2023 Scenathon results

Pathways for food and land-use systems in the Rest of Sub-Saharan Africa region

FABLE CONSORTIUM

About FABLE
The Food, Agriculture, Biodiversity, Land-Use, and Energy (FABLE) Consortium is a collaborative initiative to support the development of globally consistent mid-century national food and land-use pathways that could inform policies towards greater sustainability. The Consortium brings together teams of researchers from 24 countries and international partners from the UN Sustainable Development Solutions Network (SDSN), the International Institute for Applied Systems Analysis (IIASA), the Alliance of Bioversity International and CIAT, and the Potsdam Institute for Climate Impact Research (PIK). https://www.fableconsortium.org/

About the authors
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Countries in the "Rest of Sub-Saharan Africa" region
Angola, Benin, Botswana, Burkina Faso, Cameroon, CapeVerde, Central African Republic, Chad, Congo(Rep), Cote d'Ivoire, Djibouti, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Regional context

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Our food and land-use systems are critical for staying within our planetary boundaries and the Earth's system resilience. Among the six Transformations required to achieve the Sustainable Development Goals (SDGs), the fourth Transformation—focusing on food, land, and water—is crucial. This Transformation is key to achieving SDG 2 (Zero Hunger), SDG 6 (Clean Water and Sanitation), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land). Moreover, it supports the remaining SDGs, underscoring its crucial role in fostering a sustainable future.

This document presents the results of the 2023 'Scenathon', a modelling exercise by the FABLE Consortium exploring three alternative futures for national and regional food and land-use systems. The term 'Scenathon' stands for 'a marathon of scenarios' and refers to FABLE's iterative process for ensuring that national and regional pathways have coherent trade assumptions and align with global sustainability targets (see the 2024 Sustainable Development Report for more information).

Through these long-term pathways, we can identify trade-offs and synergies between different goals and see the impact of various actions, as well as key levers for guiding sustainable development policies through 2030 and 2050. Together with our modelling tools and methods, these results are designed to support decision-making and the development of better policies and targets to drive the transformation of our food and land-use systems.

Countries in the "Rest of Sub-Saharan Africa" region: Angola, Benin, Botswana, Burkina Faso, Cameroon, CapeVerde, Central African Republic, Chad, Congo (Rep), Cote d'Ivoire, Djibouti, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Figure 1. Historical share of GHG emissions from Agriculture, Forestry, and Other Land Use (AFOLU) to total AFOLU emissions and removals by source in 2020

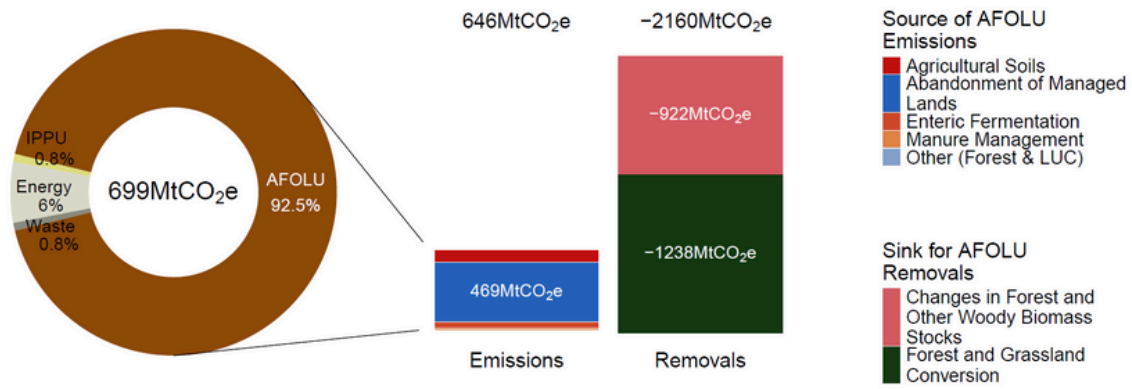
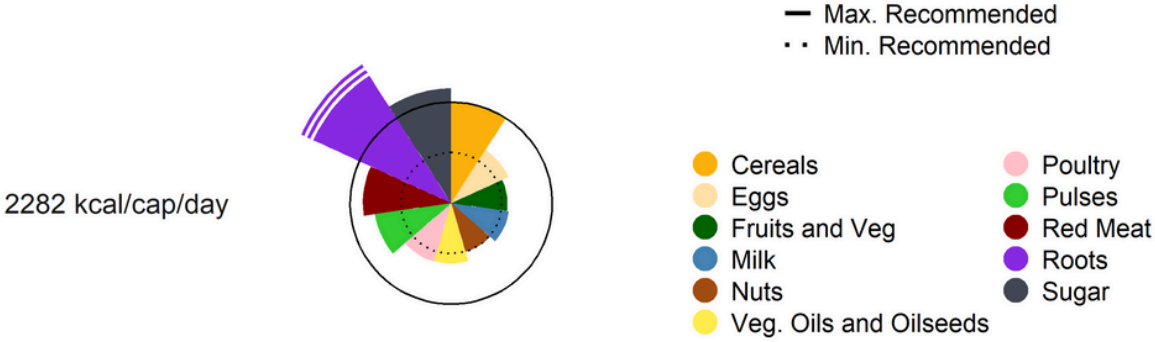


Figure 2. Daily average kilocalorie intake per capital per food category in 2020



Regional context

RSSA

This table summarizes national targets for food and land use, derived from regional commitments, policies, and strategies. It provides an overview of the country's current ambitions to transform its food and land-use systems. Where countries lacked quantitative national targets, we have estimated targets based on qualitative pledges.

SDG	Indicator	Regional Target
2 ZERO HUNGER	Undernourishment	Reduce the prevalence of underweight children under 5 years old from 21% in 2013 to 5% in 2023
	Self-sufficiency	African agriculture enables the continent to feed itself and be a major player as a net food exporter, by 2063
	Diet-relared diseases	Reduce the under-five mortality rate from 92.9 in 2013 to 47, by 2023.
	Other food-related targets	Double farmers' productivity between 2020 and 2030; Achieve productivity growth rates of 6% per annum by 2023.
13 CLIMATE ACTION	Total GHG emissions reduction	Mainstream low-emission and climate-resilient development across all policies
	Land use and land use change GHG emissions reduction	Increase forest and tree cover by 2.5 to 3 billion tons of CO2e by 2030
	AFOLU GHG emissions reduction	Reduce GHG emission from AFOLU by 44% between 2020 and 2030
	Reduce or halt deforestation	By 2030, halt loss of carbon-rich ecosystems.
15 LIFE ON LAND	Reduce or halt loss of natural ecosystems	Sustainably manage the continent's rich biodiversity, forests, land and waters using adaptive measures to address climate change risks, by 2063
	Promote afforestation	Restore 83 Mha of land in Africa into restoration by 2030
	Expand protected areas or 'Other effective area-based conservation measures'	Protected areas cover 17% of terrestrial and inland water areas by 2023. Establish and improve protected areas in carbon-rich ecosystems.
	Reduce or halt use of agrochemicals and other agricultural practices that harm biodiversity	30% of agricultural land is under sustainable land management by 2023, ensuring productivity increases on land that is converted from other practices.
	Other biodiversity related targets	Encourage zero loss of biodiversity commodity supply chains through climate-positive commitments and investments by private sector companies
8 DECENT WORK AND ECONOMIC GROWTH	Agricultural exports	Three-fold increase in intra-African trade especially of agricultural products, by 2023 compared to 2013

Regional context

SDG	Indicator	National Target
	Employment in the agricultural sector	Reduce youth unemployment to 7% by 2023; Job opportunities are available to at least one in four persons looking for work.
	Farmers' income	Real per-capita incomes are a third more than 2013 levels by 2023. Doubling of incomes between 2020 and 2030
	Limit water use	By 2023, increase 2013 levels of water productivity from rain-fed agriculture and irrigation by 60%; harvest at least 10% of rainwater for productive use; and recycle at least 10% of wastewater for agricultural and industrial use.
	Other water related targets	98% of people have access to safe drinking water by 2023

Model

Using the open-access FABLE Calculator and the FABLE decentralized modelling infrastructure, we have developed three alternative pathways —Current Trends, National Commitments, and Sustainable Pathway— to explore the impact of various practices and policies on achieving sustainability targets through 2050. We compare our results with targets across food security and nutrition, GHG emissions reduction, forest and biodiversity conservation, and sustainable use of water, nitrogen, and phosphorus.

For each of these pathways, we have established various assumptions regarding the evolution of several model parameters. These parameters include population growth, dietary patterns, food waste, food import and export levels, crop and livestock productivity, agricultural expansion, afforestation, livestock density, protected areas expansion, post-harvest losses, biofuel demand, urban expansion, agricultural practice coverage, and irrigation area expansion. These assumptions detail the extent to which these factors will drive changes in food and land systems from 2020 to 2050.

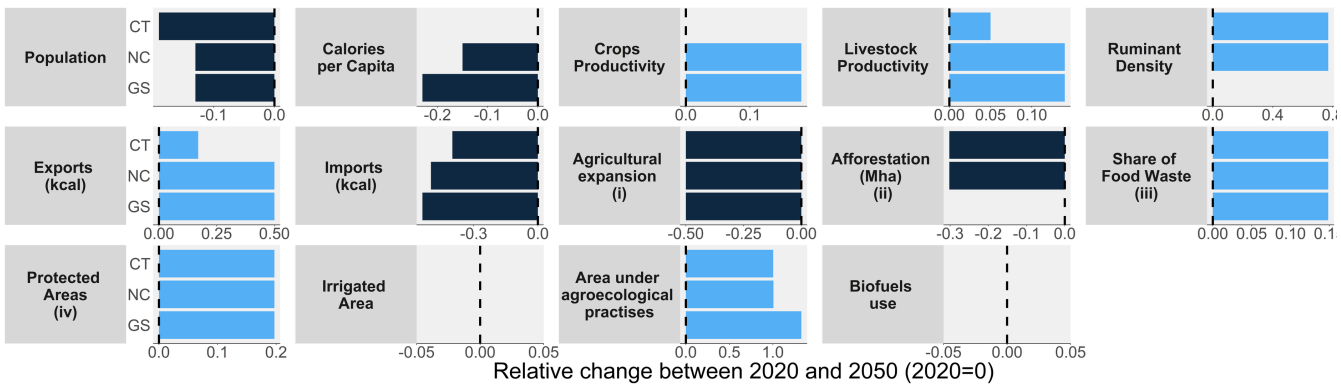
Pathway narratives

Current Trends: RSSA is characterized by relatively high population growth, rural-urban migration, low to medium levels of economic development, and rich but increasing pressure on natural resources. The region's economy has been hard hit by the Covid pandemic and war in Ukraine and is far from recovering to pre-pandemic growth and income levels. The region's economy is growing currently at about 4% growth rate, yet inflation is high (~10%) and likely to remain high and uncertain in the short to medium term due to the Ukraine war, regional dependence on food imports, and regional debt, unrest, and conflicts. Yield gaps are large in RSSA, and technological developments alone are expected to lead to substantial increases in agricultural yields for many crops.

National Commitments: The African Union has set the Agenda 2063 aspiration for "A prosperous Africa based on inclusive growth and sustainable development", centered on investing in modernizing agriculture. The Comprehensive African Agricultural Development Program (CAADP) is a regional policy under Agenda 2063, which aims for countries to eliminate hunger and poverty through agricultural development. The target is for agricultural growth of at least 6% per annum, increased productivity and farm incomes, and more environmentally sustainable agricultural production. Alongside this, many countries in RSSA focus on achieving economic growth through exports of oil, precious metals, and other natural resources which constitute 70% of SSA's GDP, together with investments in infrastructure, education, and industry to move from agriculture-dominated to more diversified and higher value economies. Yet the global economic slump is making rapid growth challenging. The African Continental Free Trade Area (AfCFTA) has deepened regional integration and has the potential to increase regional trade by 15-25%. Social and economic concerns dominate policy agendas while environmental action lags behind. Action on biodiversity and climate change includes the Great Green Wall initiative which aims to end land degradation in African drylands.

Global Sustainability: RSSA is committed to global climate and biodiversity agreements, but the level of policy ambition and speed of action needs to be substantially strengthened for the region to make a significant contribution to global targets. In comparison to national commitments, this pathway features higher ambition to slow population growth, no more deforestation, an increase in the share of cropland under productive and sustainable practices by 2030, and expansion of protected areas to 30% by 2030. It also seeks to reduce international import dependencies and stabilize exports to increase economic resilience and halt the drain of natural resources from RSSA, offset through enhanced intra-regional trade.

Figure 3. Assumptions on the levers for change in each pathway



Notes: (i) Results are expressed in code, taking the value 1 for 'Free expansion scenario', -0.5 for 'No deforestation' and -1 for 'No Agricultural expansion'.
(ii) Results are expressed in a net increase rather than relative change.
(iii) Results are expressed % of consumption that is wasted.
(iv) Results are expressed in % of total land in 2050.

Figure 4. Computed daily average intake per capita over 2000-2050

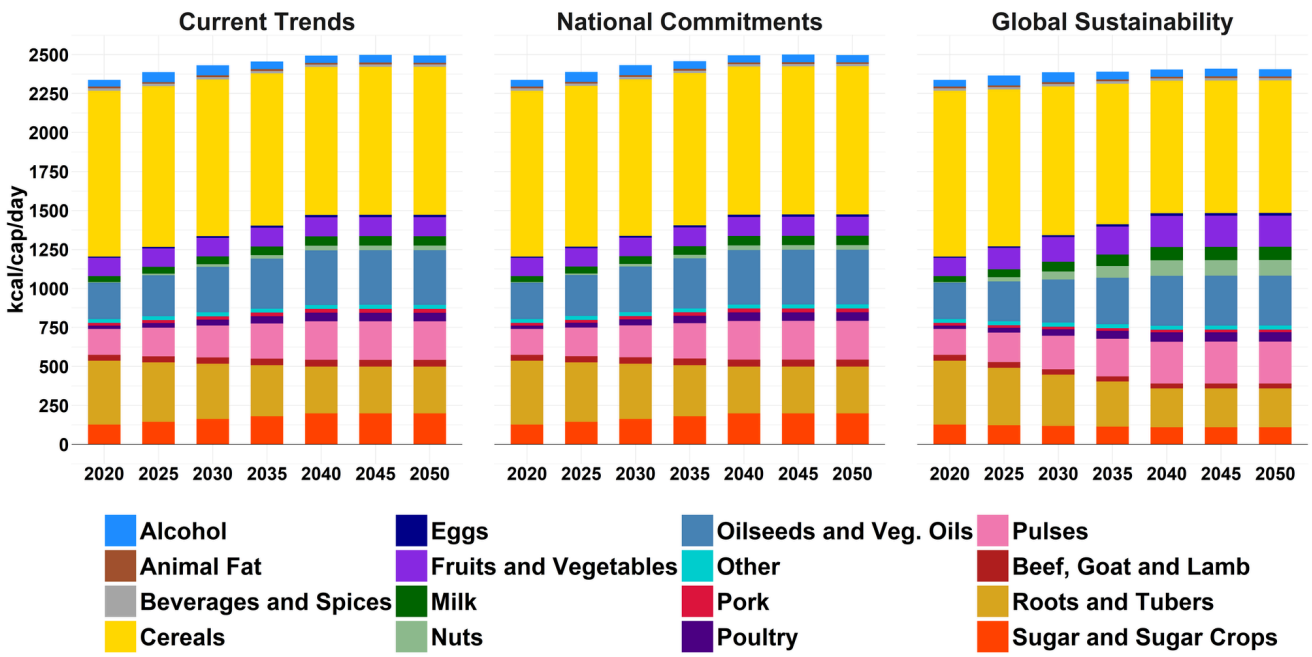


Figure 5. Comparison of the computed daily average kilocalorie intake per capital per food category across the three pathways and the prevalence of undernourishment in 2050

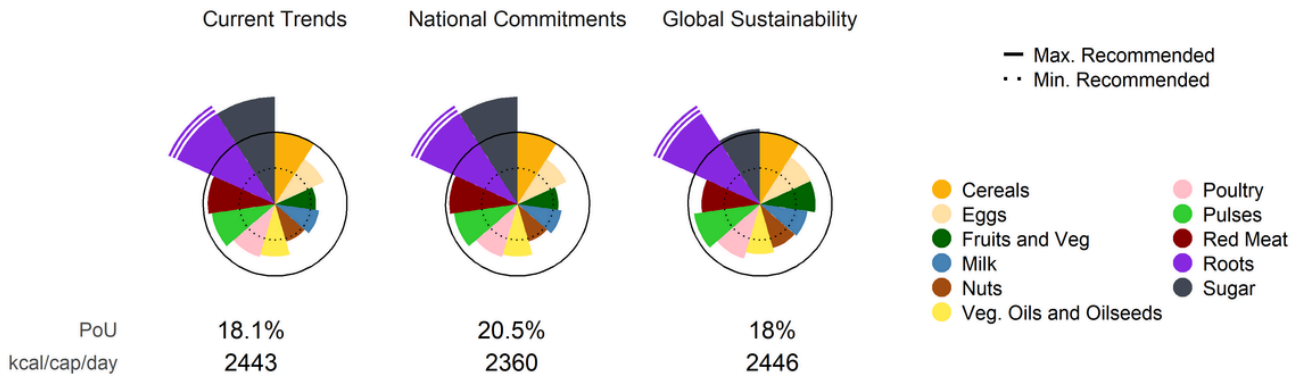


Figure 6. Evolution of land cover 2000-2050

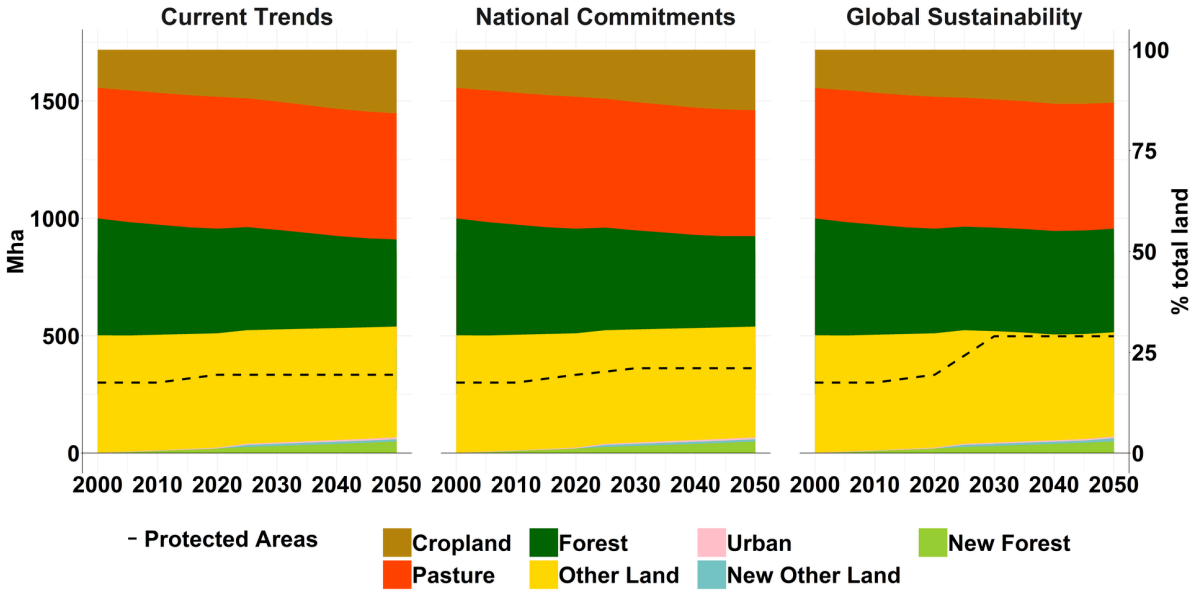


Figure 7. Evolution of the cropland composition 2000-2050

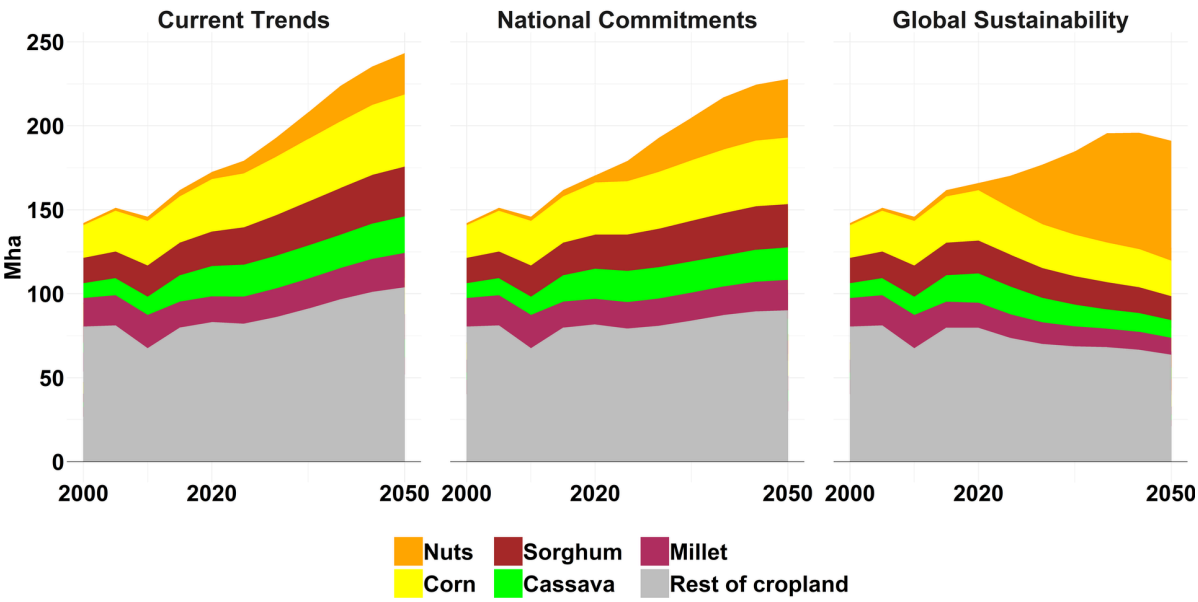


Figure 8. Projected AFOLU emissions and removals between 2020 and 2050 by main sources and sinks across pathways

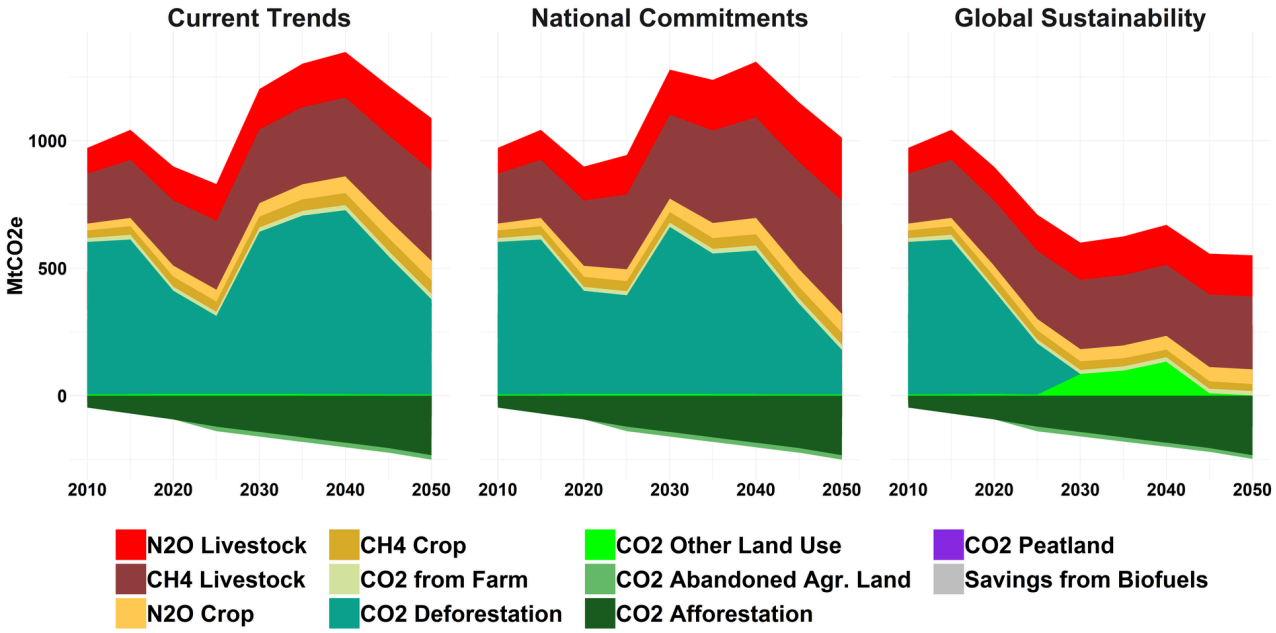


Figure 9. Share of cropland under agroecological practices

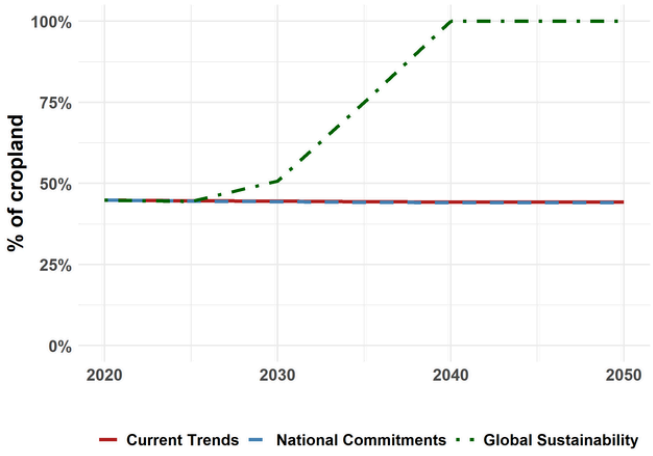
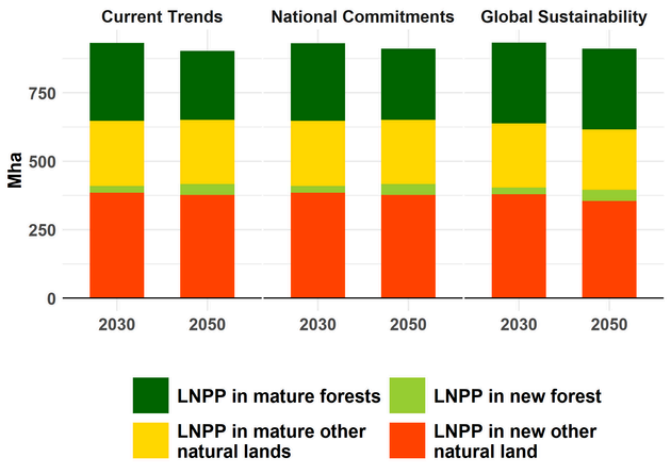


Figure 10. Total area of land where natural processes predominate (LNPP)



Agroecological practices included: Cover crops, cultivar mixtures, diversified farming systems, embedded natural, organic farming, no/minimal tillage.

Figure 11. Nitrogen application

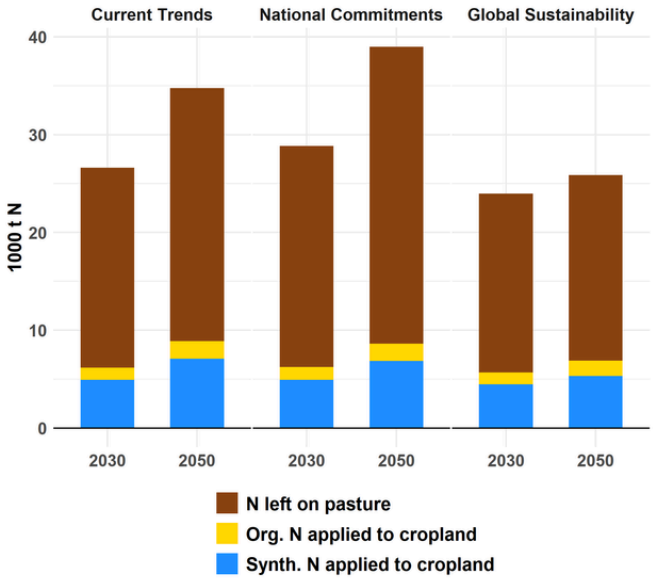
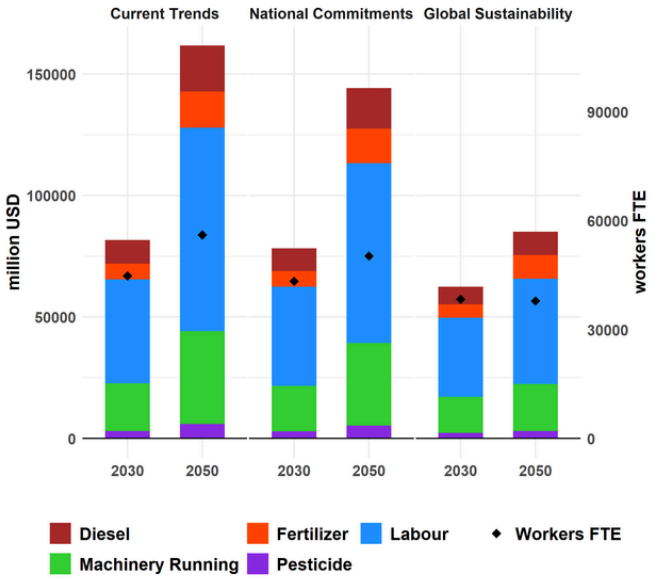


Figure 12. On farm production costs



FTE: Full-time equivalent

For more detailed results and visual data, visit www.scenathon.org

Scenarios and assumptions

		A) CURRENT TRENDS	B) NATIONAL COMMITMENTS	C) GLOBAL SUSTAINABILITY	Justification
1. Macroeconomics	**1.1)** GDP per capita	SSP2: 4% GDP growth per year to 2050	SSP1: 7% GDP growth per year to 2050	SSP1: 7% GDP growth per year to 2050	Current 4% growth which is set to continue (WEO). RSSA countries are aiming for high growth, but this will be hard to achieve because of the global economic slump. "Moreover, the [Russia-Ukraine war] shock compounds some of the region's most pressing policy challenges, including the COVID-19 pandemic's social and economic legacy, climate change, heightened security risks in the Sahel, and the ongoing tightening of monetary policy in the United States. Because of this, the growth momentum for the region has weakened this year with economic activity expected to expand by 3.8 percent. While the economic recovery is projected to accelerate in 2023 to about 4 percent over the medium term, this pace is not enough to make up for lost ground from the pandemic. Besides accelerating the COVID-19 vaccination campaign, immediate policy priorities include helping the most vulnerable households cope with high food and energy costs without adding to existing debt vulnerabilities, containing inflation pressures, and managing exchange rate adjustments. " Source: IMF - A New Shock and Little Room to Maneuver African Union Agenda 2063 is aiming for 7% GDP growth rate by 2021. Most RSSA countries are low-income and socio-economic development is needed to bring the majority of the population towards decent levels of income and well-being
	1.2) Population	UN_medium: 3% population growth per year to 2050	UN_medium: 3% population growth per year to 2050	UN_momentum: 2% population growth per year to 2050	African population growth is about 3% per year. Slowing population growth does not appear to be a regional priority. However, a rapid slowing down

Scenarios and assumptions

		A) CURRENT TRENDS	B) NATIONAL COMMITMENTS	C) GLOBAL SUSTAINABILITY	Justification
					of population growth is needed globally if we expect all people everywhere to have a similar level of resource consumption to the average European, Chinese, or South African.
	1.3) Inflation	Average: prices under inflation are dependent on global trends	Average: prices under inflation are dependent on global trends	Average: prices under inflation are dependent on global trends	Inflation is high in RSSA at 12% in 2022, expected to decrease to 10% in 2023. The inflation outlook is highly uncertain due to the war in Ukraine and its potential effects on oil and food prices. Many countries in the region have a high dependency on food imports, e.g. 30-60% of cereals are imported in many countries. IMF - A New Shock and Little Room to Maneuver
	1.4) Inequalities	Continuation of trends between 2013 to 2021: reduction in inequality (Gini coefficient) from 40 to 38, reduction in population living below the national poverty line from 33% to 30%; increase from 21% to 28% in parliamentary seats held by women.	Reduce inequality (Gini coefficient) from 40 in 2013 to 32 in 2023. Reduce % of the population living below the national poverty line from 33% in 2013 to 23% in 2023. Ensure 30% of parliamentary seats are held by women by 2023	Reduce inequality (Gini coefficient) from 40 in 2013 to 10 in 2030. Reduce % of population living below the national poverty line from 33% in 2013 to 10% in 2030. Ensure 50% of parliamentary seats are held by women by 2030	African Union Agenda 2063 Goal 1; Continental Progress Report on the African Union Agenda 2063 (2022)
2. Land	**2.1)** Constraints on agricultural expansion/deforestation	FreeExpansion: harvested area set to expand from 2.19 Mha in 2012 to 3.57Mha by 2050	As per CT	NoExpansion: in line with the global biodiversity framework, the conversion of natural lands will stop by 2030 or sooner.	Harvested areas are set to increase by two-thirds if current trends continue, from 2.19 M ha in 2012 to 3.57 Mha in 2050. Source: FAO – Global Perspective Studies At the same time, the African Union has committed to raising yields of the top five priority commodities in each country, and so far in the case study countries the AU reports on, this has

Scenarios and assumptions

		A) CURRENT TRENDS	B) NATIONAL COMMITMENTS	C) GLOBAL SUSTAINABILITY	Justification
					been done primarily through agricultural expansion (Continental Progress Report on the African Union Agenda 2063 (2022))
	2.2) Afforestation, and forest plantations targets	Continuation of GGW trends between 2000 and 2018, during which 18Mha land was restored, i.e. restoration of 1Mha per year for a total restoration of 50Mha by 2050 (no trends on AFR100 restoration available)	2-5 Mha afforestation per year to reach 83 Mha by 2030, compared to 2000 (GGW and AFR100)	As per national pathway.	Regional commitment " To urge countries to develop programs on afforestation and reforestation in order to restore degraded areas and enhance carbon sinks;" ((p.17, in AU 42147 2017) African Ministerial Conference on the Environment Sixteenth session - Report of the ministerial segment Great Green Wall is a project aiming to restore 100 Mha of land and sequester 250 million tonnes of CO2. By 2021, the GGW had restored 18 Mha (EU briefing PE 738.201, 2022) AFR100 Africa wide ambition is 100 Mha by 2030. 83Mha represents Africa total minus Ethiopia (15Mha) and Rwanda (2Mha) (AFR100).
	2.3) Urban and settlements area	SSP2: urbanization increases with population, so 3% growth per year to 2050	SSP2: urbanization increases with population, so 3% growth per year to 2050	SSP2: urbanization increases with population, so 2% growth per year to 2050	
	2.4) Protected areas	NoChange	PAExpansion: expansion to cover 17% of land by 2023	PAExpansion: expansion to cover 30% of land by 2030	For national pathway: African Union Agenda 2063; African Union Climate Change and Resilient Development Strategy and Action Plan (2022-2032). For global sustainability: post-2020 GBF

Scenarios and assumptions

		A) CURRENT TRENDS	B) NATIONAL COMMITMENTS	C) GLOBAL SUSTAINABILITY	Justification
3. Productivity and management	**3.1)** Crop productivity for the key crops	BAUGrowth between 2020 and 2050, where there is the same productivity growth as over 2000-2010, for most crops. HighGrowth between 2020 and 2050 for maize, rice, sorghum, millet, bananas: from 1.6 t/ha to 2.3 t/ha maize grain, 1.8 to 2.91 t/ha paddy rice, 0.87 to 1.33 t/ha for sorghum, 0.66 t/ha to 0.94 t/ha for millet, 9.52 to 15.6 for bananas	As per CT, except for the following: HighGrowth between 2020 and 2050 for regional priority commodities: 238% increase in t/ha for wheat, cotton, maize, millet, cocoa, when 2020 yields were 1.47 t/ha wheat (Egypt), 17.7 t/ha cotton (Egypt), maize 1.6 t/ha (FAO), millet 0.66 t/ha (FAO),0.87 t/ha cocoa (Côte d'Ivoire).	As per CT, except for the following: HighGrowth between 2020 and 2050 for regionally important and climate-compatible commodities: 238% increase in t/ha for millet, sorghum, cocoa, banana, when 2020 yields were millet 0.66 t/ha (FAO),0.87 t/ha cocoa (Côte d'Ivoire), sorghum 0.87 t/ha, banana 9.52 t/ha	Technological progress alone is expected to increase yields by 50% between 2012 and 2015. Crop yields for specific crops are expected to increase due to technological progress, climate change, and price effects between 2012 and 2050, e.g., from 1.6 t/ha to 2.3 t/ha maize grain, 1.8 to 2.91 t/ha paddy rice, 0.87 to 1.33 t/ha for sorghum, 0.66 t/ha to 0.94 t/ha for millet, 9.52 to 15.6 for bananas. Some key commodities are only expected to increase a little, e.g., cocoa from 0.48 t/ha to 0.57 t/ha and coffee from 0.49 to 0.66 t/ha. Source: FAO – Global Perspective Studies Africa Union Agenda 2063 pledges substantial yield increases for each country's national priority commodities, with an average increase of 238% for the first five priority commodities. Continental Progress Report on the African Union Agenda 2063 (2022) Globally, diets need to be largely plant-based for the planet to stay within safe environmental boundaries. Beef and sheep are among the worst commodities for GHG emissions.
	3.2) Cropland under agroecological practices	NoChange	30% of agricultural land will be under agroecological practices by 2023, ensuring productivity increases on land that is converted from other practices.	100% of agricultural land will be under agroecological practices by 2030, ensuring productivity increases on land that is converted from other practices.	"The second Sustainable Development Goal (SDG#2) is to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. SDG#2 can be achieved by doubling agricultural productivity and the incomes of smallholder food producers. In addition, one can ensure sustainable food production systems through implementing resilient agricultural practices that increase productivity and

Scenarios and assumptions

		A) CURRENT TRENDS	B) NATIONAL COMMITMENTS	C) GLOBAL SUSTAINABILITY	Justification
					production. " (p.1, African Union Irrigation Strategy 2020) Goal 7 of the AU Agenda 2063 is 30% agricultural land under sustainable land management by 2023.
	3.3) Livestock productivity for the key livestock products	BAUGrowth between 2020 and 2050, where there is the same productivity growth as over 2000-2010	HighGrowth, with increases of 238% for dairy cows and chicken	HighGrowth, with increases of 238% for chicken	African Union Agenda 2063 Goal indicators, Goal 5 Between 2013 and 2023, increase productivity of first national priority commodity by 188%, second national priority commodity by 450%, third national priority commodity by 179%, fourth national priority commodity by 191%, fifth national priority commodity by 180%. Mean increase: 238% (Annex A, Continental Progress Report on the African Union Agenda 2063, 2022). Globally, diets need to be largely plant-based for the planet to stay within safe environmental boundaries. Beef and sheep are among the worst commodities for GHG emissions.
	3.4) Pasture stocking rate	optimal	optimal	optimal	No targets were identified, so optimal stocking rates were assumed.
	3.5) Forest management	No targets identified	No targets identified	No targets identified	AU 2063 pledges to 'Sustainably manage the continent's rich biodiversity, forests, land, and waters and using mainly adaptive measures to address climate change risks, by 2063'. However, no measurable targets were identified.
4. Trade	**4.1)** Share of consumption which is imported for key imported products (%)	I2: no change in imports	I1: imports of rice are reduced by 2050. Imports of other imports stays constant.	I1: imports of rice are reduced by 2050. Imports of other imports stays constant.	Aim of national and sustainable pathway is to increase regional self-sufficiency and reduce dependence on food imports.

Scenarios and assumptions

		A) CURRENT TRENDS	B) NATIONAL COMMITMENTS	C) GLOBAL SUSTAINABILITY	Justification
	4.2) Evolution of exports for key exported products (1000 tons)	FatDiet: Daily energy consumption is expected to rise from 2384 kcl/person to 2667 by about 2030, and stay at about this level to 2050. Large increases in beef consumption, with decreases in consumption of roots and tubers, and most cereals except rice (consumption of barley and maize give way to rice). Source: FAO – Global Perspective Studies The number of undernourished is set to decrease by 2025 but then start to increase exceeding 2012 levels by 3035, due to population growth	FatDiet: Daily energy consumption is expected to rise from 2384 kcl/person to 2667 by about 2030, and stay at about this level to 2050. Large increases in beef consumption, with decreases in consumption of roots and tubers, and most cereals except rice (consumption of barley and maize give way to rice). Source: FAO – Global Perspective Studies The number of undernourished is set to decrease by 2025 but then start to increase exceeding 2012 levels by 3035, due to population growth	EATLancetAverage	Daily energy consumption is expected to rise from 2384 kcl/person to 2667 by about 2030 and stay at about this level to 2050. Large increases in beef consumption, with decreases in consumption of roots and tubers, and most cereals except rice (consumption of barley and maize give way to rice). Source: FAO – Global Perspective Studies The number of undernourished is set to decrease to 2025 but then start to increase exceeding 2012 levels by 3035, due to population growth. Source: FAO – Global Perspective Studies
5. Food	**5.1)** Average dietary composition	FatDiet: Daily energy consumption is expected to rise from 2384 kcl/person to 2667 by about 2030, and stay at about this level to 2050. Large increases in beef consumption, with decreases in consumption of roots and tubers, and most cereals except rice (consumption of barley and maize give way to rice). Source: FAO – Global Perspective Studies	FatDiet: Daily energy consumption is expected to rise from 2384 kcl/person to 2667 by about 2030, and stay at about this level to 2050. Large increases in beef consumption, with decreases in consumption of roots and tubers, and most cereals except rice (consumption of barley and maize give way to rice). Source: FAO – Global Perspective Studies	EATLancetAverage	Daily energy consumption is expected to rise from 2384 kcl/person to 2667 by about 2030 and stay at about this level to 2050. Large increases in beef consumption, with decreases in consumption of roots and tubers, and most cereals except rice (consumption of barley and maize give way to rice). Source: FAO – Global Perspective Studies The number of undernourished is set to decrease to 2025 but then start to increase exceeding 2012 levels by 3035, due to population growth. Source: FAO – Global Perspective Studies

Scenarios and assumptions

		A) CURRENT TRENDS	B) NATIONAL COMMITMENTS	C) GLOBAL SUSTAINABILITY	Justification
		The number of undernourished is set to decrease by 2025 but then start to increase exceeding 2012 levels by 3035, due to population growth	The number of undernourished is set to decrease by 2025 but then start to increase exceeding 2012 levels by 3035, due to population growth		
	5.2) Share of food consumption which is wasted at household level	Current	Current	Reduced	Slowing household food waste does not appear to be a concern or a regional priority, possibly due to low levels of waste.
6. Biofuels	**6.1)** Targets on biofuel and/or other bioenergy use	NoChange	OECD_AGLINK	OECD_AGLINK	"To upscale the development and use of clean renewable energy to drive sustainable development on the African continent, and to acknowledge and support the work of the Africa Renewable Energy Initiative in that regard;" and "To support regional and national initiatives that add value to the energy potential of African countries, such as wind and solar energy, among others; " (#39 and 41, in AU 42147 2017, African Ministerial Conference on the Environment Sixteenth session - Report of the ministerial segment)
	6.2) Targets on other non-food use	No targets identified	No targets identified	No targets identified	-
7. Water	**7.1)** Irrigated crop area	NoChange	Increase by 50% between 2020 and 2050	Increase by 20% between 2020 and 2050	Malabo declaration re-emphasizes efficient and effective irrigation-based water use and management systems as one of the main strategies to end hunger in Africa by 2025. African Union Agenda 2063 and its 10-year Action Plan of moving towards the “Africa we want”, highlights irrigation as key to achieving modern agriculture for increased production, productivity, and value addition. Indicators of Agenda 2063 include: increase 2013 levels of water productivity from rain-fed agriculture and irrigation by 60%; harvest at least 10% of rainwater for productive use; and

Scenarios and assumptions

		A) CURRENT TRENDS	B) NATIONAL COMMITMENTS	C) GLOBAL SUSTAINABILITY	Justification
					recycle at least 10% of wastewater for agricultural and industrial use. See AU Framework for Irrigation Development and Agricultural Water Management in Africa (2020)