

Future of Food in Africa

Embracing the future of food to address key challenges in Africa and beyond

October 2023





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Foreword

The *Future of Food* is a global cross-sector initiative by Deloitte, aimed at accelerating the adoption of more sustainable food production and business practices from farm to fork. We have developed a local point of view on the *Future of Food in Africa* which will form part of the global *Future of Food* series aimed at developing a sustainable food system.

As a purpose-led organisation, Deloitte strives to have a sustainable impact on our clients, our people and for society at large. Food is among the strongest levers for improving human health and environmental sustainability. Deloitte Africa's strategic intent of Purpose Beyond Profit is to drive change towards a sustainable agri-food system for the African continent and address how we grow, produce, and consume food in the future.

Our main objective for this report is to start the conversation with agri-food sector stakeholders to develop a transformation roadmap to catalyse change within the agri-food ecosystem in Africa: from a traditional production and consumption model to one based on innovation and sustainability. We believe this evolution will empower companies along the food value chain to improve the supply of and access to affordable, sustainable, and nutritious food in Africa.

It is no secret that Africa's agri-food sector faces numerous hurdles on the back of a rapidly increasing population, including limited access to industrialised farming techniques, climate change impacts, inadequate infrastructure, geopolitics, and post-harvest losses. These challenges negatively impact food production and livelihoods, and ultimately contribute to food insecurity on the continent. We have prioritised five key themes that we believe can contribute to the transformation of the sector and will address the sustainability of the agri-food ecosystem in Africa.

Together, by applying innovative strategies we can unlock the social and economic opportunities of Africa's agriculture sector. By harnessing these opportunities, we could feed Africa and many other parts of the world if we build efficiencies, invest in mechanisation and modern agricultural technology given the share of uncultivated arable land in Africa.

We at Deloitte hope you find the *Future of Food in Africa* report insightful and valuable, and we look forward to your feedback.



Setting the scene

Agriculture plays a critical role in Africa. On the one side, agriculture is the backbone of many African economies providing the livelihood for millions of people on the continent. According to the World Bank, agriculture, forestry, and fishing contribute close to 20% of annual GDP in Africa – this is the highest contribution across all regions in the world.¹ In addition, the sector is the key employer on the continent, providing employment (formal and informal) to approximately 43% of Africa's people. On the other side, it quite literally puts food on tables across the continent and beyond. With an estimated 65% of the world's remaining uncultivated arable land, Africa also holds one of the keys to feeding itself and the world going forward.²



According to the United Nations, Africa's population will almost double, growing to more than 2.5 billion people by 2050.³ This significant acceleration of the population in Africa will enormously affect the demand and supply of food production if the agriculture sector remains the same. For Africa to feed its population and fully unlock its potential and strengthen its food system, various measures need to be taken such as modernising agriculture, amplifying the impact of smallholder farmers, reducing post-harvest losses and focusing on sustainable farming.

Despite its massive agricultural potential, Africa currently struggles to feed its people and at least one in five Africans goes hungry and an estimated 140 million people in Africa face acute food insecurity.⁴ The African Development Bank (AfDB) estimates that more than 200 million children on the continent suffer from stunting and malnutrition, which is the second most common cause of death among children in Africa.⁵

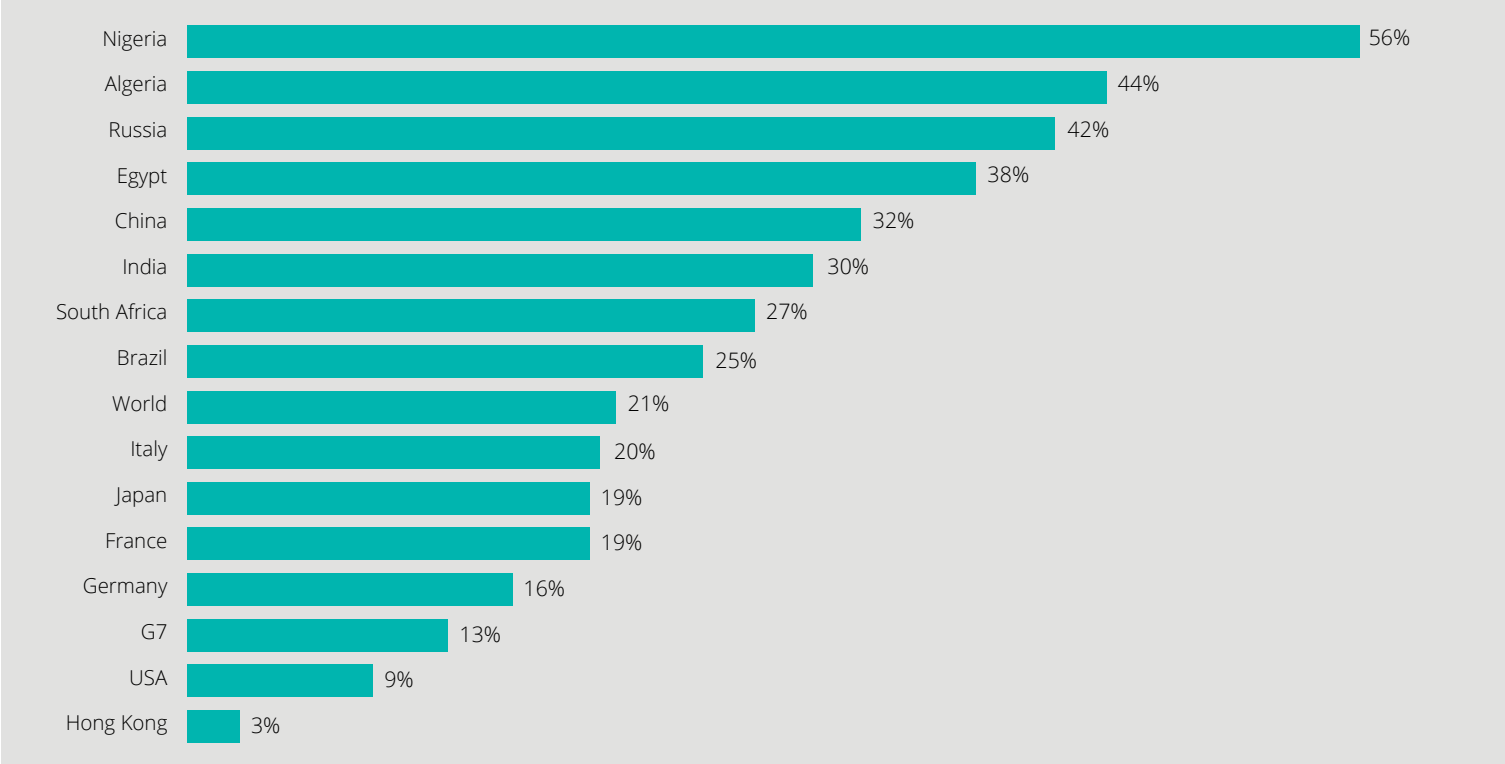
The current structures of the agricultural and food value chain on the continent need to be transformed to unlock the continent's potential. The International Fund for Agricultural Development (IFAD) estimates that Africa's 33 million smallholder farms provide more than two-thirds of food supply for the continent.⁶ Smallholder farmers grow about 70% of the food that Africans consume⁷ and produce about 10% of the world's agricultural output.⁸ Given the high dependency on smallholder farmers and a massive food import bill⁹, it will be challenging to provide access to sufficient and sustainable food at affordable prices to Africa's rapidly expanding population. Smallholder farmers often lack access to markets, investments and technologies that would allow them to achieve economies of scale and increase their productivity or yields.

Even for countries such as South Africa, which has a relatively well-developed and sophisticated agricultural sector with many large and mechanised farms, a redesign of food value chains will be critical. South Africa, for instance, is self-sufficient in maize, but it remains import dependent on other critical agricultural products and inputs such as rice, palm oil, wheat, and poultry.¹⁰

Persistently high food prices made 2022 a terrible year for many consumers globally. High energy and transportation prices, rising labour costs and the fallout from the Russia-Ukraine conflict pushed food prices up across the world. High food price inflation hit African consumers the hardest, according to Deloitte's Food Frugality Index, consumers continue to switch to cheaper products, only buy essential food and are buying less than what they wanted.¹¹ This has led to an increase in food insecurity in many countries on the continent.

Given the relatively high share of household spending allocated to food in many households across the continent, the impact of rising food prices is more severe than, for instance, in Western European or North American countries. According to the Economist Intelligence Unit (EIU), the average Nigerian consumer, for instance, spent about 56% of her overall spending on food, beverages, and tobacco in 2022. Other African countries such as Algeria, Egypt, and South Africa spent 44.1%, 37.8%, and 27.2% on food, beverages, and tobacco respectively. This is in sharp contrast to consumers in the United States, who spent less than 10% of their expenditure on these items.

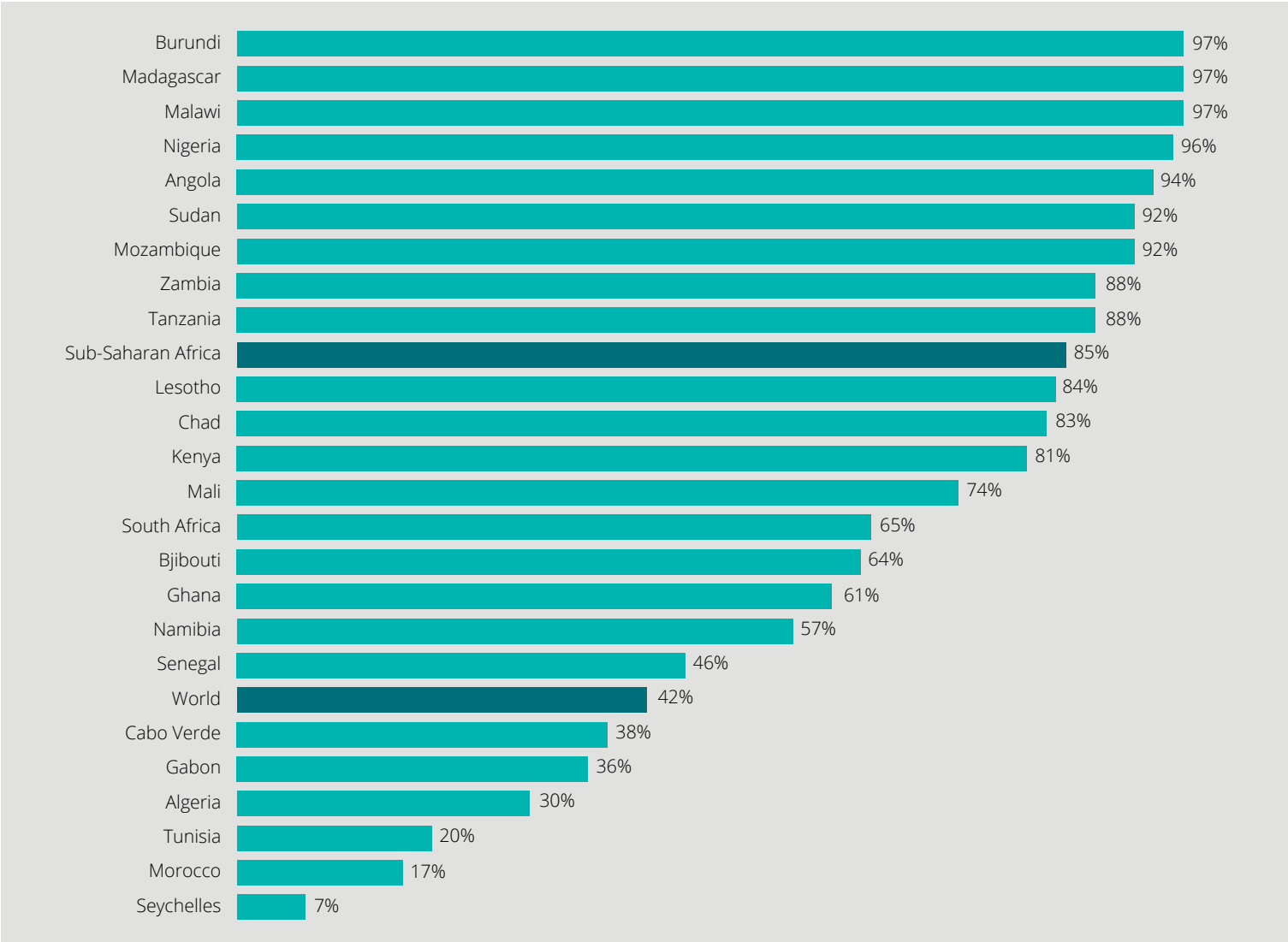
Consumer expenditure on food, beverages and tobacco, as a % of total consumer expenditure (2022)



The high propensity to spend on food combined with widespread poverty and stubbornly high food prices has not only led to an increase in the number of people unable to feed their families, but also negatively impacts the ability for households to afford nutritious or healthy food. The World Bank estimates that in 2020 more than three billion people or roughly 40% of the world's population, couldn't afford a healthy diet. In Sub-Saharan Africa the share of people unable to afford a healthy diet was around 85% the same year.¹² Given the inflation trends over the last two years, countries such as Madagascar, Nigeria and Angola have a high population of people who cannot afford a healthy diet. It is fair to assume that the situation in Africa has most likely further deteriorated due to rising inflationary impact on food.

Source: EIU, 2023

Percent of the population who cannot afford a healthy diet (2020)



This contrasts with the great agricultural and agri-food processing potential many African countries hold. We believe that by deploying innovative solutions such as smart farming technologies and smart manufacturing in food production, resilient supply chain and logistics along the food value chain will be critical for Africa's growth and building towards a sustainable agricultural system and improving food security.

Source: World Bank, 2023

Trends that will shape the Future of Food in Africa

Several major trends are expected to shape the future of food in Africa; these trends highlight the need for a holistic and adaptable approach to food production, distribution, and consumption across the continent to meet the evolving challenges and opportunities in the years ahead.

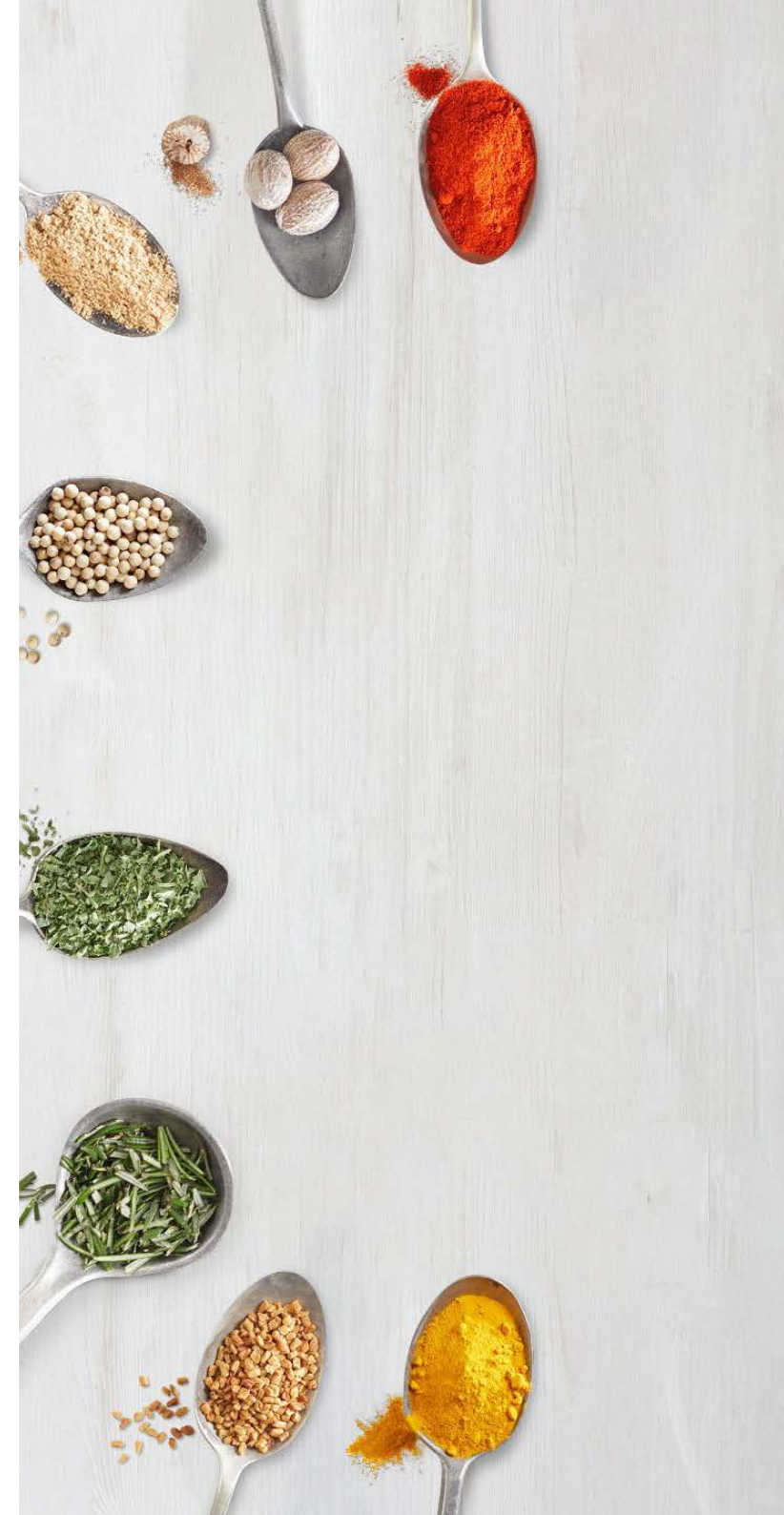
These trends include:

- **Regenerative farming** – a holistic approach to farming that aims to enhance the health and productivity of agricultural ecosystems with soil health as main entry point. Regenerative agriculture practices reduce GHG emissions significantly while limiting water usage and biodiversity loss.
- **Urbanisation** – as African cities continue to grow it will reshape geographic patterns for food demand and affecting consumer preferences, necessitating changes in where food is produced and supplied.
- **Technology and innovation** – technological advancements, such as mobile applications for farm management, precision farming, automated machinery, biotechnology, vertical farming, smart irrigation, and more.
- **Climate change and resilience** – Africa has the youngest population in the world and an opportunity for the continent's growth, engaging the youth in agriculture through entrepreneurship and modern farming techniques is vital for future food production in Africa.
- **Health and nutrition** – there is a growing awareness of the importance of healthy and nutritious diets, and this will drive demand for diverse, locally sourced and organic foods. However,

not everyone on the continent is able to put food on the table and might not get the nutrients required on a daily basis.

- **Food security and Sustainability** – efforts to secure food security will continue, with a focus on reducing post-harvest losses and enhancing food distribution systems while sustainable farming practices, improving yields, including organic farming and reduced food waste, will gain prominence to ensure longer-term food security.
- **Trade and regional integration** – enhanced trade between African countries and regional integration efforts will promote food access and availability.
- **Government policies** – government policies, including investment in infrastructure, research and development, and food safety regulations, will shape the agri-food sector's future.
- **Food security** – efforts to secure food security will continue, with a focus on reducing post-harvest losses and enhancing food distribution systems.
- **Cultural preservation** – despite modernisation, preserving traditional food cultures and practices will remain important in many African societies.

Focusing on evolving market trends such as innovative technologies, regenerative farming practices, localisation, and sustainable best practice will become pivotal in driving healthy diets, nutrition, affordability, and accessibility within the African continent. These transformational key themes will assist in creating a strategic pathway in the food agriculture value chain. Creating sustainable food production will assist the African continent to become more resilient in the coming years. Whilst these global trends bear relevance in Africa, we have contextualised the priority themes surfaced by agri-food stakeholders of organizations that represent the broader agri-food value chain on the continent. We elaborate on these on the following pages.



Regenerative agriculture

Smallholder subsistence farming is the most common form of farming across Africa, estimated to sustain 70% of the continent's population.¹³

Smallholder farmers face vast challenges such as access to capital, lack of sustainable and objective advice (education on key agricultural farming techniques). Often farmers find it difficult to adopt regenerative farming practices because economic benefits take 6-10 years to materialise. Transitioning to regenerative agriculture practices will help in mitigating climate change related issues, such as decreasing yields and deterioration of soil quality;¹⁴ however, many smallholder farmers lack the financial means to make the necessary investments into equipment and infrastructure that will be required for such a shift.¹⁵

To ensure access to affordable food thereby improving food security, collaborations through Public Private Partnerships will be necessary to develop small scale farmers, whilst creating opportunities for successful medium to large scale farmers. To thrive in an ever-changing world, farmers should consider how they move from innovating at a product and service level to focusing on new and marginally improved products. This change requires a rethink of even the primary objective of why they exist and drastically change their management mindset, due to rapid advancements in technology. Transformative change is required¹⁶ such as achieving equal food security for the African continent. Effective orchestration of these collaborative partnerships will allow more African countries to benefit from economies of scale and will make investments into sophisticated agricultural supply chains more viable and attractive. Resulting trade-offs must be considered, as

mechanisation and scaling of farming does not come without risks to the environment.

The World Economic Forum sees regenerative agriculture as one of the key elements of the future of agriculture. It also defines regenerative agriculture – also known as carbon smart farming – as a method of improving the health of soil that restores agricultural land and reduces the sector's environmental impact by lowering greenhouse gas emissions.¹⁷ Food companies are prioritising regenerative agriculture because of the benefits it provides, such as improving food security and restoring and protecting the land. In addition, regenerative agriculture is good for business and society. It could increase yields by up to 170% in some regions in Africa, and by doing so significantly enhance return on investment and the profitability of the sector but also increase access to food.

For example, in Kenya, regenerative agriculture managed to increase production, income and boost the resilience of farmers. These farming practices managed to contribute to reduced moisture loss and improve soil fertility. Farmers reported a 20% increase in harvest, thus escaping total crop failure following reduced rainfall in 2021.¹⁸ This success came from using digital tools to propagate regenerative agriculture practices in Kenya such as AgriBot, which is a digital chat platform that is aimed at strengthening collaborative learning and dissemination processes of key regenerative agriculture technologies and practices to farmers. This kind of technology is aimed at strengthening collaborative learning and dissemination processes of key regenerative agriculture technologies and practices to farmers. Other African countries can adopt these climate smart agricultural technologies and practices to be able to deploy necessary regenerative agricultural platforms.¹⁹



Fortification

Widespread poverty and stubbornly high food prices have made it challenging for most households in Africa to access a balanced and healthy diet. This often leads to unbalanced diets with insufficient nutritional value lacking essential micronutrients such as vitamins, minerals, and trace elements. Children are often the worst affected by such a diet as it can lead to stunting and other developmental challenges and may have a negative long-term impact in the future perpetuating the vicious circle of poverty.

The future of food must drive accessibility to nutritious and affordable food since what we eat and drink profoundly affects our health.²⁰ To reduce the impact of an unbalanced diet, many food companies use fortification of basic staples that often form the key ingredients for meals such as flour, maize meal and sugar. The World Health Organisation describes food fortification as a practice of increasing the content of one or more micronutrients such as vitamins and minerals in food to improve the nutritional quality of the food supply, which provides a public health benefit with minimal risk to health.²¹

“As the disposable income declines, consumers shift to cheap and filling meals, and include less food that is more nutritious”.

Fortification is a key factor in the future of food because it has the potential to reduce malnutrition in Africa. Nigeria, for instance, is progressing on fortifying staple foods with essential micronutrients. Various companies have reached food fortification standards within a period of three years, from 2017 to 2020. These companies have reached over 90% of Nigeria's population. The population reached with wheat flour fortified with iron and folic acid increased from 54% to 92% and the population reached with sugar fortified with Vitamin A increased from 31% to 96%.²²

Another example has shown that pan-African sugar producer Illovo has developed a strong agenda around adding beneficial nutrients to their sugar like vitamins. Fortification of sugar with Vitamin A is part of Illovo's commitment to create a thriving Malawian community and since 2012, Illovo in Malawi has been fortifying its sugar with Vitamin A to help support the elimination of micronutrient deficiency, particularly in children under the age of five. Through its sugar programme, it is estimated that it has reached over two million people.²³ According to World Health Organisation (WHO), vitamin A supplementation helps with strengthening the immune system and the development of children in general. Vitamin A can reduce the risk of all-cause mortality by 12-24%.²⁴

Through fortification, food companies can make nutrition more affordable and accessible while keeping to the same high-quality standard. This shows that companies are prepared to play a key role in making nutritious food more accessible and affordable. Incorporating other nutritional ingredients such as whole grain cereals, fruits, vegetables, legumes, nuts, and olive oil will assist in building a healthier society.²⁵

“We design the recipe with the right energy combination and use vitamin fortification. This also allows us to sell the products at a good price point”.



Case study: Unilever fortification

Unilever aims for all consumers to have access to affordable products and to encourage people to make nutritious choices through clear labelling and balanced portions. Unilever chooses commonly consumed, affordable products that are part of the diet of people who are most in need, as suitable vehicles for fortification. Their fortification efforts thereby deliver the best possible benefit for consumers. Unilever recognises the importance of diverse, sustainable, and healthy diets, and is committed to help tackling micronutrient deficiencies in several ways, in both developed and developing countries.

Unilever offers fortified foods at an affordable price for example by using iodised salt in their savoury products, and maizena porridges with 12 micronutrients; and also develops products with nutritious ingredients such as vegetables, fruit, dairy, and vegetable oils, while promoting nutritious cooking through their recipes.

Millions of servings of fortified products are sold daily, including seasonings, bouillons, soups, and sauces. For example, brands such as Horlicks and Knorr are offering consumers positive nutrition through fortification. These servings include at least 15% of the recommended daily amount for nutrients, in line with regulations. All Unilever's fortified products must comply with international and local regulations and guidelines, such as The Codex Alimentarius.

Unilever is working towards creating a food system that provides quality nutrition for the rest of Africa, for example, in Ethiopia, the population lives on a largely cereal-based diet. Meat, fresh fruit, and vegetable consumption is low, and as a result one in two Ethiopians does not consume enough zinc. To address this, Knorr recently relaunched its all-in-one bouillon cube fortified not only with iodine but also with zinc. One of the staple dishes in Ethiopia is a chickpea stew called shiro wat. When a fortified stock cube is used to make the stew, it has the potential to supply 28% of the daily recommendation for zinc. And in Egypt, Knorr recently launched vegetable, chicken and beef stock cubes fortified with iodine. Horlicks drinks are all fortified with critical micronutrients such as zinc and vitamins C and D, which are all known to support immunity, and in 2022 the brand launched a convenient and affordable 'Ready Mix' range.

By the end of 2022, Unilever products had provided 236 billion servings (exceeding their target of 200 billion) with at least one of the five critical micronutrients – vitamin A, vitamin D, iodine, iron, and zinc. Nutritious diets, healthy habits for everyone explains how their campaigns, as well as their products, are helping people to eat nutritiously.²⁶



Localisation

Many African countries remain dependent on food imports or the import of inputs into the food value chain such as fertilisers, the import bill has reached about US\$35 billion a year.²⁷ High import dependency on certain food items and agricultural inputs, combined with rising international prices and weak local currencies, has led to spiralling inflation. In addition, global maritime shipping rates have trended upwards since the end of 2020 due to Covid-19 and the Russia-Ukraine war. According to UNCTAD, the Russian invasion of Ukraine caused a sharp increase of maritime shipping costs, reflecting the vulnerability of global maritime freight costs to geopolitical shocks.²⁸

Challenges such as a lack of infrastructure (electricity supply, transport, and logistics infrastructure), heavy dependency on other countries outside Africa, as well as high compliance costs have hindered the agricultural sector in achieving sustainable growth.²⁹

However, having local manufacturing facilities, sourcing locally as well as working with vendors and small-scale farmers will help companies build sustainability and competence within the agriculture value chain. The biggest challenge seen in Africa is that not all stages of food production can be undertaken in one country, and hence countries might turn to imports of some inputs.

“The whole ecosystem is looking at sourcing locally: with their knowledge of food and technology expertise, they can provide consumers with the best quality products”.

Food for Mzansi defines localisation as the domestication of production and manufacturing capacity targeting value chains that the country possesses a competitive advantage in.³⁰ A resilient supply chain, devoid of critical vulnerabilities, can withstand many dynamic and simultaneous risks. A resilient supply chain balances risks and costs to prevent or recover quickly from a multitude of dynamic and simultaneous risk-related disruptions. In building and maintaining resilience, organisations must also develop and implement effective governance structures and key enablers.³¹

“The Russian invasion of Ukraine has had a massive effect on fertiliser prices, fuel prices, commodity prices and shipping prices”.

Localisation can provide best farming practise to both small-scale farmers and large commercial farmers so that they will be able to produce ingredients at an affordable price. This has the potential to shield local markets from imported inflation, and hence makes affordable food more accessible. However, localisation can become a problem if it does not meet a certain quality standard expected by end consumer.

Localisation can kill two proverbial birds with one stone: firstly, it reduces the risk of imported food price inflation and secondly it provides livelihoods to communities that grow food for local markets.



Case study: Illovo-Thriving African Community

Illovo Sugar Africa's *Thriving African Community* purpose is about making a positive impact in the communities where they operate. The company continuously looks for ways to empower local small-scale businesses, as well as women and other vulnerable groups. Illovo aims at creating socio-economic initiatives across the countries and markets where they operate in. These initiatives mainly focus on rural economic development, safety and through collaborative engagements with private and public sector partners, to leverage development funding for the benefit of community projects and initiatives.

Through its *Thriving African Community* foundation, it is stimulating economic activity by empowering local growers in rural communities to grow their own cane. Through its Small-Scale Grower Cane Development Project, the Illovo Group's South African subsidiary, Illovo Sugar South Africa, partnered with the National Treasury's Jobs Fund in 2017 on a R126 million (US\$6 million) grant to plant 3 000 hectares of sugarcane on communal land over three seasons in the province of KwaZulu-Natal. The project used 119 local contractors, developed 1 630 growers, and empowered women growers and contractors in rural communities to grow their own cane. This enterprise development initiative stimulated economic activity by creating direct employment and transferred valuable farming and business skills to rural households estimated to receive R80 million in income annually by leveraging these built capabilities.

Illovo encourages the purchase of goods from local suppliers, where they are able to meet Illovo's high standards, and is investing in "shared value" projects (initiatives that align genuine value creation) to provide support to and build the capacity of local entrepreneurs.³² The project has developed and empowered communities on the KwaZulu-Natal's South Coast

by creating sustainable jobs and has visibly transformed the landscape from a sparse sugarcane crop to rolling green hills of healthy cane. The annual supply of sugarcane produced by this project has also helped boost the cane throughput of Illovo's Sezela sugar mill by about 350 000 tonnes. To date, Illovo and the Jobs Fund have invested R126 million (US\$6 million) into this initiative and created 860 sustainable jobs. The project aligns strongly with Illovo South Africa's *Thriving African Community* purpose.

Partnering with local farmers, transporters, contractors, and other small, medium, and micro-sized enterprises in the supply chain brings about multiplied socio-economic benefits to the communities in which Illovo operate. By partnering with these local growers, Illovo contributes to improving living standards of vulnerable households, and by doing so is committed to supporting the creation of a more equal and inclusive society.



Sustainable and innovative packaging

Another important aspect of the future of food is the development and use of sustainable packaging that is less resource intensive, but still offers reliable protection to products. Sustainable packaging will allow companies to safely store and transport their food products while at the same time reduce their impact on the environment by moving away from single use plastic. Sustainable packaging can help reduce food waste and hence can reduce the environmental burden of the sector. eWASA describes sustainable packaging as packaging that creates less waste and conserves natural resources and is often recyclable or made from recycled materials. It has a lower environmental impact, and it considers the planet at every stage of their product's life cycle.³³

To be able to make an impact that matters to the livelihoods of African people sustainable packaging can play a critical role in extending the shelf life of food products. For example, Tetra Pak, a leading food processing and packaging solutions company, has developed packaging equipment that can help keep food from being spoiled in the early stages of production. This cutting-edge process can help extend the life of food and it can also prevent the food from expiring. This initiative can assist in reducing waste and reducing the environmental impact.

“We do not launch anything that does not align to sustainable packaging”

In addition to switching to recyclable packaging, the creation of specific grammage packages that are better suited to local needs can assist with affordability and accessibility of quality

products. While smaller package size can make products more accessible and can even reduce food wastage, it will increase the amount of packaging per unit of product. Therefore, re-sizing needs to be accompanied by using recyclable or recycled packaging material. The goal for many companies is to build resilience towards climate change, and in sourcing sustainable material, this will assist the agriculture sector in reducing greenhouse gas emissions.

“We are busy with a shift to sustainable material; we are setting up our companies for recyclability and investing in both sustainability and recyclability”



Innovative technologies

An important way to unlock Africa's agricultural potential, especially that of smallholder farmers, will be the development and deployment of accessible and affordable digital agri-tech tools. While large and mechanised farms often use technology, smallholders often lack access to innovative technologies that require large cost outlays, this negatively impacts their productivity and yields. Smallholder farmers still rely heavily on manual work, this becomes a huge problem because crop production will lag behind.³⁴

Collaborations through Public-Private Partnerships can help the smallholder farmers with adopting digital solutions that can advance the agriculture sector in Africa. Through different partnerships, innovative technologies have managed to increase smallholder farmers yields by about 70%, equating to an average increase of 40% in farmer's incomes in Africa.³⁵

For example, eVuna, previously known as Connected Farmers, is one of the fastest-growing agricultural technology platforms in Africa. It helps smallholder farmers by improving their productivity, revenue and resilience connecting them to information, inputs, credit, and buyers. The platform is currently available in Kenya, South Africa, Tanzania, and Zambia. eVuna has played a fundamental role in the development of a digitalised agricultural sector.³⁶ Through eVuna platform, smallholder farmers now have access to a variety of tools and resources designed to enable them to increase their productivity and profitability by 70% - 80%.³⁷

“Innovation in agriculture is key, we get significant breakthrough from innovation”.

An important drive of the future of food will be smart technologies such as AI, robotics and prediction breakthrough models, farmers will be able to grow the right crops and become more productive. Utilising mechanisation could help farmers overcome the labour constraints in agriculture and expand farm sizes where land is available³⁸. Tools such as Hello Tractor, an IoT platform intended to facilitate convenient and affordable tractor services that also provides virtual smart tractor monitoring, remote asset tracking, and tractor sharing services to African farmers, could increase the access to mechanisation among farmers.³⁹ Innovative technologies can also assist farmers to adapt to climate change. This will become increasingly important given shifting and often difficult to predict weather patterns.

“Technology has a big role to play in improving the quality of jobs in an area that is hard labour, it improves efficiency in agriculture”.

Utilising technology and innovation for food security and sustainable development is one way of making certain that the food produced is secure for consumers in future. The use of modern technology, such as seed varieties, herbicides and pesticides is able to increase agricultural production without using any genetically modified crops, which might have bad health issues.⁴⁰

Deploying efficiency-enhancing technologies will also change the quality and type of jobs in the sector, potentially increasing its attractiveness for talent and investors.

“We have used technology to help us absorb some of the cost and not compromise the quality of food for consumers.”



Case study:

Green Terrace

Green Terrace is a prominent female-owned commercial greenhouse farm, specialising in the cultivation of sweet peppers. Their products are supplied to leading retailers, food processors, and fresh produce markets throughout South Africa. Green Terrace's commitment extends to consulting technical experts on various aspects of crop farming, from soil and water testing at the inception stage to selecting appropriate crop varieties, implementing acceptable growing and harvesting methods, ensuring traceability, adhering to packaging standards, and maintaining delivery excellence.

Green Terrace has made significant strides in agricultural innovation, particularly with the adoption of cutting-edge innovative technology since 2020. This pivotal decision was influenced by the global challenges posed by the COVID-19 pandemic, prompting them to actively participate in promoting sustainable farming practices that prioritise not only profit but also the well-being of people and the planet.

One of their key innovations is the installation of automated irrigation systems that closely monitor the pH levels of water and the electrical conductivity (EC) in their irrigation programmes. Additionally, they meticulously monitor greenhouse temperatures, humidity levels, and water volumes per irrigation cycle. Their farming practices are intensified through technology utilisation, bolstered by the integration of biologicals to combat pests and diseases.

Green Terrace has established valuable collaborations and partnerships with key stakeholders ranging from infrastructure providers to seed, herbicide, and pesticide suppliers. They have effectively communicated their vision and mission to these partners, emphasising their goal of maintaining Green Terrace as a commercially sound farm with a forward-thinking approach to increasing crop yields while utilising innovative technology. Their ongoing aim is to evolve alongside their retail and wholesale partners as they collectively strive to produce safe, high-quality food for the consumer market.



Way forward

In a continent as diverse and dynamic as Africa, the future of food is poised at a critical crossroads. As professional services firm deeply rooted in this vibrant landscape, we have embarked on a journey of exploration and discovery, delving into the intricate tapestry of Africa's agri-food sector. Our research, fuelled by extensive interviews with key stakeholders across the continent, has unveiled a mosaic of transformative themes that promise to redefine how we nourish our growing population, our communities, and our environment.

From the regenerative rhythms of the land to the ingenious solutions of technology, from the embrace of localised flavours to the evolution of packaging with a conscience – Africa is forging a path towards a future where food is more than sustenance, it's a catalyst for change.

Emerging innovative technologies such as AI and robotics offers incredible opportunities for transforming the agriculture food system in Africa. Through collaboration between governments, NGOs, and private sector stakeholders, this will be crucial for sustainable agricultural development in future. Joint initiatives can drive investment, knowledge sharing, and policy reforms to create an enabling environment for the future we want.

To be able to transition properly to the future of food, we need to successfully address geopolitical issues, government policies and supply chain logistics. This in turn will build a more sustainable agricultural system in Africa.

Join us as we unravel the narratives and peer into a future where Africa's rich agricultural heritage meets the demands of an ever-changing world.

Methodology

The *Future of Food* report is based on insights gained from conversations with leaders along the agri-food value chain (farming, processing, and retailing), supported by secondary research and expert interviews. The main goal is to assess the challenges experienced within the African continent and identify the relevant opportunities that can help shape the future of food in Africa. This initiative is supported by a series of thought-provoking publications and events that explore the latest trends and technologies in food, its societal implications, and commercial opportunities for organisations.



Endnotes

- 1 World Bank, [Agriculture, forestry, and fishing, value added \(% of GDP\) - Sub-Saharan Africa](#).
- 2 AFDB, [Feed Africa report](#), 2019
- 3 United Nations, [Urban and Rural Populations](#).
- 4 World Bank, [Putting Africans at the Heart of Food Security and Climate Resilience](#), 17 October 2022
- 5 AFDB, [Child malnutrition: the African Development Bank steps up action to save thousands of African children at risk of dying before their fifth birthday](#), 20 June 2023
- 6 IFAD, [Change starts here: Small farmers with a big message for the world](#).
- 7 AGRA, [A food-secure Africa needs contribution from all](#), 4 October 2021
- 8 IFAD, [Change starts here: Small farmers with a big message for the world](#).
- 9 AFDB, [Feed Africa: Strategy for agricultural transformation in Africa 2016-2025](#), 2016
- 10 International Trade Administration, [South Africa - Country Commercial Guide](#), 6 May 2023
- 11 Deloitte, [South Africa: the nation with the most frugal shoppers](#), August 2023
- 12 World bank, [Over 3.1 billion people could not afford a healthy diet in 2021 - an increase of 134 million since the start of COVID-19](#), 17 July 2023
- 13 Borgen project, [10 facts about farming in Africa](#), 27 June 2019
- 14 EPA, [Climate Change Impacts on Agriculture and Food Supply](#).
- 15 Bizcommunity, [Farming for the Future: Restore Africa Funds on the importance of regenerative agriculture](#), 25 May 2023
- 16 Deloitte, [Scaling edges: A pragmatic pathway to transformation](#), 2019
- 17 WEF, [What is regenerative agriculture?](#), 11 October 2022
- 18 Farm Africa [Regenerative agriculture](#).
- 19 Farm Africa, [Regenerating our Soils](#), 2021
- 20 Deloitte, [The Future of Food Challenges & opportunities: Perspectives from consumers and food companies](#), 2022
- 21 WHO, [Food fortification](#)
- 22 Technoserve, [Nigerian Food Processing Companies Announce Rapid Progress on Fortifying Staple Foods with Essential Micronutrients](#), accessed on 21 August 2023
- 23 Illovo, [Illovo sugar \(Malawi\) PLC: Annual report for the year ended](#), 31 August 2022
- 24 WHO, [Vitamin A supplementation](#).
- 25 Science daily, [Nutritious foods have lower environmental impact than unhealthy foods](#), 28 October 2019
- 26 Unilever, [Our future-fit business in action](#)
- 27 World Bank, [Africa imports billions in food a year. It could be creating local jobs instead](#), 9 November 2020
- 28 UNCTAD, [REVIEW OF MARITIME TRANSPORT: Navigating stormy waters](#), 2022
- 29 DTI, [Opinion Piece: Africa Agricultural intra-trade to advance food](#), March 2023
- 30 Foodformzansi, [Localisation could be lifeline for agribusinesses](#), 16 February 2023
- 31 Deloitte, [Improving supply chain resilience](#)
- 32 Illovo, [The Impact of Illovo in Africa: Socio-Economic Impact Assessment](#), October 2017
- 33 Ewasa, [Sustainable Packaging: What it is and How to Spot it](#)
- 34 Africanews, [Kenya: The app helping farmers with tractors to plough fields](#), 8 September 2023
- 35 Businesstech, [Harnessing the power of technology for smallholder farmers across Africa](#), 28 March 2023
- 36 Evuna, [Smallholder farming in Africa and the opportunities for digital enablement](#), 26 June 2020
- 37 LinkedIn, [Growing farmers in Africa](#), 2023
- 38 Farmers weekly, [What hampers farm mechanisation in Africa?](#), 12 April 2021
- 39 Crunchbase, [Hello-tractor](#)
- 40 Deloitte, [Agriculture in Africa, what does the future look like?](#)

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