

People, Health and Nature:

A Sub-Saharan African
Transformation Agenda



The
Food and Land Use
Coalition

Foreword



Agnes Kalibata

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Africa is on the move.

I am optimistic about Africa's development following two decades of growth and improvements in

the economy and people's livelihoods. This has been powered in part by steady growth in the agriculture sector, spurred by innovative technologies such as improved seeds and digitization.

Sustained agricultural transformation in Africa is at the heart of the region's continued growth and stability.

In addition to assuring food security for all, the agriculture sector is a source of employment for the majority of the population, across many value chains. It is a source of raw materials for many industries and empowers the poor and marginalized in multiple and diverse local contexts. Over the years, the Alliance for a Green Revolution in Africa (AGRA) has invested in equipping farmers with the means to sustainably boost production and gain access to rapidly growing markets, with a focus on increasing incomes and improving food security, while at the same time driving broader economic growth.

Improvements in efficiency and safety across value-chains, including the integrated planning of land and other resources, boosts the value of African produce and generates employment opportunities for the young. We can see that our work and that of our partners, including those in the Food and Land Use Coalition, has eased the ever-growing pressures on farming systems to provide for rapidly growing populations.

At this crucial moment, when we are grappling with the consequences of global heating and climate emergencies, **we must take a climate driven view of this agriculture transformation.** At a minimum, this must be done to bolster the resilience of African economies,

improve livelihoods, generate opportunities for farmers and secure the region's nutritional outcomes. Thriving ecosystems can help to reduce climate related risks such as impacts of flooding, drought and soil erosion, which are forecast to rise.

Halting deforestation, promoting reforestation and encouraging regenerative activities can play a critical role in restoring land, boosting yields and improving livelihoods. Beyond increasing resilience, we should take this approach because it is the right thing to do, in accelerating sustainable agricultural development overall.

We have never been better-equipped to deliver such a transformation. The unprecedented growth and adoption of digital technologies, and the convergence of well-being agendas for both people and planet, globally and locally, offer many opportunities to adopt sustainable farming practices, increase value-chain transparency and support restoration efforts. For example, AGRA has been promoting a private sector approach through its network of partners that has seen transformation in seed systems at country level. This makes locally adapted seeds accessible, strengthens rural economies, builds food security and increases the resilience of communities and countries.

Over the past few years, AGRA has been supporting African governments to deliver on their agricultural development plans through targeted capacity building initiatives. These have supported policies and strategies that are in turn implemented to drive investments in the sector.

The work of the Food and Land Use Coalition is galvanising partners and stakeholders to converge around this important agenda in an effort to contribute to sustainable food systems around the world.

This paper is therefore timely. It provides critical insights into a framework for an integrated, inclusive transformation and outlines what is needed to turn ambition into reality. By championing the recommendations outlined in the paper, policy-makers, business leaders, farmers, investors and civil society groups can broaden the space for action, maximise investments and achieve the scale required to drive meaningful impact.

The time for action is now – we have the know-how, the people and the ambition to work together to build a sustainable future for all. The resilience of Africa’s smallholder farmers is essential to accelerating our path to prosperity. With the right policies, programmes, financial instruments, investments and skills, smallholder farmers will boost yields, regenerate natural capital and prosper. Our food systems will become more sustainable and nutritious and we can imagine achieving our great ambition of a prosperous Africa capable of feeding itself and the world.



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Executive summary

Around the world, major economies have demonstrated the benefits that are unlocked when food and land use systems thrive. Brazil's agricultural sector drove strong economic growth and transformed the country into a net exporter and global player in agribusiness.¹ India's "Green Revolution" saw cereal yields more than double and rural poverty decline by over 25 per cent in thirty years.² Today, sub-Saharan Africa has a unique opportunity to replicate this growth, while avoiding pitfalls like massive environmental degradation and rising inequality that have historically accompanied such transitions.

Food and land use systems are integral to sub-Saharan Africa's economy. They account for 70 per cent of livelihoods and almost one-quarter of countries' GDP in the region (up to 60 per cent in some countries).³ Yet crop yields across Africa are only 25 per cent of their potential, indicating that massive society-wide gains could be attained if these are sustainably raised.⁴ Much of the value created by the sector does not remain in the region, nor do primary producers receive their fair share: cocoa farmers in Côte d'Ivoire and Ghana earn ~US\$0.75 per day⁵ despite cumulatively producing 60 per cent of cocoa for the US\$50 billion/year chocolate industry.⁶

There is a huge economic opportunity in a sustainable and equitable food and land use future in sub-Saharan Africa. A critical component is reducing "hidden costs" to sub-Saharan Africa's economy estimated at US\$680 billion (US\$1.9 trillion when using global GDP figures) per year.⁷ (See Exhibit ES-1.) In addition, they are hindering efforts to deliver on the Sustainable Development Goals and Paris Agreement on Climate. Such hidden costs include environmental damage, the cost of poor diet-related population health and the impacts of entrenched and worsening inequality and rural poverty.

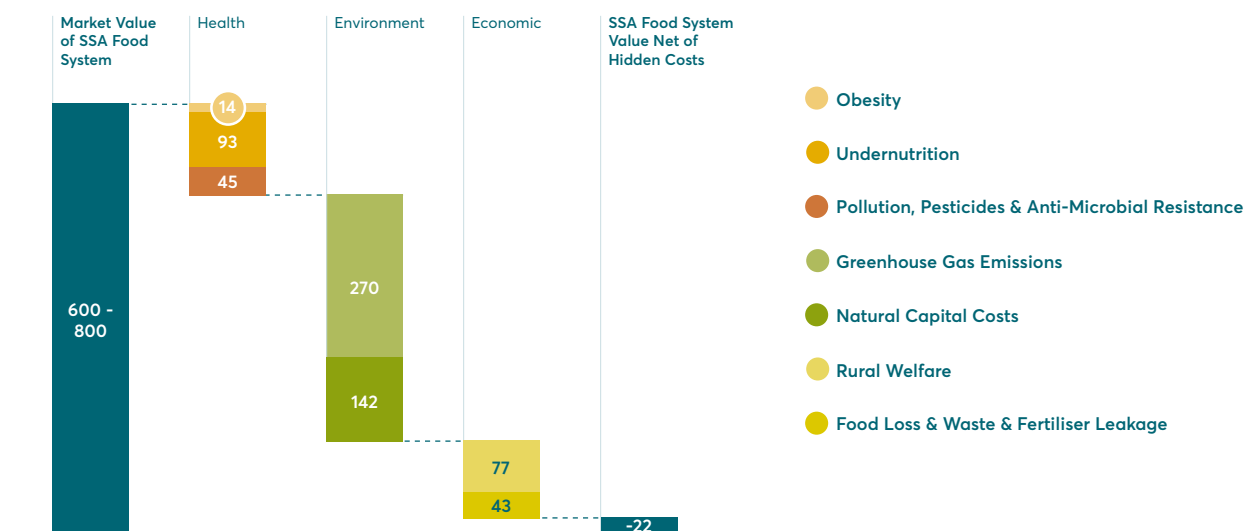
Analysis for this report estimates the biggest of these costs today are:

- **US\$270 billion** in the cost of greenhouse gases (GHG) released by sub-Saharan Africa's food and land use sectors.⁸ The biggest driver of this is deforestation: today, sub-Saharan Africa loses 2.7 million hectares of forest each year, contributing over 1600 million tonnes (Mt) CO₂e to global GHG emissions.^{9*}
- **US\$140 billion** as a result of irreversible environmental degradation. Land degradation causes damage to soils and water, compromising agricultural yields and eroding sub-Saharan Africa's ability to benefit from vital ecosystem services. The costs associated with water scarcity are also significant.
- **US\$90 billion** from undernutrition. Child undernutrition contributes to just under 700,000 deaths every year and causes reductions in productivity due to illnesses and development challenges.
- **US\$80 billion** in the cost of inadequate rural livelihoods. By failing to provide a decent living for 350 million people working in rural areas, unsustainable food and land use systems trap them in poverty.

* The FOLU Hidden Costs are modelled using FAO forest cover data which has been calibrated with the Hansen Forest Cover Dataset (Hansen et al., Science 2013). This results in total AFOLU emissions forecasts which are higher than other commonly cited estimates (IIASA, IPCC), due to the Hansen dataset methodology for estimating forest cover loss. More information can be found in the FOLU Technical Annex, published September 2019.

The Hidden Costs of Food and Land Use Systems in sub-Saharan Africa in 2018

Billions USD, 2018 prices



This is a conservative estimate, representing the hidden cost to sub-Saharan Africa's economy by utilising sub-Saharan African GDP per capita figures. Using a global GDP figure instead means the hidden costs increase up to US\$1.9 trillion. Under this scenario, the costs of undernutrition are ~10 times larger, indicative of the huge economic opportunity that reducing malnutrition across the region will have for sub-Saharan Africa and the world.

Without intervention, these hidden costs will spiral upwards over the coming decades. Sub-Saharan Africa's population is forecast to double to over two billion by 2050.¹⁰ While this is a massive growth opportunity, it will result in burgeoning demand for food, (often wood) fuel, land and jobs, increasing pressure on already vulnerable natural resources. Modelling for this report suggests that sub-Saharan Africa could lose over 70 million hectares of forest by 2050 – an area one-third of the size of DRC.¹¹ The cost of this natural capital loss could be up to US\$170 billion per year.¹²

The impacts of climate change will weigh more heavily on countries in the region than almost anywhere else in the world: crop losses of up to 30 per cent are possible with warming of 2°C by 2050, increasing food insecurity and the potential for conflict and migration.¹³ An expanding middle class and urbanisation are prompting dietary and lifestyle shifts, adding the health costs of obesity to the burden of malnutrition in many countries. A growing population will result in a huge increase in the costs of rural poverty: sub-Saharan Africa could be home to 90 per cent of the global extreme poor by 2030 due to a combination of slow poverty reduction and rapid population growth relative to the rest of the world.¹⁴

Clearly, there is an urgent imperative to address these rising hidden costs. Yet this is only part of the story. Shifting to more sustainable food and land use systems in sub-Saharan Africa also represents a significant economic opportunity with the potential for huge new markets across the region.



New business opportunities in sustainable food and land use systems have been estimated at US\$320 billion each year by 2030 across sub-Saharan Africa.¹⁵ These opportunities deliver multiple co-benefits, from reducing rural poverty to boosting food security and improving population health, to protecting and regenerating natural capital.

These opportunities are:

- **US\$120 billion**¹⁶ in forest ecosystem services (sustainable forestry management approaches and payment mechanisms for ecosystem services) and restoring degraded land (conservational farming practices and landscape interventions such as terracing and replacing topsoil).
- **US\$100 billion**¹⁷ in increased agricultural yields: putting high-quality inputs, innovation, technology and infrastructural improvements to work on both small and large farms across the region.
- **US\$100 billion**¹⁸ in supply chain efficiency improvements (improved food transport, storage and refrigeration to reduce food loss and waste) and enhanced value-adding capacity (increased processing, packaging and retailing capacity).

The potential to create better jobs in these new markets is significant. Modelling completed for this report finds that sustainable food and land use systems in sub-Saharan Africa could generate 40 million additional decent jobs in the region and cause rural incomes to rise by an extra 3 per cent by 2030. This would go some way in helping to meet the job demands of 375 million Africans who are set to reach working age between 2015 and 2030 – less than a quarter of whom are currently forecast to find formal wage employment.¹⁹

Expanded intra-regional trade will help to accelerate these market opportunities across sub-Saharan Africa, while reducing the region's net agricultural trade deficit. Today, intra-regional trade in sub-Saharan Africa (for example, between Tanzania and Uganda) makes up just 23 per cent of food imports and 26 per cent of food exports – in contrast to 35 per cent and 57 per cent in developing Asian economies.²⁰

Technological innovations are central to all new markets. There will be almost 700 million smartphone connections in the region by 2025, 400 million more than at the end of 2017.²¹ Entrepreneurs are finding new business models and ways of sharing knowledge that meet the needs of an increasingly connected population and solve some of the region's greatest challenges: boosting agricultural yields, connecting value chain actors to markets and improving monitoring capacity (See Exhibit ES-2.).

Technological advances in food and land use systems

Access to information	Extension Services	Access to machinery	Improving on-farm practices	Access to Markets and Finance	Monitoring value chains
<p>Esoko sends SMS messages with market prices to cocoa farmers in West Africa</p> <p>In Ethiopia, CommonSense provides farmers with weather forecasts via SMS</p>	<p>Farmerline leverages digital technology to increase the scope of extension services</p> <p>AgTube is an online platform for agricultural researchers and farmer organisations</p>	<p>Hello Tractor the 'Uber of Farming in Africa'</p> <p>iProcure links farmers to manufacturers to buy agricultural inputs with mobile vouchers</p>	<p>SunCulture provides solar-powered drip-irrigation for farmers</p> <p>Fresh Direct uses hydroponics and vertical farming to grow crops in urban areas</p>	<p>mPesa broadens financial inclusion in Kenya</p> <p>Nigerian start-up FarmCrowdy connects farmers with potential investors</p>	<p>Global Forest Watch Pro matches thousands of data points representing users' supply chain investments with data on recent and historic deforestation to reduce risk</p>

However, implementing the reform and innovation needed to reduce hidden costs and capture new business opportunities in food and land use systems is not going to be easy. Trade agreements and regulations need to be integrated into land use plans to balance demands on the region's natural capital and consider the impacts of trade policy on nutrition, while ensuring that sub-Saharan African countries secure a fair deal in trade negotiations.²² Over the past two decades, Africa's trade with China, India and other emerging partners tripled (from ~US\$250 billion to ~US\$800 billion per year between 2000-2016).²³ Despite opening up huge opportunities, this has increased pressure on the region's natural resources, as demand for produce and land has grown.

Unsustainable agricultural subsidies need to be redirected. For example, Malawi spends 70 per cent of its agricultural budget on subsidies that do not reach the poorest farmers, disincentivise the use of organic-based materials,²⁴ crowd out key parts of the private fertiliser market and divert spending from other programmes, including roads and extension services.²⁵

Improving the infrastructure that supports sustainable food and land use activities is another critical action. This includes reductions in post-harvest losses, large-scale productivity improvements and the development of domestic food markets (which require better roads, electrification and storage infrastructure, as well as communication and health services). Limited access to electricity enforces a dependence on fuel wood, a major driver of deforestation in many countries in the region. Attaining the infrastructure quality and quantity of the rest of the developing world could increase growth in GDP per capita by between 1.7 per cent and 2.6 per cent per year.²⁶

Improving institutional capacity is essential to enact reforms and attract investment into and from within the region. Historically, low institutional capacity – particularly at local levels – has deterred investors, weakened the enabling business environment and undermined the consistent implementation of laws and policies. Entrenched inequalities must also be addressed. Insecure land tenure – particularly for women – limits farmers' and rural communities' access to finance, as well as increasing the risks of investing in land or adopting sustainable management practices.

Analysis for this report finds that the additional investment required for key reforms to 2030 is modest compared to the benefits: an estimated additional US\$85-100 billion per year.* The majority of this will be directed into rural infrastructure, equipping farmers to improve yields and restoring natural capital (including forests and other ecosystems, such as savannahs and wetlands). Although an additional US\$85-100 billion investment may be small compared to the size of the global economy, it is equivalent to 5 per cent of sub-Saharan Africa's GDP²⁷ and just under triple annual FDI into the region across all sectors, which has been on average US\$36 billion over the past decade.²⁸

As one of the most underinvested regions in the world, increasing investment from inside and outside sub-Saharan Africa is not without its challenges. Concessional capital will need to be used more catalytically to mitigate credit, political and technological risks to rapidly crowd private investment into priority sustainable food and land use assets in the region. Capitalising intermediaries like microfinance institutions and other value chain actors will also be critical to support hard-to-reach smallholders. Aggregating small-scale projects into larger blended finance vehicles with higher liquidity, possible downside protection and technical assistance can help to attract mainstream capital from larger investors. Finally, increasing local currency finance and mobilising resources from domestic capital markets will be key as they improve their understanding of risks in the sector.

How can countries in sub-Saharan Africa address these challenges to capture the opportunity of a sustainable food and land use future? Our work has identified four critical transitions in food and land use systems with the potential to deliver outsized impact in sub-Saharan Africa and the wider world. Section 2 of this report is about *how* to drive these transitions at speed and scale.

The transitions are:

1

Equipping farmers to sustainably increase nutritious agricultural yields. Providing farmers with access to high-quality inputs, training and affordable capital to invest in their land could help to dramatically increase agricultural yields, enhance the availability and affordability of food and improve farmer incomes and livelihoods. Sustainable farming practices and technology-enabled agriculture can reduce agricultural emissions and boost biodiversity on farms at the same time as increasing nutritious yields. For example, non-profit Technoserve partnered with Equator Seeds to use drones in Uganda to monitor and optimise agricultural practices across 270 farms to deliver 100 per cent yield increases, 60 per cent declines in pesticide use, and greater profits for both farmers and the seed company.

2

Strengthening local markets for nutritious, sustainably produced food for domestic and international consumers. Africa's food and beverage markets could be worth US\$1 trillion by 2030.²⁹ By investing in supply chain improvements and unlocking technology to increase efficiency and boost value-adding and intra-regional trade opportunities, countries can meet growing food demand, improve farmer incomes, generate new jobs, displace food imports and support population health. Investing in human capital will help to equip a new generation of entrepreneurs to enter agriculture. Already, progress is being made. For example, Rwanda has risen to 29th out of 190 countries in the "Doing Business" Index – and increased investment has followed.³⁰

* This figure is based on modelling and estimates conducted for the Food and Land Use Coalition global report. This is a conservative estimate because it is based on cost categories that are priorities for global transformation. The need for a disproportionate focus on sub-Saharan Africa has been recognised in certain areas – for example, investment in rural infrastructure – yet additional investments will need to be made in the region that are not included in these estimates, such as local processing activities. In addition, the costs are based on assumptions around the extent of the transformation that can be achieved by 2030: further investment will be required to achieve transformation by 2050. See Technical Annex for more detail.



3

Working at the landscape level to preserve and grow natural capital. Halting deforestation and reversing loss of natural capital could increase resilience to climate change, reduce annual GHG emissions by 2000 MtCO_{2e} from these sources by 2050 and support millions of people to improve their livelihoods.³¹ Landscape-level interventions can have multiple co-benefits, such as the Great Green Wall Initiative, an African-led initiative aiming to restore 100 million hectares of currently degraded land in the Sahel. It aims to generate 10 million jobs, boost food security and sequester 250 million tonnes of carbon by 2030.



4

Capturing gains from equal rights. A transition to equal and inclusive food and land use systems will take efforts on multiple fronts to confront today's inequalities. Such a transition would remove barriers for young people to enter the agricultural industry and see farmers capture an increased share of the value generated by their produce, reaping the benefits of higher agricultural production and stronger markets emerging in countries like Ghana. It would ensure that women have equal access to resources including property, finance and education to realise their full productive potential and support nutritional and health outcomes. This transition also tackles inequality between sub-Saharan African food and land use actors and their partners abroad, increasing the benefits of engaging in international markets.



A set of specific actions will help to progress these four individual transitions towards sustainable food and land use systems. However, some shifts have much wider scope, with the potential to deliver gains across all four transitions. Section 3 of this report covers these wider shifts, including: accelerating the demographic transition to stable fertility rates; recognising and promoting farmer and community rights and responsibilities over land; improving infrastructure, particularly in rural areas; and removing barriers to investment across food and land use systems.

Progress in each critical transition is already underway. Actors from government, business, development and private finance, civil society and farmers themselves are already showing the world what success looks like. For example, under its Climate-Resilient Green Economy initiative, the Ethiopian government aims to drive economic growth to reach middle-income status by 2025, while limiting 2030 GHG emissions to around 150 MtCO_{2e} – less than half the estimated emissions under a conventional development path. (See 1 in Case Study Catalogue.) Myriad more examples of such progress are documented in the Case Study Catalogue.

Now, fundamental shifts in policy, levels of investment and implementation capacity must broaden the space for more people and projects to thrive. Governments need to create the enabling environment, but the private sector, the finance community and civil society all have a role to play. Critically, this work must be led by and build on the expertise and experience of Africans themselves. Sub-Saharan Africa's entrepreneurs, farmers and communities can work with partners at home and abroad to develop solutions, build capacity, implement action and set the region on a course for strong, sustainable economic development.

The next decade is critical. Global and regional trends are putting new pressures on food and land use systems. But the potential for transformation has never been greater. Technological innovation is taking off, particularly given the rapidly rising connectedness of the region. Promising new partnerships are being forged between sub-Saharan African countries and the rest of the world. This report demonstrates that, for all actors, opportunities in food and land use systems represent some of the best investments to deliver sustainable, equitable growth across the region, with implications for the wider world. They are also critical to deliver on the Sustainable Development Goals and Paris Agreement on Climate. The time to act is now.

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