrastructure programme in place, is predicted to run out of oil in 2025. DRC and CAR are both mineral-rich, including cobalt, diamonds and gold. However, the lack of security and infrastructure has meant that there has been no development on a large scale, except in Katanga (south-east DRC) where large volumes of ore can be moved through Southern African Development Community countries. Therefore these countries have great potential but little likelihood of realising it in the near term. However, once long-term stability is in place and infrastructure has been developed, creating a virtuous circle between the two, they may develop quickly out to 2045.

Human development. The oil wealth of many of these countries allows the region to claim a higher GDP per capita than East Africa and something similar to West Africa.[221] Some of this economic wealth has been used to improve human development to the extent that many of the countries score more highly on this than other elements of the Ibrahim Index of African Governance. For example, Gabon, which was rated 22nd on the Index in 2015, was ranked 18th on the human development component. Similarly, Cameroon has invested in this area, lying 21st on human development whilst only 34th on the overall Index.[222] However, the inland countries of DRC and CAR both score very badly, lying in the bottom seven countries in Africa. This is partly due to the low density of population in rural areas with no infrastructure, making it difficult to provide government services. The difficulty of accessing large parts of the population in this remote region, as well as government revenue not being dependent on the efforts of the population, has led to a lack of drive to improve human development. As oil runs out and security improves, it is likely that progress will be made in the latter half of the next 30 years, with Central Africa seeking to catch up the remainder of the continent.

Governance. The key characteristic in the governance of this region is the longevity of the rulers compared to the majority of Africa, where more democratic constitutions are taking hold. All heads of state have led their countries for over 15 years with the exceptions of Ali Bongo in Gabon, who took over from his father in 2009 after the latter had ruled since 1967, and Catherine Samba-Panza in CAR, who attained office following a civil war and UN intervention in 2014. This longevity has been at least partly due to the nature of government revenue, which has historically been dependent on resource extraction rather than the efforts of the general population. This characteristic has stopped a middle class and wider political elite from developing, allowing a patriarchal system of patronage and governance that has had limited interest in wider development. Even the people

221 African Union Commission, (2012), 'Countries Mapping and Membership by Regional Economic Communities', available at http://www.academia.edu/15529845/Countries_Mapping_and_membership_by_Regional_Economic_Communities_Source_AUC

222 Mo Ibrahim Foundation, (2015), '2015 Ibrahim Index of African Governance, Executive Summary', available at http://static.moibrahimfoundation.org/u/2015/11/03174252/2015-Executive-Summary.pdf?_ga=1.255227468.597450736.1460987274

Presidential time in office[224]

Country	President	Years in Office	Rank in Africa	
Equatorial Guinea	Teodoro Obiang	37 (1979 - ?)	1	
Cameroon	Paul Biya	34 (1982 - ?)	3	
Republic of Congo	Dennis Sassou-Nguesso	32 (1979-92 – 1997 - ?)	4	
Sao Tome and Principe	Manuel Pinto da Costa	21 (1975-91 – 2011 - ?)	11	
Democratic Republic of Congo	Joseph Kabila	15 (2001 - ?)	15	
Gabon	Ali Bongo	7 (2009 - ?)	25	Replaced his father
Central African Republic	Catherine Samba-Panza	2014 - ?		Following civil war and UN intervention

* Largest number of years in office

of São Tomé, which ranks highly on the Ibrahim Index of African Governance,[223] recently elected someone who had ruled the country for 16 years until 1991. This indicates a narrow focus on patrician elites. However, it is likely this will change quite radically over the next 30 years as oil runs out and it becomes clear that the interior can only be developed through better infrastructure and human development. It is likely that this will lead to greater control of the hinterlands, which have been of limited importance until now, and by extension more effective systems of governance.

Geopolitics. Central Africa has been of limited importance in global or continental terms. Since much of it was once part of French Central Africa, France has remained the dominant external partner, challenged (but only on occasion) by Angola, which is also part of the regional body Economic Community of Central African States. This body will probably grow in importance as these

countries develop their control over their hinterlands and increase interconnectivity. However, the key change over the next 30 years will be dependent on the development of DRC. It is bigger, and has over twice the population, of all the other countries in the region put together. It also has some of the largest deposits of key metals needed by the global economy. Whilst still lacking in security and with limited government control, it is in a much better state than it was 20 years ago. If these improvements continue over the next 30 years, it could become the regional hegemon. This will lead to a changing relationship with global actors, who will continue to engage with it to access the minerals they need.

Security. Until recently, some countries of Central Africa have been plagued by internal insecurity, particularly in their interiors, due to weak governance. However, current trends indicate that most governments are gaining greater control of their hinterlands by developing more effective governance structures, as well as providing better social services (albeit slowly). This is likely to continue over the next 30 years, although it may

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223 *Ibid*.

224 Voice of America, 'How long have Africa's Presidents held office?', available at http://projects.voanews.com/african-presidents/

lead to some conflict where previously *de facto* autonomous regions resist central government interference. Nevertheless, it is assessed that the population will accept the central importance of the state, allowing state authorities to develop further. It is more likely that insecurity will stem from crime or attempts by some to gain power by force if prevented from doing so by other means. Conflict between states, except minor skirmishes over national boundaries, is considered unlikely.

Horn of Africa

1 Djibouti
2 Eritrea
3 Ethiopia
4 Somalia
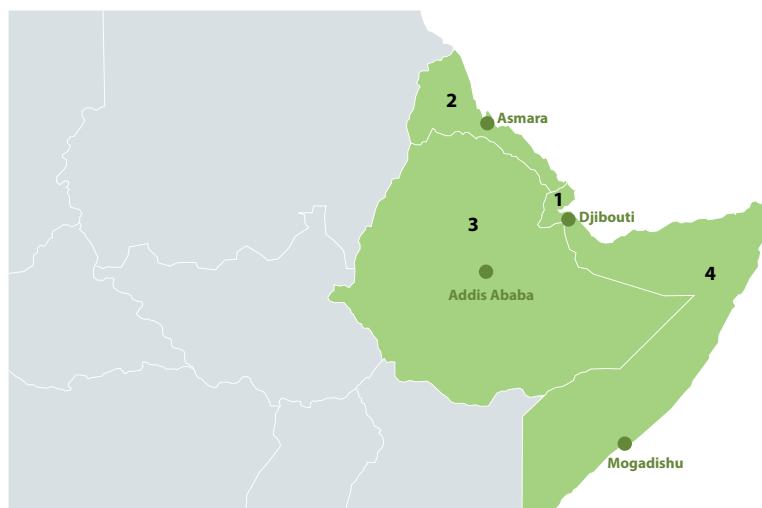
The Horn of Africa, comprising Djibouti, Eritrea, Ethiopia and Somalia, is a region of contrasts and is likely to remain so out to 2045. Ethiopia stands as a bastion of stability in an otherwise unstable neighbourhood, and due to its regional dominance is likely to play a central role in the development of the wider region going forward. Although Ethiopia may still experience significant setbacks within the timescale, its location and size mean that it will remain the leading power in the region, and may well become more influential within the timescale. Security progress in the Horn of Africa is unlikely without its cooperation.

The Horn of Africa is currently one of the least developed of Africa's regions, particularly in terms of governance levels and human development, and it is likely to remain so out to 2045. In general, many of the population groups in the region remain suspicious of centralised government, and prefer more localised forms of democracy, which may hinder political progress and improvements in human development going forward. Some countries, in particular Ethiopia, are

likely to see improvements, particularly if current levels of economic growth can be sustained over the long term. However, Ethiopia faces its own internal challenges and tensions, with different groups vying for influence, not only against each other but also against the central government. This will affect Ethiopia's own prospects for future development, as well as potentially those of the wider region looking out to 2045.

Environment. The Horn of Africa is likely to experience rising temperatures out to 2045, with projections of around a one to two degree Celsius increase by the mid-21st Century.[225] Large shifts in rainfall patterns are also expected to occur, although here the direction of change remains uncertain. Whilst decreases in seasonal average rainfall amounts are currently being observed from March to May in the lowland areas of south-eastern Ethiopia and southern Somalia, there are projections that rainfall may increase

225 Richardson, K., Met Office Hadley Centre, (2015), 'Climate Change in Africa: a review to inform DCDC's Africa Regional Survey 2045'.
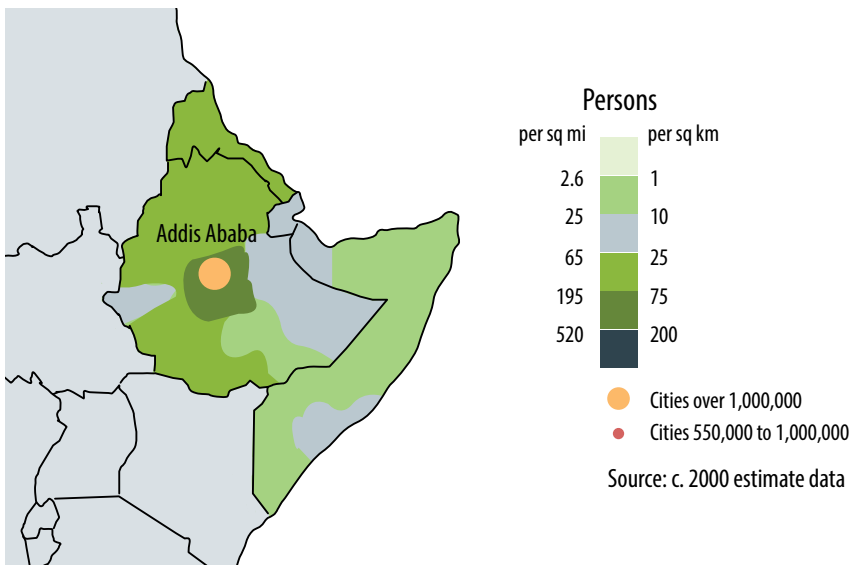
out to 2045 in the highland areas.[226] Whatever the direction of change, a significant disruption in rainfall patterns could have a serious impact on densely populated areas. The vulnerability of the food security system to weather events is currently high and is likely to increase everywhere across the region, unless measures are taken to adapt to this effectively.

The Horn of Africa's potential for renewable energy development is huge. In Ethiopia, the Grand Ethiopian Renaissance Dam will bring the potential for a significant increase in hydropower out to 2045; elsewhere, Somalia has significant potential to develop offshore wind power.[227] Where implemented and managed successfully, such developments will support economic development in the region. However, further tension over Nile water-sharing – and in particular over the Grand Ethiopian Renaissance Dam project – will remain a possibility as water stress both within and around the region increases.

By 2045 the rise in sea levels, combined with increasingly intense storms, will place some coastal areas of the Horn of Africa region at an increased risk of flooding. The coastal populations of Somalia and Eritrea are likely to be particularly affected, with potential impact on coastal agriculture, aquaculture/fisheries and housing.[228]

Map of population density in the Horn of Africa

Persons

per sq mi	per sq km
2.6	1
25	10
65	25
195	75
520	200

⬤ Cities over 1,000,000

● Cities 550,000 to 1,000,000

Source: c. 2000 estimate data

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226 *Ibid*.

227 African Development Bank, (2013), 'Development of Wind Energy in Africa (Working Paper No. 170)', available at http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Working%20Paper%20170%20-%20Development%20of%20Wind%20Energy%20in%20Africa.pdf

228 Richardson, K., Met Office Hadley Centre, (2015), 'Climate Change in Africa: a review to inform DCDC's Africa Regional Survey 2045'.

Map of economic growth in the Horn of Africa
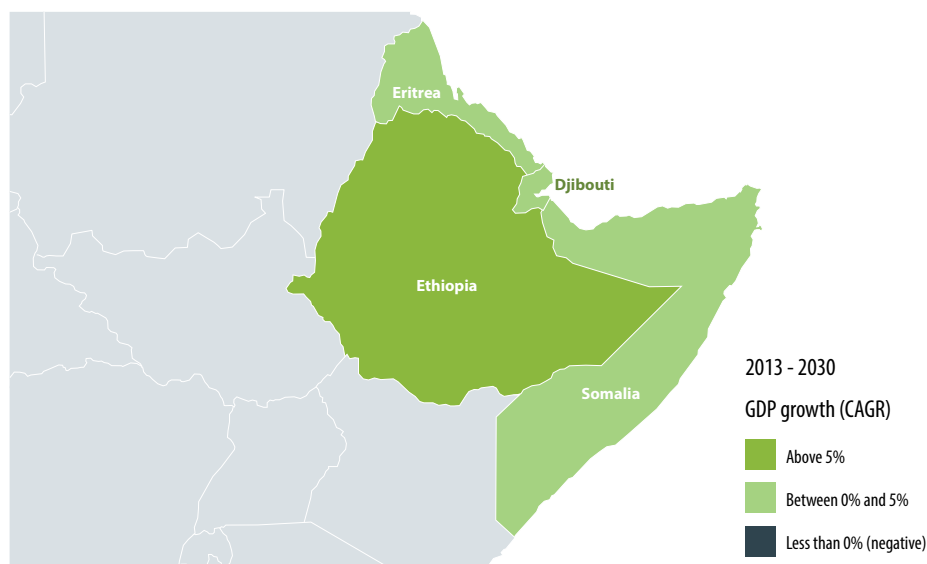
Source: Oxford Economics database estimates, accessed in August 2014; EY analysis

Demographics. Population growth will be unevenly distributed across the region. Some parts will remain sparsely populated, but population density may increase dramatically in already densely populated areas, such as the Ethiopian plateau. The rate of population growth in major cities (for example, Addis Ababa) is likely to be significant; however, to a large extent this will remain unplanned and often transitory, driven by the availability of seasonal agricultural employment in rural areas. Meanwhile, continued insecurity and the search for employment/economic opportunities could perpetuate the outflow of migrants from the region, leading to increased influence from diaspora populations and an increase in remittance flows out to 2045.

Economy. Although some countries in the region will experience a greater degree of economic diversification out to 2045, this will not be even across the region. Ethiopia has already shown signs of success in attempts to diversify its economic base, contributing to impressive levels of growth despite limited mineral resources. It has the potential to be a middle income economy by 2045,[229] which could have a positive impact on infrastructure development in the wider Horn of Africa region. Ethiopia is already investing in transport infrastructure, having reduced the average distance to an all-weather road from 21 kilometres in 1997 to 12.4 kilometres in 2012, and will be keen to make further improvements in its road

229 African Development Bank, Organisation for Economic Co-operation and Development, UN Development Programme (2015), 'African Economic Outlook 2015', available at http://www.africaneconomicoutlook.org/en/telechargements

and rail links to ports on the eastern seaboard over the coming decades.[230] However, ongoing border disputes within the Horn of Africa region may limit the potential for economic cooperation and trade links in some areas of the region, if these remain unaddressed out to 2045.

Human development. Horn of Africa countries currently score poorly on the Human Development Index, with even Djibouti, as the highest performer, ranked at only 168 out of 188 countries, and all others among the bottom 20 performers.[231] Although efforts are being made to address this in some parts of the region, for example Ethiopia, the drive for future development is hampered by a lack of cooperation among the country's population groups, a strong suspicion of centralised government, and a continued (albeit improving) lack of infrastructure in rural areas, which hinders the provision of services to the rural population. In other cases, continued instability and poor economic performance will continue to impede progress out to 2045, meaning that some of the region's countries are likely to remain towards the bottom of the performance table for the foreseeable future.

Governance. The Horn of Africa is likely to retain some degree of instability out to 2045, as governments across the region, some already weak, are challenged further by rapid population growth, socio-economic pressures and the effects of climate change. Some countries (notably Somalia) are likely to experience

a continued lack of state capacity in peripheral areas; in other cases, increased engagement by the state with regions that have previously enjoyed relative autonomy could result in conflict. Out to 2045 there will remain the potential for power vacuums to arise if state authority collapses within the region; other actors, potentially extremists, may seek to fill these. In particular, radical Islam may be used to gather adherents among disenfranchised members of the Horn of Africa's Muslim population, leading to new divisions in society. Where state capacity remains weak, traditional legal systems (including those based on Sharia law) could increasingly represent an alternative form of governance for some – providing alternative laws, rules and institutions, often in parallel or in conflict with existing state structures.

Geopolitics. Tensions are likely to continue out to 2045 both within the region – for example, between Ethiopia and Eritrea – and with countries in the wider East Africa region, with both Ethiopia and Kenya regarding themselves as regional hegemons. As a result, the potential for regional cooperation is likely to remain limited. In particular, the effectiveness of the Intergovernmental Authority on Development (IGAD) is hampered by ongoing competition between Ethiopia and Kenya. The period out to 2045 may see the resurgence of the East African Community as an alternative regional body in competition to IGAD, as member countries seek to group together for economic advantage and to balance Ethiopian influence.

At the global level, maritime trade is likely to increase as African economies develop, and the significance of the Indian Ocean and with it the Horn of Africa's eastern seaboard ports is likely to increase further out to 2045. Middle Eastern

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230 African Development Bank, (2014), 'Tracking Africa's Progress in Figures', available at http://www.afdb.org/fileadmin/uploads/ afdb/Documents/Publications/Tracking_ Africa%E2%80%99s_Progress_in_Figures.pdf

231 UN Development Programme Human Development Index 2015, available at http://hdr.undp.org/en/composite/HDI

interest in the region appears set to increase, with both Qatar and the United Arab Emirates currently competing for influence through financial and business investments; whilst these investments clearly have an economic aspect, the aim appears to be, at least in part, political. At the same time, these countries may find themselves in increasing competition with India, which may seek to increase its influence over Africa's eastern seaboard over the next three decades, as the Indian Ocean increases in importance as a trade route and India's trade with countries across Africa increases.[232]

Security. Global attention towards the security situation in the Horn of Africa region is likely to remain focused on the Islamist extremist threat, which is likely to continue in some form out to 2045, and in particular on the control of territory within the region by Islamist extremist movements, giving them a secure base from which global jihadists may seek to operate. The increasing penetration of social media and global television networks (for example, al Jazeera) in the region may promote a more global religious outlook, which in some cases may encourage the development of a more cosmopolitan mind-set but in others may lead to an increase in Salafism and in some cases radicalisation. Where this occurs, extremist violence may polarise mixed religious societies and reduce religious tolerance, trapping parts of the region in a vicious cycle of violence. At the same time, the potential for state-on-state conflict in the region will not disappear out to 2045, and may even increase as state armed forces become more capable and if leaders attempt to use force to settle the unresolved border disputes which still exist in the region.

In terms of maritime security, Ethiopia in particular will experience an increasing need for access to the sea for economic and trade opportunities, and its desire to maintain and improve access may set the security relationships for the whole Horn of Africa region out to 2045. However, despite attempts to improve maritime security to support trade flows, piracy, smuggling, small arms flows and other criminal maritime activities will continue to present a challenge to regional governments out to 2045.
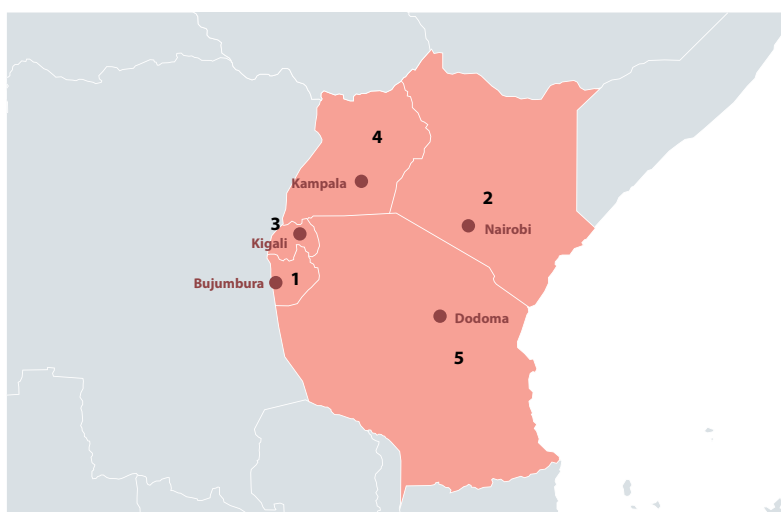
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232 UN Economic Commission for Africa and the Confederation of Indian Industry, (2015), 'Africa-India Facts and Figures 2015', available at http://www.uneca.org/sites/default/files/PublicationFiles/africaindia_ff_17oct_rev4.pdf

East Africa

1 Burundi
2 Kenya
3 Rwanda
4 Uganda
5 United Republic of Tanzania

East Africa, which comprises Burundi, Kenya, Rwanda, Uganda and Tanzania, contains one of the fastest growing cities in sub-Saharan Africa and two of the most densely populated countries. Out to 2045, the region will continue to experience strong economic growth. However, corruption and terrorist activity in the bordering countries of Somalia and DRC will remain a cause for concern out to 2045. The direction of Burundi in particular is uncertain; in the short term there is likely to be greater instability in the country, but in the long term the situation may stabilise.

East Africa is made up of six countries which all belong to the East Africa Community (EAC). This organisation is fairly homogenous in terms of ethnicity and historical background, although Burundi, Rwanda and South Sudan are only recent joiners. However, it is not one of the five organisations designated by the AU as Regional Economic Communities (RECs). The countries of East Africa are divided between three of these RECs, and this underlines a growing reality that many parts of East Africa, including regions within countries, are more closely aligned with their external neighbours than each other. Most obviously, Uganda, Rwanda and Burundi are closely linked with eastern DRC in what is known as the Great Lakes Region. Historically this region has been unstable and some underlying dynamics (for example, likely population growth) indicate that it will remain so. However, better infrastructure, allowing movement of raw minerals out of this mineral wealthy region, may change this over the next 30 years. This emphasises that the inland countries are dependent on the coastal countries for the movement of goods, ensuring that they will continue to work together. Large-scale development of infrastructure is already the current planning focus for governments in this region, which recognise that economic progress is vital for stability. These pressures may result in a blurring of boundaries between countries, which may remain starker elsewhere on the continent. On current projections, the coastal countries of Kenya and Tanzania are likely to prosper in a similar way to Southern Africa, consolidating their socio-economic and political gains out to 2045, whilst the countries in the Great

Lakes Region may join them if they can reduce or stop major bouts of instability.

Environment. Shaped by global plate tectonic forces that created the East African Rift, East Africa is the site of Mount Kilimanjaro and Mount Kenya, the two tallest peaks in Africa. It also includes the world's second largest freshwater lake, Lake Victoria, and the world's second deepest lake, Lake Tanganyika. Lake Victoria is relatively shallow in comparison to its surface area and has limited river inflow from the surrounding regions, making it particular susceptible to changes in rainfall patterns.[233] Rainfall over much of East Africa is highly seasonal, with many communities being plagued by lack of water during the dry season. With climate impact models predicting the number of days in drought and the average temperature for the region increasing,[234] the effect on the area around Lake Victoria and the rain-fed agricultural industry could be significant. Unless there is adequate policy and investment in water infrastructure and storage, water and food security will increasingly become a source of tension in the region out to 2045.[235] Rising sea levels will also be of concern to coastal cities and to the islands of Pemba and Zanzibar.

Demographics. The population in East Africa is likely to rise from 165 million today to 290 million in 2045, with the percentage of people living in urban areas increasing from 25% to 40%.[236] Dar es Salaam will see the largest increase, almost tripling in size, making it the fastest growing urban population in Africa.[237] Inflation on this scale could be a 'double-edged sword' resulting in extremes of poverty and prosperity co-existing in the same urban environment, which could lead to differences in lifestyle, political choice and identity.[238]

Ignoring the island states of Mayotte and Mauritius, Rwanda and Burundi currently have the largest population density in sub-Saharan Africa, with forecasts suggesting that current levels will almost double out to 2045.[239] This increase will put pressure on land occupation in both countries, potentially fuelling tensions between the majority Hutu and minority Tutsi ethnic groups.

Human development. Since 1999, spending on education has increased across East Africa with the largest investment taking place in Tanzania, which increased its spending dramatically from 2% of gross national product (GNP) in 1999 to 6.2% in 2010.[240] Kenya has also been consistent, spending on average 5% of its GNP since 1999 on education,

233 Lake Scientist, (2011), Lake Victoria once ran dry, according to new research', available at http://www.lakescientist.com/lake-victoria-once-ran-dry-according-to-new-research/

234 Richardson, K., Met Office Hadley Centre (2015), 'Climate Change in Africa: a review to inform DCDC's Africa Regional Survey 2045'.

235 International Water Management Institutes, (2014), 'IWMI Research East Africa', available at http://www.iwmi.cgiar.org/Publications/Other/PDF/iwmi_research_in_east_africa-brochure.pdf

236 Forecasts based on World Bank data using a double moving average method, available at http://data.worldbank.org/

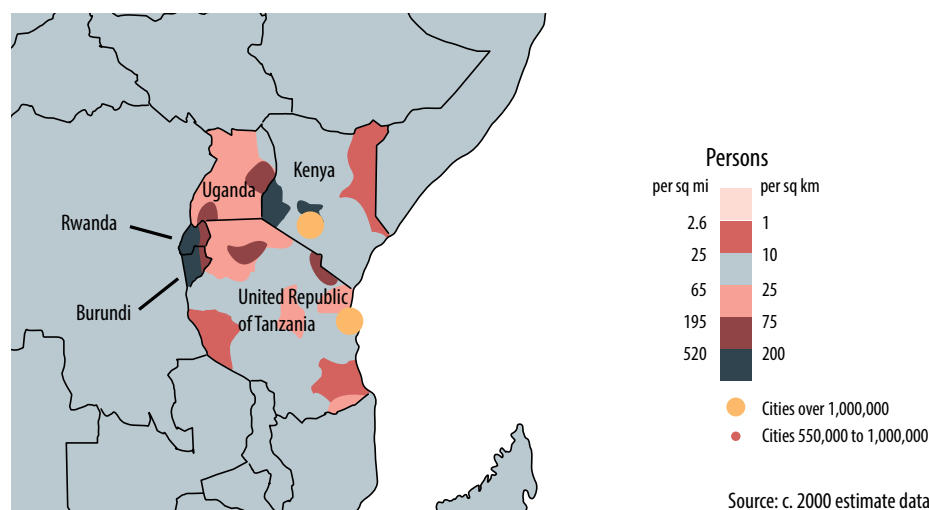237 Citylab, (2015), 'The Bright Future of Dar es Salaam, an Unlikely African Megacity', available at http://www.citylab.com/design/2015/02/the-bright-future-of-dar-es-salaam-an-unlikely-african-megacity/385801,

238 Society for International Development, (2010), 'Greater Horn Outlook', available at http://www.sidint.net/sites/www.sidint.net/files/docs/RF06_june2010.pdf

239 Forecasts based on World Bank data using a double moving average method, available at http://data.worldbank.org/

240 UNESCO, Institute of Statistics Database, available at http://data.uis.unesco.org/

Map of population density in East Africa

Persons	
per sq mi	per sq km
2.6	1
25	10
65	25
195	75
520	200

● Cities over 1,000,000

● Cities 550,000 to 1,000,000

Source: c. 2000 estimate data

seeing a net enrolment ratio rise from 62% in 1999 to 83% in 2009.[241] Access to education will increase across East Africa, although it will remain unequal, with children living in the urban environment, or from rich households, having greater access. Inequality, driven by the lack of access to education, will still be an issue into the long- and short-term future, with divisions caused by inadequate infrastructure (through rapid urbanisation) and differences between the rural and urban population. However, technology could have a positive effect on reducing this inequality, by enhancing the quality and type of education being delivered, as well as providing greater access to economic mobility.

Economy. During the past decade, average economic growth in East Africa has been consistently strong, and above that experienced in previous decades. Average growth in GDP across the five

countries has been 4% or higher.[242] In the short term, this growth is expected to remain consistent; however, in the long term it is expected to slow and become increasingly susceptible to global economic shocks.[243] This growth will be dependent on the development of infrastructure, in particular energy,[244] to sustain it. The Eastern Electricity Highway Project,[245] connecting Ethiopia and Kenya's electricity grids, is a positive sign that this is being addressed; however, there will still need to be significant investment if it is to keep pace with the

241 UNESCO, 'Education for All, Regional fact Sheet', available at http://unesdoc.unesco.org/images/0021/002193/219351e.pdf

242 Gigineishvili, N., *et al*, (2014), 'How Solid Is Economic Growth in the East African Community', page 4, available at https://www.imf.org/external/pubs/ft/wp/2014/wp14150.pdf
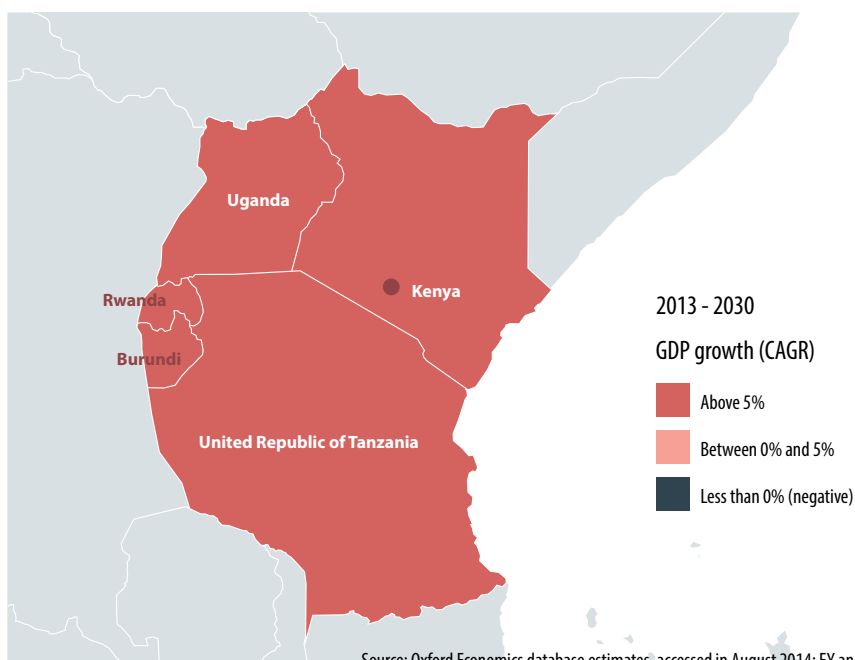
243 *Ibid.*, page 7.

244 African Development Bank, (2013), 'State of Infrastructure in East Africa', page 9, available at http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Economic_Brief_-_State_of_Infrastructure_in_East_Africa.pdf

245 The World Bank, (2016) 'The Eastern Electricity Highway Project under the First Phase of the Eastern Africa Power Integration Program', available at http://www.worldbank.org/projects/P126579/regional-eastern-africa-power-pool-project-apl1?lang=en

Map of economic growth in East Africa

2013 - 2030

GDP growth (CAGR)

- Above 5%
- Between 0% and 5%
- Less than 0% (negative)

Source: Oxford Economics database estimates, accessed in August 2014; EY analysis

rapid urbanisation occurring across the region. Currently, transport costs in East Africa are on average 60% higher than those in the United States or Europe,[246] but as investment in the transport infrastructure improves across the region this cost will fall further, expanding the East African economy.[247] Corruption and political instability will continue to present challenges to the development of the East African economy,[248] although open source information and a better developed mobile phone payment system will have positive effects on identifying corruption at all levels into the future, boosting economic prospects.[249,250]

Governance. Political systems throughout East Africa vary significantly. Tanzania has a dominant, multiparty

246 How we made it in Africa, (2015), 'Interview: Transport costs in East Africa 60% higher than in US and Europe', available at http://www.howwemadeitinafrica.com/interview-transport-costs-in-east-africa-60-higher-than-in-us-and-europe/

247 The World Bank, (2014), 'World Bank Group to provide $1.2 billion to improve infrastructure and competitiveness of East African Community', available at http://www.worldbank.org/en/news/press-release/2014/11/29/world-bank-group-to-provide-12-billion-to-improve-infrastructure-and-competitiveness-of-east-african-community

248 Price Waterhouse Coopers, (2014), 'Capital Projects and Infrastructure East Africa, Southern Africa and West Africa', page 15, available at https://www.pwc.co.za/en/assets/pdf/capital-projects-and-infrastructure.pdf

249 Transparency International, (2012), 'Use of mobile phones to detect and deter corruption', available at http://www.u4.no/publications/use-of-mobile-phones-to-detect-and-deter-corruption/downloadasset/2701

250 Ihub Research, (2014), 'ICT and Governance in East Africa: A Landscape Analysis in Kenya, Uganda and Tanzania 2014', available at http://ihub.co.ke/ict4gov

system of governance with a ruling party that has been in power since 1961, and it is one of Africa's most stable countries. This stability is expected to continue in the near and long-term future, although frictions with the islands of Zanzibar and Pemba and a trend of greater inequality through economic development[251] may cause tensions.

Kenya has a two party system and is currently undergoing a rapid system of devolution to vest more power in local county governments. The process is in its early stages and comes at significant cost and with a high risk of corruption.[252] How this will influence the political situation in the long term is hard to tell; however, if it works as intended it may reduce marginalisation and provide political stability in the future.

Landlocked Uganda has a highly centralised electoral autocracy which revolves around President Yoweri Museveni. With the government dependent on uncertain oil revenues to fund basic social services and the increasing trend for urbanisation changing the character of the political vote, the future of Uganda's political development is uncertain.[253]

Rwandan politics are dominated by the ruling party, the Rwandan Patriotic Front. The country has seen strong economic and social development and has relatively little corruption compared with neighbouring countries.[254] Rwanda is likely to remain stable in the near to long-term future; however, pressure from an increasing urban population and the possible lack of political reform may see Rwanda's development stall out to 2045.

In the last two years Burundi has seen a failed coup and numerous violent protests against the current government. The issue of land reform, combined with high population density, as well as continuing tensions between Hutus and Tutsis, suggest that Burundi will become less stable in the short term with uncertainty about its long-term stability.

Geopolitics. East Africa is a geographically and economically rich region committed to regional integration. The EAC consists of Burundi, Rwanda, Tanzania, Uganda (all of which are least developed countries) and Kenya.[255] The EAC is strongly political in nature with the long-term aim of federalisation, which may give the region a stronger trade position with the rest of the world in the future.[256] The EAC trading relationships are complicated through the existence of competing trade blocs and bilateral agreements such as the Southern Africa Development Community, the Common Market for Eastern and Southern Africa and the Intergovernmental Authority on Development. These trading and political relationships will evolve, with some becoming stronger in the long term as the economy of the region develops.

251 Menas Associates, (2016), 'East Africa Politics and Security', available at https://www.menas.co.uk/publications/east-africa-politics-security/

252 Oxford Business Group, (2014), 'Kenya Devolution still Evolving', available at http://www.oxfordbusinessgroup.com/news/kenya-devolution-still-evolving

253 Barkan, J., CSIS Africa Program, (2011), 'Uganda Assessing Risks to Stability', available at http://www.csis.org/files/publication/110623_Barkan_Uganda_Web.pdf

254 The World Bank, (2016), 'Rwanda Overview', available at http://www.worldbank.org/en/country/rwanda/overview.

255 EcoBank, (2013), 'Trade in the East African Community', available at http://www.ecobank.com upload/20131008045919295694 6Ubp43NNju.pdf

256 East African Community, Member Countries, available at http://www.eac.int/

Security. The threat from terrorist attacks or politically motivated violence is an ongoing issue for East Africa. Kenya and Uganda's role in Somalia has made them a target for al Shabaab attacks. Kenya has also witnessed internal issues which have led to violent ethnic clashes caused by political rivalries, tensions over resources, and the marginalisation of some communities.[257] For both Uganda and Kenya, the threat of politically motivated violence and terrorist attacks will be an ongoing issue.[258] Tanzania also experiences small-scale political unrest, including violence and conflict, and is likely to continue to do so into the future.[259] The Democratic Forces for the Liberation of Rwanda will continue to be a security threat for Rwanda, although the reduction in corruption and promising economic prospects for Rwanda will help

mitigate this threat into the short- and long-term future. However, politically motivated violence in Rwanda may become an issue in the long-term future as regimes change. It is uncertain how the current security situation in Burundi may evolve after the political unrest and attempted coup in 2015,[260] which has the potential to destabilise the country and the surrounding region. The stabilising effect of military alliances around the region, such as the East Africa Regional Standby Force[261] may help manage the situation and prevent it escalating into surrounding countries, but this will be only a short-term solution, with the long-term stability of the country remaining uncertain.

257 Menas Associates, 'East Africa Politics and Security', available at https://www.menas.co.uk/publications/east-africa-politics-security/

258 BBC, 'Uganda Country Profile', available at http://www.bbc.co.uk/news/world-africa-14107906

259 LeSage, A., Institute for National Strategic Studies, (2014), 'The Rising Terrorist Threat in Tanzania: Domestic Islamist Militancy and Regional Threats', available at https://www.ciaonet.org/attachments/26732/uploads

260 The Guardian, (2015), Burundi unrest: African Union to send 5000 peacekeepers to tackle growing violence', available at http://www.theguardian.com/world/2015/dec/19/african-union-to-send-5000-peacekeepers-to-tackle-growing-violence
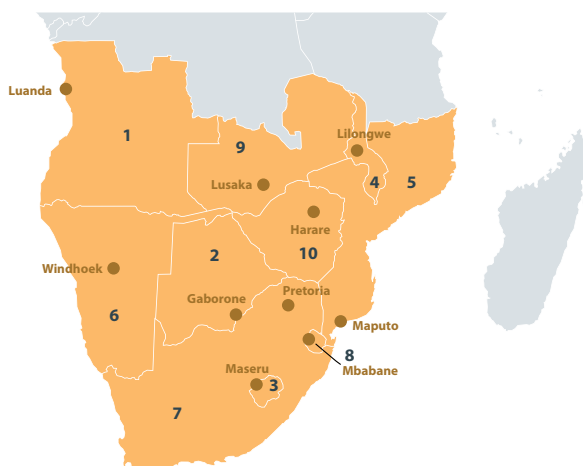
261 The New Times, (2015), 'East Africa: Regional Standby Force invited as African Union Meets Over Burundi', available at http://allafrica.com/stories/201511160846.html

Southern Africa

1	Angola	**6**	Namibia
2	Botswana	**7**	South Africa
3	Lesotho	**8**	Swaziland
4	Malawi	**9**	Zambia
5	Mozambique	**10**	Zimbabwe

Southern Africa, comprising Angola, Namibia, South Africa, Lesotho, Swaziland, Mozambique, Botswana, Zimbabwe, Zambia and Malawi, can be characterised as another region of great diversity.

Southern Africa has been the most stable region in Africa since the beginning of the 21st Century, and it looks set to consolidate that stability as economic growth continues to lead social development. However, South Africa, Zimbabwe and to a lesser extent Namibia all have post-independence transitions to complete, and these may cause strife over the next ten years. In the case of South Africa, civil disturbance there could affect the whole region due to its economic dominance. Nevertheless, state and regional institutions are expected to develop further, reducing the threat and risks of such trouble, particularly if the general population is granted better access to social services by their governments. If development continues at current rates, it is probable that Southern Africa will become increasingly interlinked with the remainder of the world, with the attendant rewards and risks. It is also possible that further trouble will occur towards 2045 in countries where elites fail to allow others access to power.

Environment. Southern Africa experiences a range of climate regimes. It is hotter in the north and dry in the west, with seasonal rains in the east. Food security varies, and there are some areas of water stress. Populations are expected to increase most rapidly in the northern part of the region, where food security issues already exist. The east coast is exposed to tropical cyclones. Several cities are located on the coast and hence are vulnerable to flooding as sea levels rise and the intensity of storms increases. Climate projections show a significant warming across the region, particularly in inland areas. Rainfall projections indicate a drying tendency, particularly in the already dry west and south-west parts of the region.[262] Heatwaves and longer periods of drought will have a severe impact on agricultural production in this region if not mitigated. However, the challenges that are likely to be

262 Richardson, K., Met Office Hadley Centre, (2015) 'Climate change in Africa; a review to inform DCDC's Africa Regional Survey 2045'.

caused by climate change and the need for adaptation measures are widely recognised in the region. A number of the countries in Southern Africa have an advanced agricultural sector and a relatively good capacity to adjust to climate change. Growing awareness of the importance of urban food production has led to a reappraisal throughout the region and is likely to lead to improved nutrition for the urban poor.[263] Food emergencies and extreme weather events are likely to drive forced migration in some parts of the region.

Demographics. The population of Southern Africa is expected to grow from 156 million in 2015 to 281 million in 2045.[264] South Africa is likely to remain the most populous country in the region out to 2045 but closely followed by Mozambique, Angola and Madagascar. Some of the countries in Southern Africa such as South Africa, Botswana and Zimbabwe, have considerably lower birth rates than the rest of Africa, while countries such as Zambia, Mozambique and Angola are expected to have high birth rates out to 2045.

After North Africa, Southern Africa is the most urbanised region of Africa. It is projected to reach an urban majority within the next decade; Mozambique, Swaziland and Lesotho, however, are expected to remain predominantly rural by 2045.[265] Two (of the six) cities in Southern Africa forecast to become mega cities by 2045 – Luanda and Johannesburg – are found in the region. However, the most rapidly growing cities in the region out to 2045 are Lusaka in Zambia together with Maputo and Matola in Mozambique. Although urban planning takes place, all of the major cities in Southern Africa have large and rapidly growing areas of unplanned growth and a high level of urban sprawl, something that is likely to continue due to population growth and migration.[266] Many urban areas in this region, however, have relatively modern and developed infrastructure and this is expected to develop further out to 2045, driven by increasing regional trade and diversifying economies.[267] Maintaining and modernising infrastructure, such as the electricity supply, will be a major challenge in urban development in Southern Africa. Parts of the region are likely to see the rapid development of cheap renewable energy on a wider scale as a way to provide electricity more efficiently and outside the existing grids.[268]

Human development. There is huge diversity in standards of human development across Southern Africa. South Africa, Botswana, Namibia and Zimbabwe have a considerably higher level of development than the other nations, where poverty is likely to

263 UNHABITAT, (2014), 'State of the African Cities 2014', available at http://unhabitat.org/books/state-of-african-cities-2014-re-imagining-sustainable-urban-transitions/state-of-african-cities-2014-re-imagining-sustainable-urban-transitions/

264 UN Population Division, (2015), 'World Population Prospects' 2015, available at https://esa.un.org/unpd/wpp/

265 UN Population Division, (2014), 'World Urbanisation Prospects', available at https://esa.un.org/unpd/wup/

266 UNHABITAT, (2014), 'The State of Planning in Africa', available at http://unhabitat.org/the-state-of-planning-in-africa/

267 UN HABITAT, (2014), 'The State of African Cities 2014', available at http://unhabitat.org/books/state-of-african-cities-2014-re-imagining-sustainable-urban-transitions/state-of-african-cities-2014-re-imagining-sustainable-urban-transitions/

268 ISS, (2015), 'Green Cape 2040: Towards a smarter grid', available at https://www.issafrica.org/futures/policy-brief/green-cape-2040-towards-a-smarter-grid

remain a challenge. The literacy levels in Southern Africa differ significantly but are generally higher than in the rest of sub-Saharan Africa, with the highest levels in South Africa and Botswana and the lowest in Angola.[269] The demand for skilled labour is high in the region and graduate unemployment low. However, the capacity of the higher educational system is not likely to meet the increasing demand out to 2045.[270] Private education on all levels, supported by information technology and interconnectivity, is likely to expand rapidly throughout the region out to 2045.[271]

HIV, malaria and other communicable diseases pose severe challenges and have had a negative impact on the population balance (reducing the youth population) in some areas of Southern Africa. However, improvements in health care, although varying across the region, will change health patterns in general; non-communicable and lifestyle related diseases will count for the majority of deaths within a decade. In common with other African regions, Southern Africa shares the challenge of an imbalance of health care provision between urban and rural areas. Nevertheless, the introduction of virtual doctors in poor remote rural areas in Zambia shows the potential of technology to improve local primary health care for poorer parts of the region.[272]

Economy. Southern Africa is more highly integrated in the global economy than most other parts of sub-Saharan

Africa and hence more vulnerable to global shocks and downturns. Demand from China and India remained high during the financial crisis of 2008 and these countries are likely to remain major export destinations throughout the period for Southern African products. With a growing middle class, developing regional trade opportunities, abundant resources (including huge mineral deposits), the potential for high productivity agriculture, and world-class businesses (for example, in the financial services sector) in some countries, the region has huge potential for growth out to 2045. The less developed countries in the northern part of the region are likely to see a comparatively higher growth than the more developed southern countries. For it to realise its potential, however, the region's governments will need to undertake difficult structural reforms across their economies. An example of this is the National Development Plan in South Africa which provides a template for reform across the South African economy; if implemented fully it is estimated that it will raise growth by around 6%. This would make serious inroads into tackling South Africa's triple challenges of unemployment, inequality and poverty.[273] How successful this will be comes back to good governance and the political environment in the countries in question.

Huge disparities in wealth are likely to make parts of Southern Africa attractive to migrants from poorer parts of the region and from the rest of Africa. Migration could be a driver for tensions and unrest in the receiving areas. In particular, youth unemployment is a major problem in large parts of the region

269 UNESCO, (2010), statistics database, available at http://www.uis.unesco.org/Pages/default.aspx

270 Discussion with Greg Mills, Brenthurst Foundation, Pretoria, during the DCDC engagement in South Africa.

271 *Ibid*.

272 www.virtualdoctors.org

273 Herbst, J., and Mills, G., (2015), 'How South Africa Works – and must do better'.

Map of economic growth in Southern Africa

2013 - 2030

GDP growth (CAGR)

- Above 5%
- Between 0% and 5%
- Less than 0% (negative)
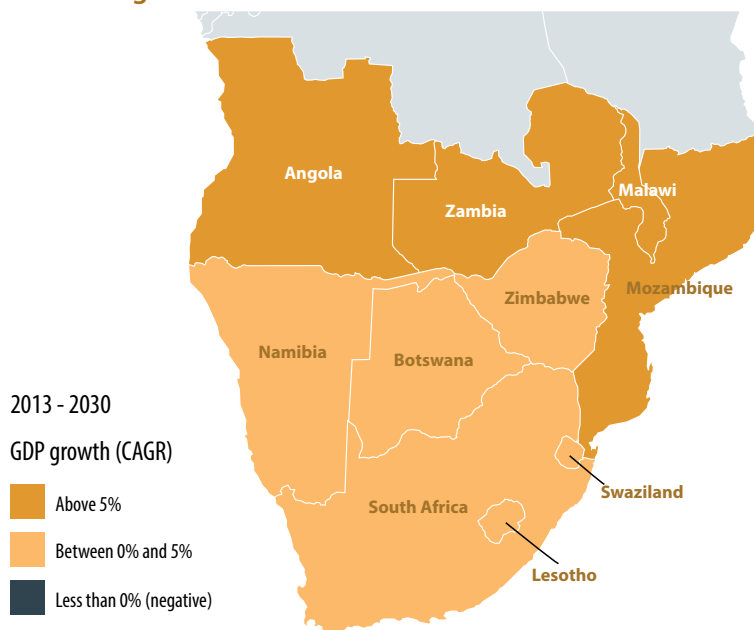
Source: Oxford Economics database estimates, accessed in August 2014; EY analysis

and the estimated economic growth is not likely to be sufficient to meet the increasing demand for employment. The informal economy will remain an important part of the region's economic activity out to 2045.

Governance. The political legacy from the anti-apartheid struggle, which engaged the entire region, and the civil wars which followed the independence struggles in Angola and Mozambique is still strong and likely to remain so for some time. The two longest ruling leaders in the region are President Dos Santos (37 years) in Angola and President Mugabe (36 years) in Zimbabwe, both of whom gained power shortly after their countries gained independence. Some countries in the region still have issues with discredited political systems. However, the current political establishment is likely to be increasingly challenged by the 'Born Free' generation

and growing political competition. With South Africa at the forefront, the breaking down of barriers between religious and ethnic groups, and the establishment of credible opposition parties based on broader political platforms, have developed more quickly in Southern Africa than elsewhere on the continent.

Power in Angola is likely to remain in the hands of the ruling MPLA (People's Movement for the Liberation of Angola) for some time to come, but the regime will be increasingly challenged by a growing opposition and difficulties in expanding the economy due to a lack of diversification and structural reforms. In Zimbabwe, the outcome of the eventual power transition remains uncertain but two principal scenarios can be identified. One is where the new elite continues to try to consolidate its power at the expense of economic development, a scenario which is likely to be

accompanied with instability. The other scenario is a gradual democratisation, as experienced in Zambia, and as a result the long-term recovery of the economy. As the first scenario is likely to be a short-term outcome, there is still the possibility of long-term recovery after a period of instability. Ideological divisions within established ruling parties may also eventually bring greater dynamism to the political landscape. Developments in South African politics will have a demonstration effect beyond the country's borders, especially if improvements in governance can be achieved. In general, power transitions and unrest following contested elections within discredited political systems can be expected in a number of countries in Southern Africa over the coming decade. The land ownership issue may also become a serious challenge in parts of the region, with the potential for it to be politicised and drive unrest out to 2045.

Geopolitics. South Africa is the most developed country and diversified economy of sub-Saharan Africa, and one of the largest. As a result it dominates the Southern African Development Community economically and is a rival to Nigeria at the continental level. However, whilst it has plenty of room to develop further, this is likely to be a slower process, meaning that its position will weaken relative to others who are starting from a lower threshold. This, combined with a much smaller population and lower growth than Nigeria, indicates that it will increasingly lose relative influence to its 'rival', although its satellite television system will continue to give it soft power influence until a rival is created. Within the Southern African Development Community, South Africa will remain the regional hegemon for some years to come, although Angola has ambitions to

challenge this. However, South Africa's real influence may lie in its high-tech military equipment, particularly naval and air, which mean that it will remain the only sub-Saharan African country with true deep water capability, allowing it to increase its links with South American and other countries. This, with its strategic location, will make it a strategic partner of choice, as countries such as China seek to become global powers.

Security. Although the urban areas of Southern Africa have some level of economic diversification, stark levels of inequality are likely to remain a challenge out to 2045. When combined with extensive youth unemployment, this may lead to high levels of crime, which is likely to be a particularly important security challenge in this region out to 2045. In South Africa, for instance, the number of private security guards currently outnumbers the police and army combined.[274] Grand-scale corruption, major illicit financial flows out of the region and organised crime are likely to remain the major security challenges in the region out to 2045, although efforts to counter them through international cooperation will be developed.[275] However, with growing military capabilities and regional competition over influence and resources, future state-on-state conflicts cannot be ruled out within the timescale.

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274 South African Private Security Industry Regulatory Authority (PSIRA) annual report 2013/14. According to the report the South African security industry employs 487,058 active people while the police employs 194,852 people and the South African National Defence Force consist of 78,707 active people.

275 UN Economic Commission for Africa, (2016), 'African Governance Report IV', Report of the High Level Panel on Illicit Flows from Africa 'Illicit Financial Flows' (2015) and ISS, (2013), 'The evolution of organised crime in Africa'.

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