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LIVING PLANET MONITOR

CENTRAL, NORTH, AND WEST AFRICA

Monitoring Our Commitment to Sustainable Food Systems, Land Conservation, Biodiversity, and Water Justice in Africa.

The Living Planet Monitor provides an overview of the situation in a particular continent by monitoring indicators on food security, water resources, land use, and climate resilience. It is a key instrument for faith communities to stay informed about the current situation, share good practices and projects led by church-based organizations, and give hope and courage to transform the situation.

World Council of Churches

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Introduction

We present the second edition of the *Living Planet Monitor* for Central, North, and West Africa at a time when the global community faces unprecedented ecological and humanitarian challenges. Recent years have reminded us how fragile our systems of land, water, and food have become. From the devastating floods in Libya that displaced thousands and destroyed farmland, to prolonged droughts across the Sahel that have deepened hunger and the rising costs of food imports triggered by geopolitical conflicts such as the ongoing war in Ukraine, the reality is stark: our planet's crises are intensifying, and Africa remains on the front lines. Wars and armed conflicts in North, West, and Central Africa, including Cameroon, Nigeria, Sudan, Chad, and Ethiopia, have severely undermined food security by disrupting agricultural production, displacing millions of people, limiting access to markets, and destroying infrastructure essential for food systems.

This publication highlights the interconnections between food insecurity, water scarcity, and land degradation across the African continent. In Nigeria, food inflation reached record levels in 2024, forcing families to cut back on meals. In Mali and Niger, shrinking rivers and aquifers are not only threatening harvests but also fuelling intercommunal tensions. In North Africa, the Nile Delta and Maghreb farmlands face rapid salinization and urban encroachment, threatening some of the region's most fertile land. Across Central Africa, the Congo Basin continues to absorb carbon for the world, yet communities there paradoxically suffer from economic water scarcity, as abundant natural resources cannot be accessed due to weak infrastructure and conflict.

As people of faith, we recognize that these challenges are not only technical or political—they are moral and spiritual. To allow children to go hungry, to deny communities access to clean water, or to degrade the land that sustains life is a violation of God's creation and of the human dignity entrusted to us all. This is why churches and faith-based organizations are stepping forward with prophetic urgency. From school feeding programmes in the Democratic Republic of the Congo that reduce dropout rates, to Blue Community initiatives in Mali that treat water as a sacred right, to advocacy in Nigeria for land stewardship and food sovereignty, our faith communities are demonstrating that hope can be planted even in hard soil.

This report is both a diagnosis and a call to action. It reminds us that ecological crises in Africa are intertwined with global systems of injustice and consumption, but it also points to seeds of resilience sprouting across the region. Faith communities must continue to build bridges—between local initiatives and global advocacy, between policymakers and grassroots realities, and between spiritual care and ecological action.

As the World Council of Churches embarks on the Ecumenical Decade of Climate Justice Action (2025–2034), we affirm that the struggles for land, water, and food justice in Africa are central to our global pilgrimage of justice and peace. Together, we must transform despair into determination, scarcity into solidarity, and crises into opportunities for renewal.

We invite you to read this edition not only as a report but as a testimony of faith in action—and as an urgent appeal to join hands across Africa and the world for the flourishing of creation and the dignity of all God's people.

Rev. Dr Kenneth Mtata
Programme director
Life, Justice, and Peace
World Council of Churches

Athena Peralta
Director
Commission on Climate Justice and
Sustainable Development/Living Planet
World Council of Churches

Editorial

Dear readers,

Welcome to the second edition of the *Living Planet Monitor*, an initiative led by the World Council of Churches (WCC) through the Programme on Ecumenical Advocacy for Land, Water, and Food Justice, within the Living Planet programme unit of the Life, Justice, and Peace department. This publication is dedicated to exploring the intersection of faith, climate change, food security, land use, biodiversity, and water accessibility across our global community. With each issue, we journey to a different continent and explore the specific context of one region, shining a light on unique challenges and inspiring solutions.

In this second edition, we turn our attention to Central, North, and West Africa. Africa is a continent of immense diversity, facing complex environmental challenges and bearing the brunt of climate change impacts. Many regions are facing severe droughts, unpredictable rainfall patterns, and increasing food insecurity. Yet, amid these challenges, we find stories of resilience, innovation, and hope.

Our feature interviews bring you stories from faith communities across West, Central, and North Africa, each confronting unique challenges but united in their commitment to stewardship of our shared Earth. You'll read about innovative projects that not only address immediate needs but also build long-term resilience in communities most vulnerable to environmental and social upheaval.

As we explore these topics, we're reminded that the issues of climate change, food security, and water access are not isolated concerns—they're interconnected challenges that require holistic solutions. The projects and stories we share demonstrate how faith communities are uniquely positioned to address these complexities, weaving together spiritual teachings with practical action.

We're also excited to announce that this publication continues the journey we began with our first edition. Moving forward, we'll be inviting you, our readers, to share your own stories and projects. Your experiences and insights are invaluable as we work together to create a more just and sustainable world. In the spirit of continuous learning and action, we'll provide a sneak peek of the theme for our next issue and recommend resources for those who wish to delve deeper into these crucial topics.

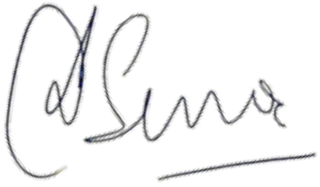
In the coming pages, you'll find in-depth interviews, case studies, project spotlights, and a detailed presentation of the current situation that paint a vivid picture of climate-related challenges facing Central, North, and West Africa, as well as innovative solutions being developed at the grassroots level.

The *Living Planet Monitor* is a reminder of our commitment to sustainable food systems, land conservation, ecological biodiversity, and the protection of water resources. Through faith-based initiatives, we are tackling these issues in the framework of justice and human rights.

We hope this periodic publication will support your understanding of the ecological issues affecting our living planet and inspire you with good practices from faith communities.

We look forward to receiving your feedback. If you have examples of good practices from your faith community, we would love to receive them and, if possible, include them in our future publications.

On behalf of the editorial team,



Dinesh Suna
Editor
Programme executive
Ecumenical Advocacy for Land, Water,
and Food Justice
World Council of Churches

1. Understanding our world through key indicators

In today's interconnected world, data-driven insights are crucial for addressing global challenges related to land use, water resources, and food security. This publication puts key data on the land–water–food nexus at the fingertips of those working for justice and sustainability—whether churches, civil society organisations, or other faith-based initiatives. By presenting indicators at global, regional, and country levels, we enable readers to analyse specific situations, identify trends, and plan targeted responses that contribute to the United Nations' Sustainable Development Goals (SDGs).

The strength of this publication lies in its reliable data sources. We draw on authoritative United Nations organizations such as the Food and Agriculture Organization (FAO), the World Health Organization (WHO), and the World Bank, as well as peer-reviewed scientific articles, governmental reports, and other trusted sources. To ensure transparency and support further research, cited data are hyperlinked where possible, giving readers direct access to the original material. This curated compilation of high-quality data offers a practical tool for informed decision-making and effective policy engagement on the complex challenges at the intersection of land, water, and food systems.

1.1. Indicators on land and biodiversity

The land indicators presented in this publication series provide an overview of how countries manage and use their land resources, including land cover and use (such as arable land, land used for agriculture, and forest cover). These indicators are vital for understanding biodiversity conservation, the impacts of land degradation, and the effectiveness of land management policies. Tracking changes over time helps to assess progress toward sustainable land practices and identify areas requiring intervention. The indicators also examine land rights in the region, with a particular focus on land tenure systems and women's rights to land.

Land cover

Land cover is defined as the observed physical cover on the earth's surface, including vegetation (natural or planted) and human constructions. Mapping land cover allows for assessment and monitoring of land ecosystems and changes within them, which are crucial for the sustainable management of natural resources.[1]

Land use

Land use is characterized by the arrangements, activities, and inputs people undertake within a given land cover type to produce, change, or maintain it. Defining land use in this way establishes a direct link between land cover and people's actions in their environment.[2]

Biodiversity

Biodiversity refers to the variety of living species on Earth, including plants, animals, bacteria, and fungi. A common way to measure biodiversity is to count the total number of species living within one particular area. Tropical regions, which are warm year-round, have the most biodiversity, whereas regions with cold or dry conditions have the least.[3]

Land rights

Land rights broadly refer to the bundle of rights—such as use, control, transfer, inheritance, and exclusion—governing how people interact with land and related resources.[4] Importantly, modern governance frameworks require that land rights be explicitly linked to human rights, including tenure security, non-discrimination, and the rights to food, water, and livelihoods. In practice, however, implementation remains slow, and inadequate or insecure tenure continues to undermine these rights.[5]

1.2. Indicators on water resources

Water is a fundamental resource for life and development. The indicators presented here focus on availability, consumption patterns, and management practices. We look at renewable water resources, access to safe drinking water, and sanitation facilities. These metrics are essential for evaluating a country's water security, the sustainability of its water use, and the effectiveness of its water management policies. The indicators also examine governance aspects, such as whether water systems are under public or private control and the potential impact on governments' ability to uphold the right to water for their populations. Understanding these indicators is crucial in the context of increasing water scarcity due to climate change, neoliberal policies, and changing consumption patterns.

Water availability

Water availability refers to how much water is physically accessible (water quantity) and whether that water is safe to use (water quality). The differences in water quantity and quality across the landscape, and how they change through time, determine whether there is enough water for human and ecosystem needs.[6]

Water use

Water use refers to the water actually used by end users, such as households, services, and agriculture, within a territory for a specific purpose, such as domestic use, irrigation, or industrial processing.[7]

Water scarcity

Water scarcity refers to a lack of freshwater available to meet human demand, either due to physical shortage or to limited access caused by weak institutions or infrastructure (*economic water scarcity*). It is a relative

concept, as the amount of freshwater that can be accessed changes with both supply and demand. Scarcity intensifies as demand grows and/or as water supply decreases in quantity or quality.[8]

Water stress

Water stress refers to the pressure that water withdrawals from agriculture, industry, and households place on renewable freshwater resources. It is measured as the ratio of total freshwater withdrawn to total renewable freshwater available, after accounting for water needed to sustain rivers and ecosystems. When withdrawals exceed sustainable levels, water stress degrades freshwater resources in terms of quantity (overexploitation, dry rivers, etc.) and quality (eutrophication, organic matter pollution, saline intrusion, etc.), undermining both healthy ecosystems and the well-being of communities.[9]

Falkenmark Water Stress Index

The Falkenmark Water Stress Index is an indicator of water scarcity based on renewable freshwater availability per person. It does not consider actual water use or withdrawals; instead, it is calculated as total renewable water resources divided by population (cubic metres per capita per year). Although terminology and thresholds vary somewhat across the literature, four categories are commonly used: no stress (more than 1,700 m^3 per capita per year), water stress (1,700–1,000 m3 per capita per year), water scarcity (1,000–500 m3 per capita per year), and absolute scarcity (fewer than 500 m^3 per capita per year).[10]

1.3. Indicators on food security and agriculture

Food security is a critical aspect of human well-being and national stability. The food indicators presented here cover several dimensions, such as availability, access, utilization, and stability. They include metrics such as prevalence of undernourishment, food price inflation, and agricultural productivity. These indicators help assess a country's ability to feed its population, the nutritional status of its people, and the resilience of its food systems to shocks. In an era of climate uncertainty and global market volatility, these indicators are invaluable for identifying vulnerabilities and informing policy decisions.

Food security

Food security exists "when all people, at all times, have physical, social, and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."[11]

Moderate and severe food insecurity

A person is food insecure when they lack regular access to enough safe and nutritious food for normal growth and development and an active and healthy life. People experiencing moderate food insecurity have had to reduce the quality or quantity of their food and are uncertain about their ability to obtain food due to a lack of money or other resources. Severe food insecurity is a situation in which a person has run out of food or has gone days without eating.[12]

Prevalence of undernourishment or hunger

Hunger is an uncomfortable or painful physical sensation caused by insufficient consumption of dietary energy. It becomes chronic when the person does not consume a sufficient amount of calories on a regular basis to lead a normal, active, healthy life. The prevalence of undernourishment estimates the extent of hunger in the world.[13]

Prevalence of stunting

Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation. Children are defined as stunted if their height-for-age is more than two standard deviations below the WHO Child Growth Standards median.[14]

By examining these interconnected indicators, we aim to provide a holistic view of each country's challenges and opportunities in managing its natural resources and ensuring the well-being of its population. This knowledge is crucial for policymakers, researchers, and engaged citizens alike, as we collectively work toward a more sustainable and food-secure future.

We hope this series will foster a deeper understanding of these critical issues and inspire informed discussions and actions toward addressing global challenges in land management, water resources, and food security.

2. Regional analysis of land use, water resources, and food security

2.1. Indicators: land and biodiversity

2.1.1. West Africa

West Africa spans about 615 million hectares (6.15 million km^2) across 16 countries and several overseas territories, from the arid Sahel in the north to humid coastal forests in the south. About 49% of this land area is used for agriculture, although patterns vary widely: in Nigeria, agricultural land covers 76.2% of the total area, while at the other end of the spectrum, countries such as Cabo Verde (19.6%), Guinea-Bissau (29.9%), and Liberia (20.0%) have much lower shares.[15]

Forests cover about 12 % of West Africa's land area.[16] According to the Food and Agriculture Organization (FAO), forest cover in West and Central Africa declined by an average of 1.86 million hectares per year between 2010 and 2020, one of the highest rates of forest loss worldwide. These forests are also critical biodiversity reservoirs: in 2020, about 22% of the region's forests (around 60 million ha) were officially designated as protected areas, with biodiversity conservation as their primary purpose. Despite this progress, biodiversity remains under severe pressure from deforestation, forest degradation, and unsustainable resource use.[17]

2.1.2. Central Africa

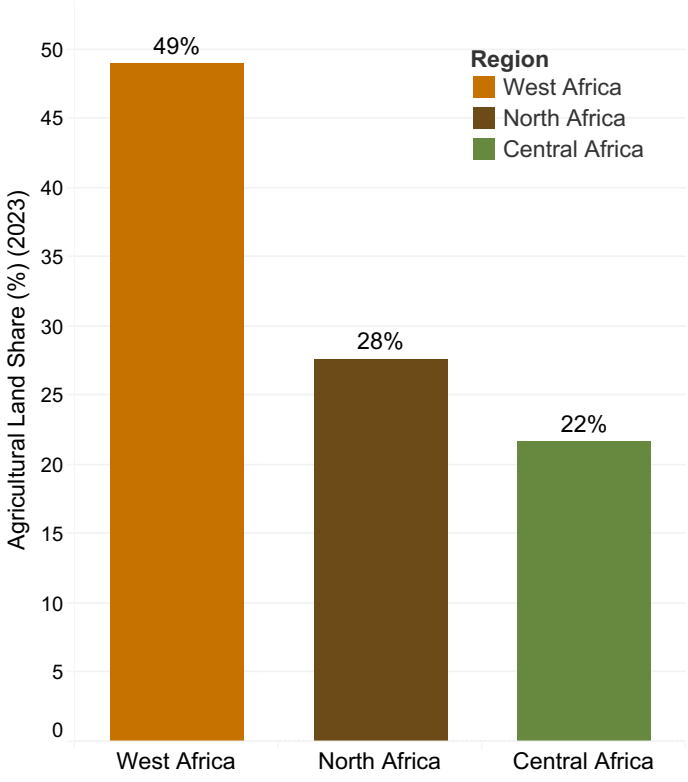
Central Africa encompasses about 536.5 million hectares (5.365 million km^2) across seven countries—Cameroon, the Central African Republic, Chad, the Republic of the Congo, the Democratic Republic of the Congo (DRC), Equatorial Guinea, and Gabon. The subregion is dominated by the Congo Basin forest ecosystem, the world's second-largest tropical forest after the Amazon. Agricultural land accounts for about 22% of the subregion's land area.[18]

Forests cover a substantial share of Central Africa's land area. According to the FAO's *Global Forest Resources Assessment 2020*, West and Central Africa together lost an average of 1.86 million hectares of forest per year between 2010 and 2020 (around 0.6% annually). Despite this, the region remains an exceptional biodiversity reservoir, with about 22% of its forests (around 60 million ha) officially designated as protected areas with biodiversity conservation as their primary purpose, though many face severe management challenges due to resource limitations and conflict.[19]

Across Central Africa, land governance continues to reflect the contradictions between colonial land laws and customary tenure. In most countries, statutory frameworks vest ownership in the state, yet formal land institutions remain weak, and customary systems dominate in practice. Some countries, particularly the Democratic Republic of the Congo, have also been profoundly affected by conflict in which rival armed groups contest control of land, people, and natural resource revenues.[20] Forest degradation and deforestation are strongly associated with accessibility: roads, settlements, and agricultural expansion remain the key drivers across the Congo Basin.[21]

Share of Agricultural Land by Region

Agricultural land use is widespread in West Africa, while North and Central Africa retain vast desert and forest areas.



At the same time, extensive land allocations to logging, mining, and agribusiness concessions have reinforced patterns of foreign control established during the colonial period. In Gabon, for example, more than half of the national territory has been granted as forestry and agricultural concessions, many of which trace their roots to concession systems created under colonial rule.[22] These overlapping pressures—limited tenure security, conflict, extractive concessions, and expanding frontiers of degradation—frame the region's contemporary land challenges.

2.1.3. North Africa

North Africa covers approximately 800 million hectares (7.9 million km^2) across seven countries: Algeria, Egypt, Libya, Morocco, Sudan, Tunisia, and Western Sahara.[23] The region is dominated by the Sahara desert, which accounts for most of its land area, but also includes the Atlas Mountains, narrow Mediterranean coastal zones, and fertile stretches along the Nile Valley and Delta. These limited fertile areas contrast sharply with the arid interiors of countries such as Libya and Western Sahara, where over 90% of the land is desert.[24]

The region's biodiversity, though less abundant than in tropical areas, is marked by high endemism, with roughly 20% of plant species unique to North Africa, especially in mountain and oasis ecosystems. So far, 3,613 species have been assessed for their conservation status, of which 9-18% are threatened, but many more remain to be evaluated.[25]

Land governance systems derive from complex historical layering of traditional Islamic law, colonial influences, and post-independence reforms, with varying degrees of centralization. Agricultural land in fertile zones faces intense pressure from urbanization: in Egypt's Nile Delta, about 173,400 hectares (1,734 km^2) of fertile soils—roughly 8% of the delta's total area—are threatened by rapid urbanization.[26]

Gender disparities in land ownership persist throughout the region despite legal reforms in several countries. Women's ownership of agricultural land remains very limited—around 5% in Egypt and at similarly low levels in Libya and Algeria.[27]

2.2. Indicators: water resources

2.2.1. West Africa

Water resources in West Africa are highly variable in both space and time. Long-term average annual precipitation exceeds 2,000 mm in Sierra Leone and Liberia. In contrast, in the northern Sahel, including parts of Mali (282 mm), Niger (151 mm), and Mauritania (92 mm), total rainfall falls below 300 mm.[28] The region hosts several major river systems, including the Niger, Senegal, Gambia, and Volta, all managed under transboundary basin authorities with varying levels of integration and effectiveness.[29]

Agriculture is the leading water user in the Sahel countries—Mali (97.9%), Niger (91.0%), Mauritania (90.6%), and Senegal (91.3%)—with high withdrawals for this purpose. In contrast, municipal and industrial uses are much more significant in coastal states: Benin (25.2%), Nigeria (44.2%), and Sierra Leone (21.5%).[30]

Access to at least basic drinking water services is relatively high in Cabo Verde (92%), Ghana (90%), and Senegal (88%), but much lower in Niger (53%), Sierra Leone (68%), Togo (65%), and Mauritania (77%).[31]

Over the past three decades, many West African countries have introduced new water laws and national policies to promote more sustainable and fair use of water. Regional bodies such as the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (WAEMU) have also encouraged cooperation, with WAEMU adopting a regional water plan running until 2030. In practice, however, progress has been uneven. Limited funding and weak institutions mean that many plans remain only partly implemented.[32]

Private-sector participation in urban water services has expanded in several countries, notably Senegal and Côte d'Ivoire, with mixed outcomes for service coverage, equity, and affordability.[33]

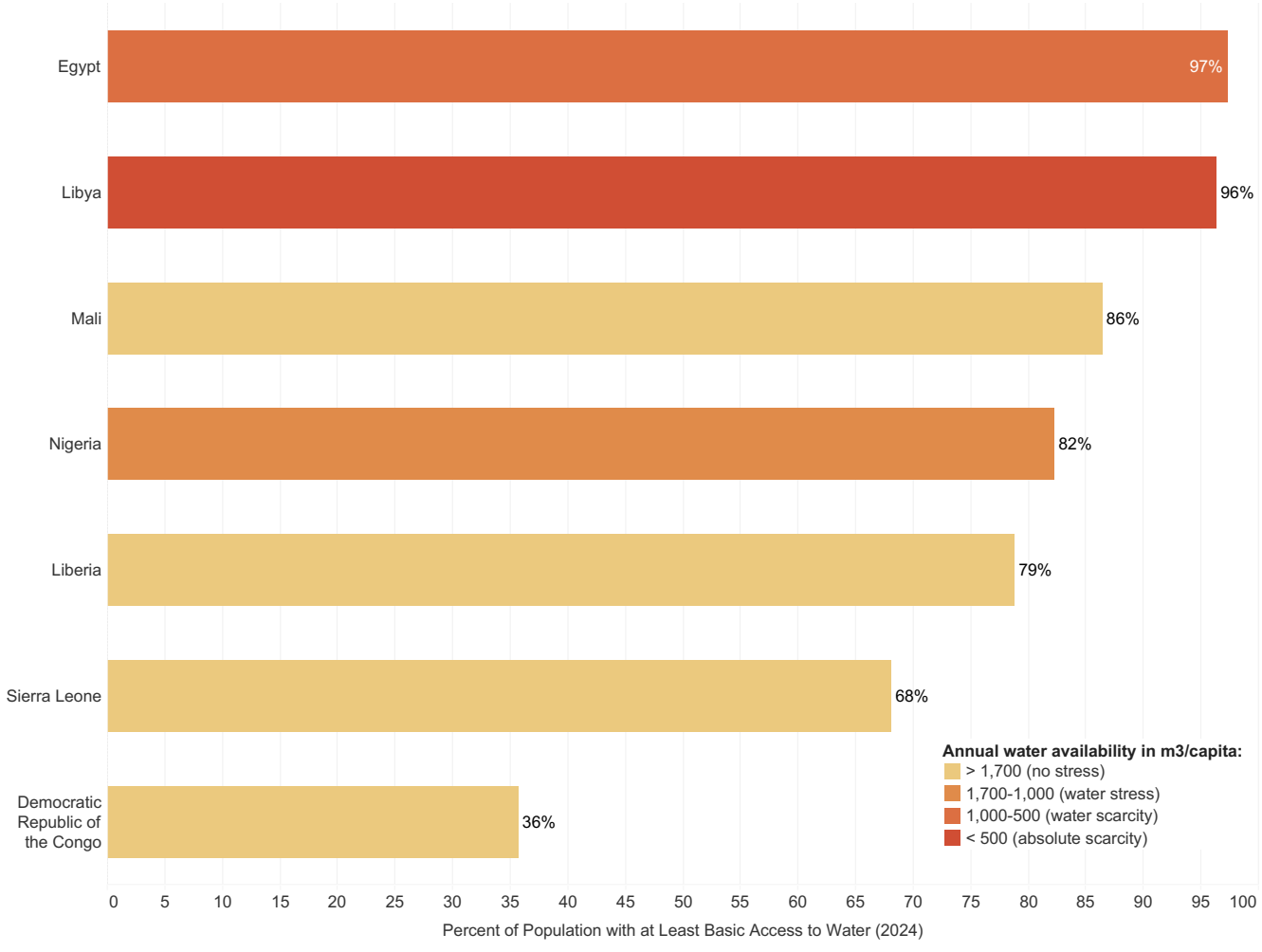
2.2.2. Central Africa

Central Africa has abundant water resources, with the Congo River discharging more water than any other river worldwide, except the Amazon. Extensive wetlands and large inland lakes provide many socio-economic benefits. Despite this abundance, resources are unevenly distributed and not well developed.[34]

The region's economies are largely based on mining and the export of unprocessed products, while agriculture remains predominantly rain-fed. The Democratic Republic of the Congo alone has about 13% of the world's hydroelectric potential, yet less than 3% is currently exploited. Meanwhile, only a small share of fertile land, such as in the Central African Republic, is under cultivation.[35]

Lacking access to drinking water often unrelated to physical water scarcity

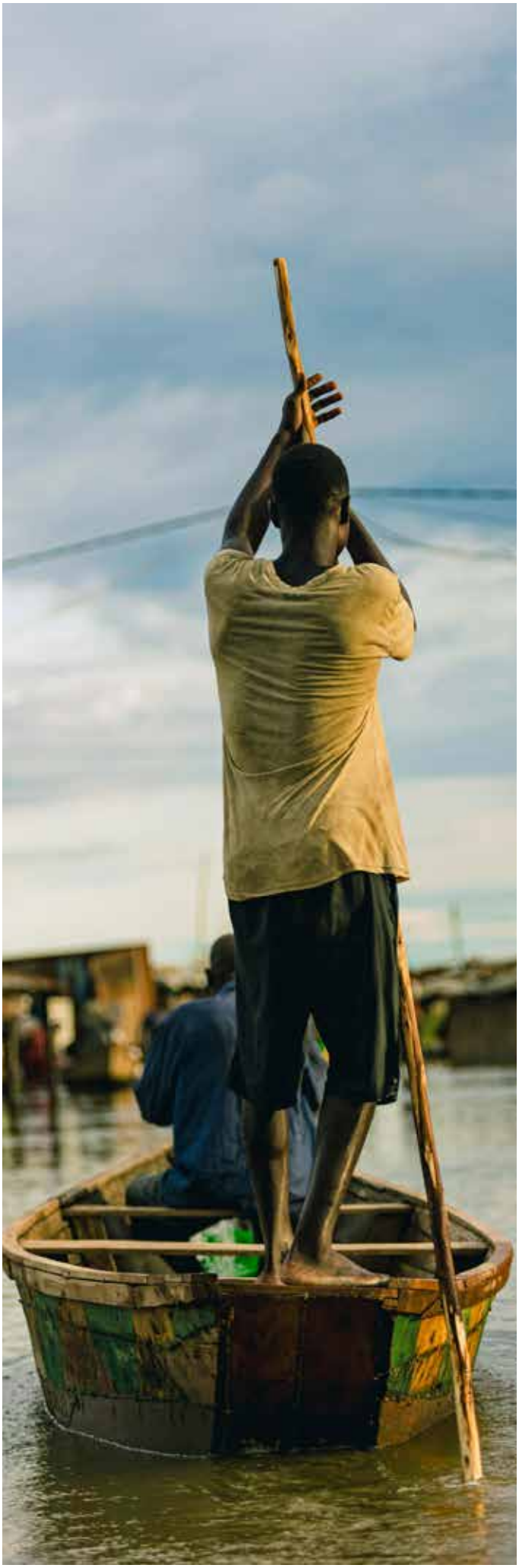
In many sub-Saharan countries, access to drinking water remains limited due to weak infrastructure and governance, even where water resources are relatively abundant.



Agriculture generally plays a smaller role in water withdrawals than elsewhere in Africa, reflecting the predominance of rain-fed farming. Shares remain well below 50 % in most countries—Congo (4.4 %), DRC (10.5 %), Equatorial Guinea (5.1 %), and Gabon (29.0 %)—though Cameroon (67.7 %) and Chad (76.4 %) stand out with higher irrigation use.[36]

Access to at least basic drinking water services remains highly uneven across Central Africa. Coverage is relatively high in Gabon (89%), but falls to around half the population in Chad (52%) and to just over one-third in both the Democratic Republic of the Congo (36%) and the Central African Republic (36%).[37]

Despite the relative abundance of water, rapid population growth and climate variability—marked by more frequent floods and droughts since the 1980s—have increased pressure on natural resources. Effective long-term governance and stronger regional cooperation are essential to ensure sustainable use. The Economic Community of Central African States (ECCAS) adopted a regional water policy in 2009, and the Congo-Oubangui-Sangha Basin Commission (CICOS) has developed a strategic action plan. The Water, Climate and Development Programme (WACDEP) has further supported ECCAS, the Lake Chad Basin Commission, and Cameroon in integrating water security and climate resilience into planning.[38]



2.2.3. North Africa

Water resources in North Africa are among the most constrained globally, with five countries—Egypt (510.6 m^3/person/yr), Libya (96.9 m^3), Tunisia (380.8 m^3), Algeria (256.5 m^3), and Morocco (776.9 m^3)—classified as water-scarce (<1,000 m^3 per capita renewable water resources annually).[39] Climate change projections indicate reductions in precipitation of 10-25% across much of the region by mid-century, potentially exacerbating already severe water stress.[40]

Egypt depends on the Nile for more than 90% of its water resources.[41] In the Maghreb countries—Morocco, Algeria, Tunisia, and Libya—most surface water comes from short, seasonal rivers flowing into the Mediterranean, which are highly variable. Across the region, countries also rely heavily on large, non-renewable aquifers, particularly the Nubian Sandstone Aquifer System, spanning Egypt, Libya, Sudan, and Chad, and the North-Western Sahara Aquifer System, shared by Algeria, Tunisia, and Libya. These vast reserves were largely filled in past humid periods and receive only minimal modern recharge, making their use essentially unsustainable in the long term.[42]

Agriculture dominates water use, accounting for 83.2% in Libya and 87.8% in Morocco, while shares are around 79.2% in Egypt and 75.5% in Tunisia. Algeria is lower at 67.4%, though agriculture remains the largest single water user.[43] Access to at least basic drinking water services is very high overall, with coverage rates between 92% and 97%from Morocco and Algeria (92%) to Egypt (94%), Libya (96%), and Tunisia (97%).[44]

North Africa has made more progress in building legal and institutional frameworks for water management than most other African regions. On the continental index, the subregion scores around 50 points out of 100, reflecting more advanced but still incomplete systems. Morocco, in particular, is seen as a leader, having established river basin agencies under its 2016 Water Law. At the regional level, the Intergovernmental Authority on Development (IGAD) adopted a water policy in 2015 to encourage cross-border cooperation. Yet, even here, significant gaps remain. Financial resources are often insufficient, women are underrepresented in water governance, and the management of large fossil aquifers such as the Nubian Sandstone remains weak.[45]

2.3. Indicators: food security and agriculture

2.3.1. West Africa

Food security and agricultural systems in West Africa reflect the region's ecological diversity, ranging from pastoral systems in the Sahel to mixed crop–livestock systems in savanna zones and root- and tuber-based systems in humid coastal areas.[46] Agriculture remains central to livelihoods, employing about 60% of the workforce and contributing 30-35% to gross domestic product (GDP).[47]

Smallholder family farms predominate, typically ranging from about 1.5 to 12 hectares, with averages of around 3 hectares in many areas. Cropping patterns vary by zone: millet, sorghum, and cowpeas dominate in drier regions; maize, cassava, and yams are more common in humid areas; and rice is grown in irrigated valleys and lowlands.[48]

Cash crop production plays a crucial role in regional economies. In 2015, cocoa-related products accounted for over half of West Africa's agricultural export value, and together with textile fibres and natural rubber, made up more than two-thirds. Côte d'Ivoire was the dominant exporter of cocoa, rubber, coffee, cashews, palm oil, and bananas, while cotton, fish, and tobacco

were produced across a broader range of countries. Although there has been some diversification over time, export dependence on a limited set of cash crops continues to shape the region's agricultural economy.[49]

Food insecurity is widespread and worsening. More than 35 million people in West Africa were already facing crisis levels of hunger in early 2024, and this number is projected to climb to nearly 50 million during the lean season. The situation is especially dire in conflict-affected areas such as Burkina Faso, Mali, Niger, and Nigeria, where violence and displacement continue to disrupt farming and markets.[50]

In 2022, an estimated 42.5% of the region's population—about 139.6 million people—were moderately or severely food insecure. The nutrition situation reflects a triple burden. In 2022, 14.5% of the population was undernourished. Nearly 30% of children under five were stunted, and over half of women of reproductive age (53%) suffered from anaemia.[51]

The main pressures undermining food security include armed conflict and insecurity, economic shocks such as inflation and currency depreciation, and increasingly erratic rainfall, floods, and other extreme weather events.[52] These shocks interact to undermine both pastoral and farming livelihoods.

2.3.2. Central Africa

Central Africa possesses abundant natural resources but faces severe institutional and infrastructure constraints that limit agricultural productivity and market integration. According to UNECA, formal land institutions remain weak: in Cameroon, the 1974 Land Ordinances subordinated customary rights to statutory recognition, but in practice, customary tenure remains the de facto norm, with limited reach of formal institutions. These systems are heavily affected

by timber and mineral extraction, which dominate export earnings and exacerbate competition over land, particularly in conflict-affected parts of eastern DRC.[53]

Agriculture is central to rural livelihoods, though reliable regional employment and GDP data are scarce. Staple crops include cassava and other roots and tubers, while cocoa, coffee, and oil palm are important cash crops, many of which depend on ageing plantations and face declining outputs in some countries. Despite substantial agricultural potential, agriculture remains underfunded compared to extractive sectors. CIRAD, the French Agricultural Research Centre for International Development, notes that economies are dominated by oil, ores, and timber, leaving agriculture marginalized, poverty entrenched, and food security precarious. Insecurity and poor governance further hamper development, contributing to mediocre productivity and weak resource management. At the same time, food and nutrition security have become a growing concern, particularly in urban areas.[54]

Levels of food insecurity in Central Africa are the highest in Africa. According to the FAO, 78.4% of the population experienced moderate or severe food insecurity in 2022, while stunting affected 37.4% of children under five, well above the continental average.[55]

A case study from the Central African Republic illustrates these broader regional patterns: about 75% of the population depends on agriculture for their

livelihood, mostly in informal jobs, yet the sector's contribution to GDP fell from 55% in 2011 to 32% in 2020, and public investment in agriculture has averaged less than 3% of national spending—far below the Comprehensive Africa Agriculture Development Programme (CAADP)'s 10% target.[56]

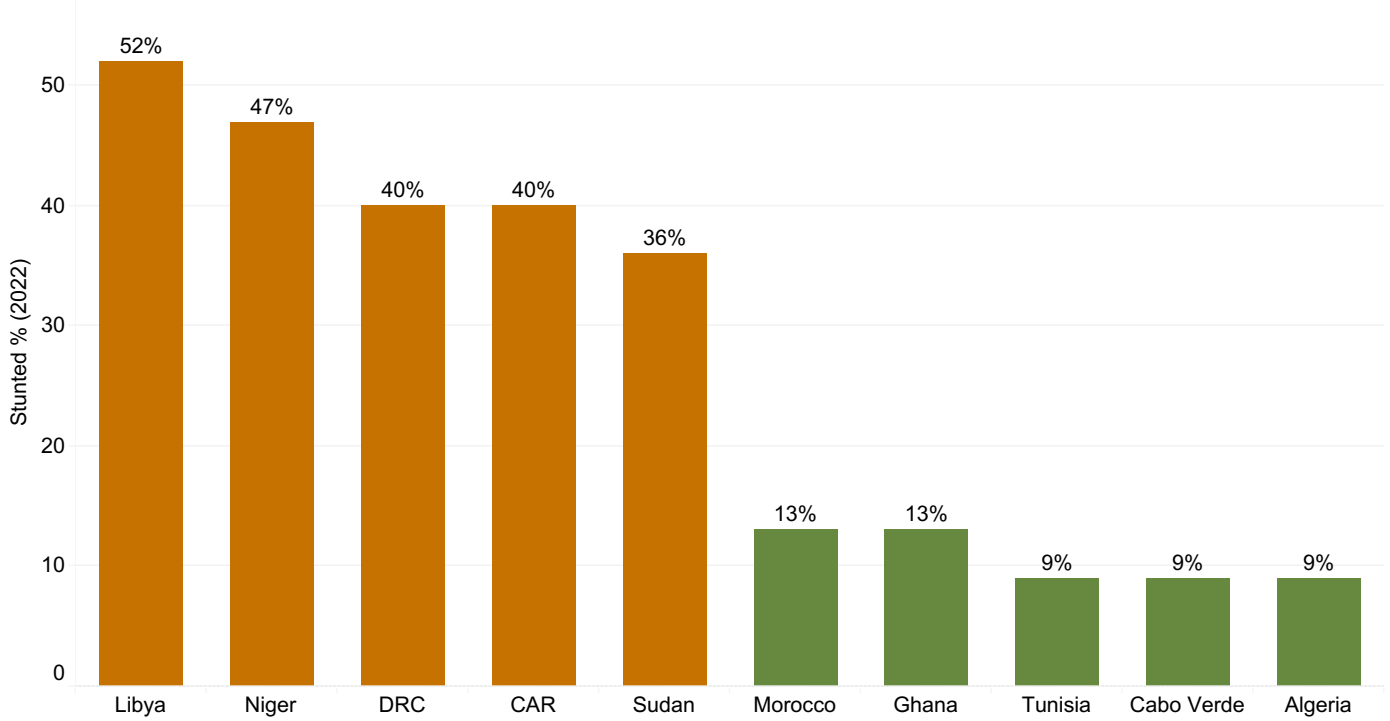
Agricultural development efforts increasingly focus on agroecological and agroforestry systems (cocoa, coffee, cassava, oil palm) and on strengthening value chains, but insecurity and remoteness hinder implementation.[57]

2.3.3. North Africa

North Africa's agricultural systems are constrained by water scarcity, compelling a heavy reliance on irrigated farming in river valleys, oases, and coastal plains. In

Child Stunting (Under-5): Highest and Lowest Rates by Country

Stunting, a sign of chronic undernutrition, is particularly high in Central and conflict-affected regions, while rates are lowest in North and coastal West Africa.



Algeria, Egypt, Tunisia, and Morocco, the share of agriculture in GDP ranges from 11.5% to 14.2%, and the share of the labour force in agriculture is from 10% to 33%, depending on the country. Irrigated land constitutes only around 3 to 5% of total agricultural land in Morocco, Tunisia, and Algeria, compared with nearly 100% in Egypt under its Nile system.[58]

All countries in the region remain net food importers. In Morocco, cereals (especially soft wheat and barley) are staples, but the sector is vulnerable to climatic variability and import dependence. Morocco's cereal import dependency is estimated at 40%, with large year-to-year fluctuations.[59] In Libya, up to 90% of cereal consumption requirements are covered by imports.[60]

Food insecurity in North Africa is lower than in many parts of Sub-Saharan Africa. In 2022, about 32% of the North African population was moderately or severely food insecure. Nutrition outcomes show a dual burden: in 2022, about 20% of children under five were stunted, while 31% of women of reproductive age were anaemic. At the same time, overweight and obesity affected around 25% of adults in the subregion.[61] Food subsidies—particularly for wheat bread—remain fiscally important and help stabilize access to staples, but they also reinforce the consumption of energy-dense foods with lower nutritional value.[62]

North African governments have increasingly supported large-scale irrigated farming in desert zones, sometimes in partnership with foreign agribusinesses, as part of strategies to reduce food import dependence. However, these projects often rely on non-renewable aquifers and may exacerbate water stress rather than sustainably enhance food security.[63]

Climate change intensifies the pressures: projected warming of 2 to 4°C by mid-century threatens both irrigated and rain-fed systems, especially in already water-stressed zones.[64]

3. Country spotlights

3.1. Nigeria

Located in West Africa, Nigeria presents a diverse landscape ranging from coastal swamps in the south to arid savannas in the north. With a population of over 200 million, it is Africa's most populous nation.[65] Economically, Nigeria has a mixed economy with dominant sectors including oil and gas, agriculture, manufacturing, and services. However, challenges such as unemployment, inequality, and poverty persist, requiring ongoing efforts to ensure inclusive growth and development.[66] While significant progress has been made since returning to democratic rule in 1999, the country continues to grapple with developmental challenges, including social and economic disparities. The impacts of climate change are increasingly felt across Nigeria, with rising temperatures, flooding, desertification, and extreme weather events posing significant challenges to agriculture, water resources, and biodiversity.[67]

Indicators: land and biodiversity

Land cover and use

Nigeria covers approximately 92 million hectares and has a coastline stretching about 850 kilometres.[68] Its landscapes range from coastal swamps and tropical rainforests in the south to savannas and semi-deserts in the north. According to Food and Agriculture Organization (FAO) data, three-quarters (75%) of the country's land is used for agriculture, around two-thirds of which is cultivated with crops. The rest is mainly used for grazing, supporting the country's substantial livestock sector. Nigeria's croplands are experiencing severe productivity losses due to widespread erosion, desertification, and soil degradation. Nigeria has also experienced one of the world's highest deforestation rates, losing around 35% of its forest resources between 1990 and 2015.[69]

Biodiversity

Nigeria hosts remarkable biological diversity, with more than 4,700 vascular plant species, 864 bird species, 285 mammal species, 203 reptile species, 117 amphibian species, and over 775 fish species.[70] This biodiversity underpins ecosystem services, traditional medicine,

and livelihoods, but faces serious pressures due to habitat loss, deforestation, and climate change.[71] As of 2023, 5,213 species occurring in Nigeria have been evaluated on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, of which 503 (about 10%) are classified as threatened.[72]

Land rights

Land governance in Nigeria is shaped by a dual system combining statutory and customary laws, a legacy of the colonial era. The Land Use Act of 1978 vested ownership of all land in state governors, who allocate rights of occupancy under a leasehold system. In practice, however, customary land tenure continues to dominate in rural areas, where land is often managed through community and family-based arrangements.[73] Gender disparities remain stark: only 8.2% of women have sole ownership of land compared to 34.2% of men, reflecting both the limitations of statutory reforms and the persistence of discriminatory customary norms.[74]

Indicators: water resources

Water availability and use

Nigeria has an estimated 286 billion cubic metres of renewable water resources per year available, of which only about 12.5 billion m^3 (less than 5%) are withdrawn annually. Per capita renewable resources stand at around 1,280 m^3/year, placing the country in the "water stress" category according to international thresholds. The agricultural sector consumes about 44% of the water.[75]

About 82% of households have access to at least basic drinking water services, and 48% to at least basic sanitation services, with significant disparities between urban and rural areas.[76] Despite relatively abundant resources at the national level, Nigeria faces challenges in water management and distribution.

Water scarcity

Nigeria's water stress stems less from absolute scarcity than from poor management, growing population demands, and climate change. The northern regions experience more severe water scarcity than the south, with annual rainfall ranging from less than 600 mm in the northern Sahel region to over 3,500 mm in the coastal south.[77]

Climate change is amplifying extremes, with increased frequency of floods in the south and drought in the north. The Lake Chad basin has shrunk dramatically over recent decades, leaving millions of farmers, herders, and fishermen in northern Nigeria without reliable access to water.[78] Without improved water management practices, Nigeria is projected to face increasing water stress over the next 20 years. This is also shown via the Falkenmark Water Stress Index for Nigeria, which classifies it in the "water scarcity" range. Nigeria's renewable water availability per capita per year is 1,011 (m^3/capita/year), a number that has decreased over the years.[79]

Water management

Water management in Nigeria falls primarily under the Federal Ministry of Water Resources, with responsibilities shared among federal, state, and local governments. The National Water Resources Act provides the legal framework for water management. River Basin Development Authorities manage water resources at the catchment level. Despite these structures, Nigeria faces significant challenges in ensuring sustainable water management, including inadequate infrastructure, funding constraints, and institutional weaknesses.[80]

Water privatization

Since the early 2000s, Nigeria has experimented with public-private partnerships (PPPs) in water service delivery. Several state water agencies piloted PPP reforms, primarily through service contracts.[81] Under the World Bank's National Water Sector Reform Project, only two of five planned PPPs were implemented, with little private investment or risk transfer, and they "did not yield significant results."[82] Plans for large-scale privatization in Lagos around 2015 collapsed amid disputes over financing, profit expectations, and public acceptance.[83] Civil society groups such as the Ecumenical Water Network Africa and Corporate Accountability and Public Participation Africa continue to resist privatization, warning it would drive up tariffs and deepen inequities.[84]

Indicators: food security and agriculture

Food security and nutrition status

Despite Nigeria's agricultural potential, food insecurity remains acute. In mid-2025, UN agencies warned that nearly 31 million people—about 14% of the population—were facing acute hunger, the highest figure ever recorded in the country, with funding shortages forcing the World Food Programme to suspend food and nutrition assistance for 1.3 million

people in the northeast.[85]

Children are among the most affected: about 32% of children under five are stunted, reflecting long-term nutritional deficiencies.[86] Acute malnutrition affects over 5 million children, including 1.7 million with severe acute malnutrition. The affordability of diets is also deteriorating: the cost of a healthy diet nearly doubled in 2024, leaving large shares of the population unable to meet minimum dietary requirements.[87]

Type of agriculture and major crops

Agriculture remains the main livelihood for most Nigerians, with over 70% of the population engaged in the sector, predominantly at the subsistence level. Smallholder farmers dominate production, typically cultivating plots of less than 2 hectares. Nigeria's diverse agro-ecological zones support a wide range of crops: major food crops include maize, cassava, sorghum, yams, beans, millet, and rice, while cash crops such as cocoa, palm oil, rubber, and cotton are significant contributors to agricultural exports. Livestock production, particularly cattle, goats, sheep, and poultry, is concentrated in the northern regions. However, the sector faces increasing risks from climate change, land degradation, and extreme weather events, which threaten yields and food security.[88]

Subsidies for the agricultural sector

Nigeria has implemented a range of agricultural support schemes over the past two decades. The Growth Enhancement Support Scheme, launched in 2011, introduced an e-voucher system through which farmers could obtain subsidized fertilizer and improved seeds from private suppliers. Between 12 and 14 million farmers benefited before the programme was suspended in 2015 due to fiscal pressures. Studies suggest it significantly boosted yields and welfare, with participating farmers increasing maize yields by more than 25% and per-capita consumption by around 30%. Subsidies are now being gradually reintroduced as part of special agro-industrial processing zones supported by the African Development Bank and the International Fund for Agricultural Development. In parallel, the Anchor Borrowers' Programme (since 2016) has channelled more than 1 trillion Nigerian naira in loans and inputs to smallholder farmers through anchor firms, though repayment rates have been low, raising concerns about sustainability.[89]

3.2. Mali

Located in West Africa, Mali is a vast landlocked country with diverse landscapes ranging from the Sahara Desert in the north to savanna and tropical regions in the south. Mali is one of the largest countries in Africa and has a population of about 20 million people.[90] Economically, Mali has a predominantly agricultural economy, with other important sectors including mining (particularly gold) and services.[91] However, persistent challenges such as poverty, political instability, and security issues require ongoing efforts to ensure inclusive growth and development. The country continues to grapple with the legacies of colonial rule and recent political turmoil, including social and economic disparities.[92] The impacts of climate change are increasingly felt across Mali, with rising temperatures, droughts, and desertification posing significant challenges to agriculture, water resources, and biodiversity.[93]

Indicators: land and biodiversity

Land cover and use

Mali covers approximately 124 million hectares, making it the eighth-largest country in Africa.[94] Its topography varies dramatically, from arid desert in the north to semi-arid savanna and tropical regions in the south, with about 30% of the country classified as desert.[95] According to the FAO, agriculture uses about 35% of the land area, with only 7% being used as cropland. About 28% of the land is used for grazing, supporting the country's substantial pastoral livestock sector.[96] Available arable land suffers from productivity losses due to erosion, desertification, and soil degradation.[97] Forest cover accounts for about 11% of land and is declining due to deforestation for fuel wood and agricultural expansion.[98] Around 9% of land is estimated to be degraded.[99] The Ministry of Environment aims to combat desertification and increase vegetation cover through various initiatives, including the Great Green Wall project.[100]

Biodiversity

Despite challenging environmental conditions, Mali hosts significant biodiversity, particularly in the Niger River Delta and southern regions, with notable populations of birds, fish, and mammals adapted to semi-arid conditions.[101] The Inner Niger Delta is one of Africa's largest wetlands and a crucial habitat for migratory birds. However, Malian biodiversity faces serious threats from habitat loss, desertification, and

climate change: the IUCN lists approximately nine animal species and five local plant species as critically endangered or vulnerable. Notably, iconic species such as desert elephants and the Dama gazelle are particularly vulnerable.[102]

Land rights

Land governance in Mali operates under a pluralistic system that combines statutory and customary institutions. While national legislation provides the formal framework for land administration, customary authorities continue to play a dominant role in regulating access and resolving disputes at the local level. The 2017 Agricultural Land Law (*Loi sur le Foncier Agricole*) formally recognizes customary land rights and allows individuals and communities to obtain certificates confirming customary ownership. Land is often managed collectively within families or villages, with allocation traditionally based on lineage and social hierarchy.[103]

Gender disparity in land ownership is significant: only 8% of women own at least one parcel of land (compared to 39% for men), despite producing over 50% of food crops.[104] Large-scale land acquisitions by foreign investors have increased in recent decades, particularly in the Office du Niger irrigation zone, raising concerns about the displacement of smallholder farmers.[105] A large proportion of rural land conflicts, particularly in the Central Sahel region of Mali, are driven by competing claims over resources between pastoralists and farmers.[106]

Indicators: water resources

Water availability and use

Mali has approximately 120 billion cubic metres of renewable water resources annually, of which almost half stem from the Niger and Senegal rivers. The agricultural sector uses only 4.23% of renewable water resources, mostly for irrigation in schemes such as the Office du Niger.[107] About 86.4% of the population has access to at least basic water sources and only 47.7% to adequate sanitation services, with significant disparities between urban and rural areas.[108] Water resource distribution is highly uneven, with the southern regions receiving substantially more rainfall than the arid north. The Niger River system is vital for the country's water security, with the Inner Niger Delta providing crucial ecosystem services.

Water scarcity

The Falkenmark Water Stress Index for Mali is classified as "no stress." Mali's renewable water availability per capita per year is a remarkable 5,200 (m^3/capita/year).[109] Mali experiences significant water challenges despite

the presence of major rivers. The country's average annual rainfall varies dramatically from less than 400 mm in the northern desert regions to over 800 mm in the southern tropical areas.[110]

Water management

Water management in Mali falls primarily under the National Directorate of Hydraulics, with responsibilities shared between national and regional authorities. The 2002 Water Code provides the legal framework for water governance.[111] Management approaches aim to balance traditional systems with modern governance structures, including participatory irrigation management in major schemes. Despite policy frameworks, Mali faces significant challenges in water management, including inadequate infrastructure, limited technical capacity, and funding constraints.[112] Traditional water management systems remain important, particularly in rural areas.

Water privatization

Mali has experimented with various forms of public-private partnerships in urban water supply since the late 1990s. The national water utility, SOMAGEP, operates under a performance contract with the government.[113] While privatization has improved service delivery in some urban areas, rural water supply remains largely community-managed or dependent on NGO interventions. Water tariffs have increased in urban areas, though with social pricing mechanisms intended to protect low-income households.[114] Access inequalities persist between wealthy and poor neighbourhoods, with informal settlements often lacking formal water services.

Indicators: food security and agriculture

Food security and nutrition status

Food insecurity is a persistent challenge in Mali, with about 6% (1.5 million) of the population experiencing chronic food insecurity.[115] According to the FAO, this crisis stems from a combination of armed conflict, intercommunal violence, disrupted socio-economic activities, and insufficient rainfall, which have severely affected livelihoods. The ten-year conflict has displaced over 400,000 people, many of whom have lost access to farmland and livestock. Climate-related disasters, including recurrent droughts that have destroyed over 225,000 hectares of cropland, further undermine food production, while rising food prices continue to limit access to basic staples.[116] Stunting affects approximately 26% of children under five years old.[117]

Type of agriculture and major crops

Mali's agricultural sector comprises two distinct systems: subsistence farming dominated by smallholders, and commercial farming concentrated in irrigated areas. Rain-fed agriculture predominates as the region has abundant water resources, with irrigated agriculture mainly in the Office du Niger zone, promoted to boost agricultural productivity.[118] Major crops include millet, sorghum, and rice as staple foods, with cotton as the principal cash crop.[119] Livestock production is significant, particularly cattle, sheep, and goats, with pastoralism dominant in the northern regions. Traditional farming systems often integrate crops, trees, and livestock. Climate change poses substantial risks to agricultural production, with increased rainfall variability affecting planting times and crop yields.[120]

Subsidies for the agricultural sector

Mali has implemented various agricultural subsidy programmes, particularly for fertilizer, seeds, and equipment. The government allocates about 13.5% of its national budget to agriculture, making it one of the countries with the highest share of agriculture in government expenditure worldwide.[121] In 2018, subsidies totalling 80 million US dollars were primarily directed toward fertilizer, seeds, and credit, especially in rice production.[122]

3.3. Liberia

Liberia, a coastal West African country covering 111,369 square kilometres along the Atlantic Ocean, had a population of 5,418,377 in 2023, making it the 12th most populous country in West Africa.[123] It is home to six major rivers and two major lakes, key sources of livelihood for Liberian citizens.[124] Economically, agriculture and fisheries are the predominant activities, accounting for 29.7% of the country's gross domestic product (GDP) through subsistence and small-scale farming and the growing of staple foods like cassava and export crops like cocoa and palm oil, among others.[125] Also, the mining sector is a prominent source of economic growth for Liberia, particularly through the export of gold and iron ore.[126]

Liberia's history stands out among other West African countries, as it is one of the only countries that was not colonized by a European country between the 19th and 20th centuries. It was first established as part of a resettlement plan by the American Colonization Society for freed slaves. Civil wars from the 1990s until 2003 and the 2014–2015 Ebola outbreak severely impacted its resources and development. Despite these challenges, Liberia has made great strides in poverty reduction as well as transitioning from one democratically elected government to another. Notably, the country achieved a milestone in 2005 by electing Africa's first female president through democratic elections.[127]

Several factors—such as rapid urbanization, high unemployment, and climate change—further threaten Liberia's land, water, and food security. Rising sea levels, unpredictable rainfall, and intensified storms disrupt agriculture and livelihoods, emphasizing the urgency of climate adaptation and mitigation strategies to safeguard the country's natural resources and the well-being of its citizens.[128] Most recently, Liberia suffered flash floods in June 2024, leaving approximately 51,000 vulnerable people in dire need of emergency assistance.[129]

Indicators: land and biodiversity

Land cover and use

Liberia is characterized by diverse ecosystems, including coastal plains, mangrove marshlands, lush rainforests, and lagoons. Forests cover two-thirds of Liberia's land surface, followed by agriculture (13% of land surface) and savanna (11%).[130] The country has 4 million hectares of arable land, which is crucial

in building the agricultural economy through food production and livestock farming.[131] In Liberia, 853,700 hectares of land are degraded, accounting for 8.94% of the total land area. Liberia's National Report on the Land Degradation Neutrality Target Setting Program highlighted that between 2001 and 2015, the total forest area decreased by 5.25%, while agricultural land increased by 4.9% of the total land area. The primary drivers of degradation are deforestation, rapid urbanization, and unsustainable agricultural practices.[132]

Biodiversity

Liberia is the most forested country in West Africa, with over two-thirds of the country covered by forests, including a large portion of the Upper Guinean Forest, a biodiversity hotspot in the region. The country is home to 25% of Africa's mammals and is regarded as one of the 14 centres of plant endemism worldwide.[133] Also, Liberia has six mangrove species, 2,000 plant species, 600 bird species, 150 mammal species, and 75 reptile species.[134] The country's protected areas, including Sapo National Park and Gola Forest National Park, play a vital role in preserving these invaluable ecosystems and cover about 10.5% of the country's total forested area.[135] Biodiversity in Liberia is under threat from several factors, including illegal hunting for bushmeat, limited knowledge of protected areas, and unregulated deforestation.[136] Climate change poses risks, including rising temperatures, unpredictable rainfall patterns, and extreme weather events, that threaten the country's diverse ecosystems.

Land rights

Land ownership in Liberia falls into four categories: public, government, privately owned, and customary. Historically, land in Liberia was mainly under customary ownership by Indigenous communities. Most of this land along the coast was acquired by the American Colonization Society during the early 19th century to settle freed African Americans, establishing statutory land tenure and converting much of it into public land. This process effectively marginalized the customary landholding practices of local communities.[137]

However, the Land Rights Act of 2018 formally recognized customary land rights and aimed to strengthen community ownership within Liberia's legal framework. Land ownership remains a major source of conflict, and despite the law's provisions for gender equality, women—particularly in rural areas—continue to face barriers to owning or inheriting land due to entrenched customary practices and limited awareness of their rights.[138, 139] As of 2020, only 4.2% of land was owned by women, highlighting the challenges women face in securing land tenure, especially in rural and customary land systems.[140]

Indicators: water resources

Water availability and use

With abundant water resources, Liberia is considered one of the wettest countries in Sub-Saharan Africa. Its water bodies and high precipitation levels

ensure renewable water availability of 43,176.49 m^3 per capita. There is no stress on freshwater resources in Liberia, as withdrawals from renewable water sources are less than 1%. Municipal use accounted for the largest proportion of water withdrawals in 2022, at 0.15%, followed by industry (0.10%) and agriculture (0.02%).[141] Liberia has a total of 232 billion m^3 of renewable water resources.[142] However, water quality is poor in certain areas due to contamination from mining, agricultural runoff, and industrial discharges. Approximately 90% of the population does not have access to clean drinking water services, and only 4% have access to piped water.[143] A large proportion of water is obtained from hand-dug shallow wells that are contaminated by faecal matter due to limited access to improved WASH facilities.[144]

Water scarcity

Water availability (49,028 m^3/capita/year) in Liberia is significantly higher than the Falkenmark Water Stress Index threshold, and thus the country is classified as "no stress." Despite abundant water resources in Liberia, the limited infrastructure to deliver this water to the population results in limited availability and access for certain communities. Scarcity, albeit at a low rate, is exacerbated by low flows during the dry season.[145] Climate change–driven effects, such as drought, are anticipated to be low in Liberia; however, the possibility of flooding due to increased rainfall and sea-level rise is very high, posing a risk to livelihoods and infrastructure.[146]

Water management

The Liberia Water and Sewer Corporation was established in 1973 to manage and maintain water and sewerage facilities nationwide.[147] It builds and maintains facilities, sets service prices, manages finances, and conducts studies to improve the system. On the policy and regulatory side, the Liberia Water, Sanitation, and Hygiene Commission

was established under the National Water, Sanitation & Hygiene Commission Act of 2012, which mandates that the commission regulate water and sanitation services in Liberia.[148]

Indicators: food security and agriculture

Food security and nutrition status

Liberia ranked 110 out of 116 countries surveyed in the 2021 Global Hunger Index, due to high poverty rates, prolonged civil wars, and deficiencies in its agricultural systems.[149] The Ukraine-Russia crisis is cited as one of the causes of food shortages and price fluctuations, as Liberia relies heavily on rice imports, exacerbating food insecurity. According to the UN World Food Programme, this resulted in a 28% price increase, a burden for 60% of households that spend about two-thirds of their income on food.[150] The World Food Programme estimates that about 30% of children under the age of five are stunted, and 43% of women of reproductive age are anaemic.[151]

Type of agriculture and major crops

Agriculture, including forestry and fisheries, is the main economic activity in Liberia, accounting for approximately 36% of the country's GDP.[152] The most cultivated crop is rice, grown by 56% of households, followed by cassava and commercial tree crops such as cocoa and oil palm.[153] Small-scale farmers dominate Liberia; however, low productivity has led to a high dependence (50-60%) on food imports to fill the supply gap.[154]

Subsidies for the agricultural sector

Under the Ministry of Agriculture, subsidies are offered to smallholder farmers through the Liberia Agriculture Commercialization Fund, which targets 38,000 farmers mainly growing rice and oil palm and practising horticulture. The grant, funded by the World Bank and the International Fund for Agricultural Development and amounting to around 22.38 million US dollars, is intended to improve the productivity of local farmers and provide opportunities to develop agribusinesses.[155]

3.4. Sierra Leone

Sierra Leone is located on the southwest coast of West Africa, covering 71,740 square kilometres (of which land area covers 71,620 km^2 and water 120 km^2). It is bordered by Guinea in the north and east, Liberia in the south, and the Atlantic Ocean in the west and had an estimated population of 9,121,049 as of 2024.[156] Sierra Leone experiences average temperatures of 26°C and has two seasons, a rainy and a dry one, that govern agricultural activities.[157] Due to its close proximity to the Atlantic Ocean and its reliance on climate for agricultural productivity, Sierra Leone is prone to climate-related natural disasters and ranked 175 out of 187 countries and territories in terms of vulnerability to climate change and other global challenges.[158]

Indicators: land and biodiversity

Land cover and use

Sierra Leone covers an area of about 72,000 square kilometres, with diverse land cover types ranging from tropical and mangrove forests to savanna and wetlands. The country comprises four main relief regions: the coastline, the interior lowland plains, the interior plateau, and the mountains. Dense tropical rainforests cover much of Sierra Leone's wetter eastern and southern regions, while the drier northern areas are characterized by mixed forests where some trees shed their leaves during the dry season.[159] There are 5.4 million hectares of agricultural land, of which only 10% is under cultivation.[160] The land is used for growing food crops and is also suitable for raising livestock. According to the UN Convention to Combat Desertification, 20.75% of Sierra Leone's total land area—about 1.48 million hectares—is degraded.[161]

Biodiversity

According to the Secretariat of the Convention on Biological Diversity, Sierra Leone is home to around 15,000 plant species and has the most diverse fish species along the West African Coast, with 213 species. Aside from fish, the country is also home to a diverse 761 species of mammals and birds, which includes primate species that are vulnerable to extinction due to poaching, destruction of habitats, and climate change. Approximately 14 bird species are considered a "global conservation concern."[162]

Tropical forests occupy 34.3% of the total land area,[163] of which protected reserves (4.1% of total land area), such as Gola Rainforest National Park, are maintained to preserve biodiversity.[164] Sierra Leone has suffered the destruction of forested areas over the course of the ten-year civil war. This drove the country to implement forestry inventories and reforestation programmes, resulting in the restoration of 302 hectares and 3 million trees.[165]

Land rights

Land ownership systems in Sierra Leone have their origins in colonial periods, and as such, there are two main tenure systems: statutory and customary.[166] The land under statutory ownership is mainly located in the western regions of the country, while customary ownership is more common in the other regions. Agriculture is the most predominant activity and women, who represent about 70% of the agricultural workforce, face adversity in land ownership and access

to land resources, as customary systems favour male ownership.[167] The country has seen the development of land policies, such as the 2023 Gender Equality and Women's Empowerment Act, intended to establish and improve security and access to land resources for all.[168]

Indicators: water resources

Water availability and use

Sierra Leone has abundant renewable resources of 160 billion cubic metres per year, translating into 19,331.13 cubic metres per capita per annum.[169] These resources are six times more than the average for Africa. The country is considered the least water-stressed in the region, with a withdrawal rate of 0.1%, reflecting both the abundance of water resources and underutilization due to infrastructure development gaps.[170]

Water scarcity

Sierra Leone's renewable water availability per capita per year is 19,000.93 (m^3/capita/year), and the country experiences the least water stress in West Africa.[171] Despite abundant water resources, Sierra Leone faces challenges providing safe water for domestic use.[172] Approximately 68% and 25% of the country have access to at least basic drinking water and sanitation services, respectively.[173] However, water contamination further contributes to scarcity, as a household survey in the country estimates that 95% of improved water sources are contaminated.[174]

Water management

Water resources are protected and regulated by the National Water Resources Management Agency, which oversees the two water utility companies operating in Sierra Leone.[175] Supply of potable water is handled by companies such as the Guma Valley Water Company and the Sierra Leone Water Company.

Indicators: food security and agriculture

Food security and nutrition status

The 2024 World Food Programme (WFP) country brief reported that a large proportion of the population (77%) was food insecure, which was an improvement from the 2023 report, which indicated 80% were food insecure.[176] The country grapples with malnutrition and stunting in children under five years; however, there has been slight progress noted as the figure changed from 36% in 2008 to 30% in 2019 and 26.2% reported by the WFP in 2023.[177, 178] Food insecurity is exacerbated by an increase in prices of staple foods like rice, making it increasingly difficult for households to afford and maintain a nutritious diet. The prices of local and imported rice increased by 31% and 38%, respectively, between January 2023 and January 2024.[179]

Type of agriculture and major crops

Agriculture employs more than 60% of the population, mainly women, making it the biggest economic activity in Sierra Leone.[180] Rice, a staple in almost all households, is the most cultivated crop, with an estimated production of 1.4 billion kg in 2023, followed by sweet potatoes at 266.6 million kg.[181] Because small-scale farming cannot meet the domestic rice demand, the country relies largely on rice imports, spending approximately 200 million US dollars on them annually.[182] Other major crops grown include cassava, sweet potatoes, yams, and bananas. Fisheries comprise a large part of the agricultural sector, contributing 10% to the country's GDP and providing about 80% of animal protein consumed by the population.[183] To increase agricultural productivity and reduce dependence on imports, the government implemented the National Agricultural Transformation Program in 2023.[184]

3.5. Democratic Republic of the Congo

Located in Central Africa, the Democratic Republic of the Congo (DRC) boasts vast and diverse landscapes ranging from tropical rainforests to savannas, mountains, and lakes. With a population of about 109 million, it is Africa's fourth most populous nation.[185] Economically, DRC possesses enormous natural resource wealth, particularly in mining, forestry, and agriculture. However, persistent challenges like extreme poverty, political instability, and prolonged armed conflicts require ongoing efforts to ensure inclusive growth and development.[186]

The country continues to grapple with the legacies of colonial exploitation and decades of conflict, including severe social and economic disparities. The impacts of climate change are increasingly felt across DRC, with changing rainfall patterns, floods, and droughts posing significant challenges to agriculture, water resources, and biodiversity, further complicating recovery from ongoing humanitarian crises.

Indicators: land and biodiversity

Land cover and use

The Democratic Republic of the Congo covers around 234 million hectares, making it the second-largest country in Africa.[187] Its topography is dominated by the Congo Basin, home to the world's second-largest rainforest.[188] According to the World Bank, about 15.5% of the country's land area is used for agriculture.[189] Forest cover accounts for about 60% of land, representing about half of Africa's rainforests, yet deforestation is proceeding at an alarming rate, with an estimated 1 million hectares lost in 2023 —about 0.6% of total forest cover.[190]

The DRC relies heavily on its extractive industries, which contributed 46% of government revenue and nearly 99% of export earnings in 2021.[191] Mining in the DRC has far-reaching environmental impacts, including deforestation, soil degradation, and contamination of rivers with heavy metals and processing chemicals.[192] Artisanal mining attracts communities, leading to settlement and the expansion of farmland, further accelerating forest loss.[193] A recent study shows that deforestation around mining sites averages 28 times the size of the mines themselves.[194] The government also grants mining concessions to foreign-owned companies in and near protected areas. The growing concentration of such concessions near reserves such as the Okapi Wildlife Reserve and Garamba National Park raises serious concerns about biodiversity and community stability.[195]

Biodiversity

The DRC is among the world's most biologically diverse countries: it is home to over 10,000 plant species, 1,000 bird species, and iconic endangered species including mountain gorillas, bonobos, and okapis.[196] The Congo Basin forest ecosystem provides critical global environmental services, including carbon sequestration and climate regulation.[197] However, DRC's biodiversity faces severe threats due to deforestation, poaching, mining, and armed conflict, with around 190 species on the IUCN Red List of Threatened Species.[198] Protected areas cover about 8% of the national territory, but many lack effective management due to resource constraints and insecurity.[199]

Land rights

Land governance in the DRC operates under a dual system where statutory law coexists with customary practices. The 1973 Land Law technically vests all land in the state, with individuals and entities holding concessions rather than owning land in absolute terms.[200] In practice, most rural land remains under customary authority, with chiefs allocating usage rights. Land conflicts are widespread, exacerbated by

population growth, displacement, and competition between extractive industries and local communities. Armed groups control significant territories, particularly in eastern provinces, using land and resource exploitation to finance operations.[201] Gender disparity in land ownership is extreme: women own 7.6% of land ("independently"), despite their 53% participation in the agricultural sector.[202] Sexual violence against women is systematically used as a weapon of war in conflict zones, further undermining women's access to land and livelihood security.[203]

In July 2025, the Democratic Republic of the Congo adopted its first comprehensive land-use planning law (Law No. 25/045), aimed at addressing overlapping land uses and unrecognized customary tenure. The law formally recognizes customary land rights, requires community participation and free, prior and informed consent, and mandates environmental and social safeguards, including protection for wetlands and peatlands. It establishes multi-level land-use planning councils to coordinate decisions and resolve disputes, marking a significant step toward more inclusive and sustainable land governance. However, effective implementation will be challenging, requiring strong institutional coordination, adequate resources, and meaningful participation by local and Indigenous communities.[204]

Indicators: water resources

Water availability and use

The DRC has about 12 billion cubic metres of renewable water resources annually, representing about 23% of Africa's freshwater resources. Despite this abundance, only about 0.68 billion cubic metres of water resources are withdrawn for human use. The agricultural sector consumes approximately 10.5% of water withdrawals, with municipal use accounting for 68% and industry for 21.5%.[205] The Congo is Africa's second-longest river and the world's deepest, with the highest discharge of any river after the Amazon.[206] Only about 35.7% of the population has access to basic water services, and 16.3% to at least basic sanitation services, with stark urban-rural disparities.[207] Waterborne diseases remain a leading cause of mortality, particularly among children.

Water scarcity

According to the Falkenmark Water Stress Index, the Democratic Republic of the Congo is classified as experiencing "no stress," with renewable water resources exceeding 12,000 m^3 per person per year.[208] Despite abundant water resources, the DRC faces what experts term "economic water scarcity"—a situation in which water is physically available but inaccessible due to limited infrastructure and weak governance. Conflict has damaged water systems across many regions, forcing millions of displaced people to rely on unprotected sources for drinking water.[209, 210]

Rainfall patterns in the DRC have remained relatively stable since 1960, averaging about 1,070 mm per year and reaching nearly 1,570 mm in the eastern highlands.[211,212] However, climate change is contributing to growing rainfall variability and more frequent extreme weather events, including floods and prolonged dry spells. Recent observations illustrate this trend: northern regions recorded below-average rainfall in mid-2025, while central provinces experienced above-average precipitation, and southern areas remained near the long-term average.[213]

Water management

Water management in the Democratic Republic of the Congo falls primarily under the Ministry of Energy and Water Resources. The 2015 Water Law provides the overarching framework for water governance, promoting decentralization, liberalization, and inclusion in the sector. However, its implementation remains incomplete, and regulatory functions remain fragmented across multiple ministries and levels of government. The legal and institutional framework has yet to be fully harmonized or embedded among public, private, and civil society actors, and the newly established regulatory authority is not yet fully

operational. Limited technical capacity and financial constraints further hinder effective coordination and delivery of water services, prompting ongoing efforts by national and international partners to strengthen institutional performance and build sector-wide expertise.[214,215]

Water privatization

The DRC has experimented with various forms of privatization in the water sector, particularly in urban areas. The national water utility, REGIDESO, operates with significant private sector involvement. Privatization efforts have so far yielded limited improvements in service delivery, with coverage remaining low and service quality poor in most areas. Broader institutional weaknesses—including sector inefficiencies, regulatory delays, and governance challenges—continue to constrain progress. Conflict and instability have further deterred large-scale private investment in water infrastructure outside major cities.[216, 217]

Indicators: food security and agriculture

Food security and nutrition status

Food insecurity in the DRC is at record levels, with around 27 million people—nearly a quarter of the population—facing acute or emergency hunger. The situation is particularly severe in the conflict-affected eastern provinces, where violence and displacement continue to disrupt livelihoods and access to food. According to UNICEF, 42% of children under five suffer from stunting and 6% from wasting, reflecting persistently high levels of chronic and acute malnutrition.[218]

Conflict-induced displacement has severely disrupted agricultural production and market systems, as communities are forced to abandon their land and lose access to markets in conflict-affected provinces.[219] Many women and girls who have lost access to livelihoods and essential resources resort to negative coping mechanisms such as early marriage or sexual exploitation in brothels, effectively turning to "survival sex" to meet their own and their families' basic needs.[220]

Type of agriculture and major crops

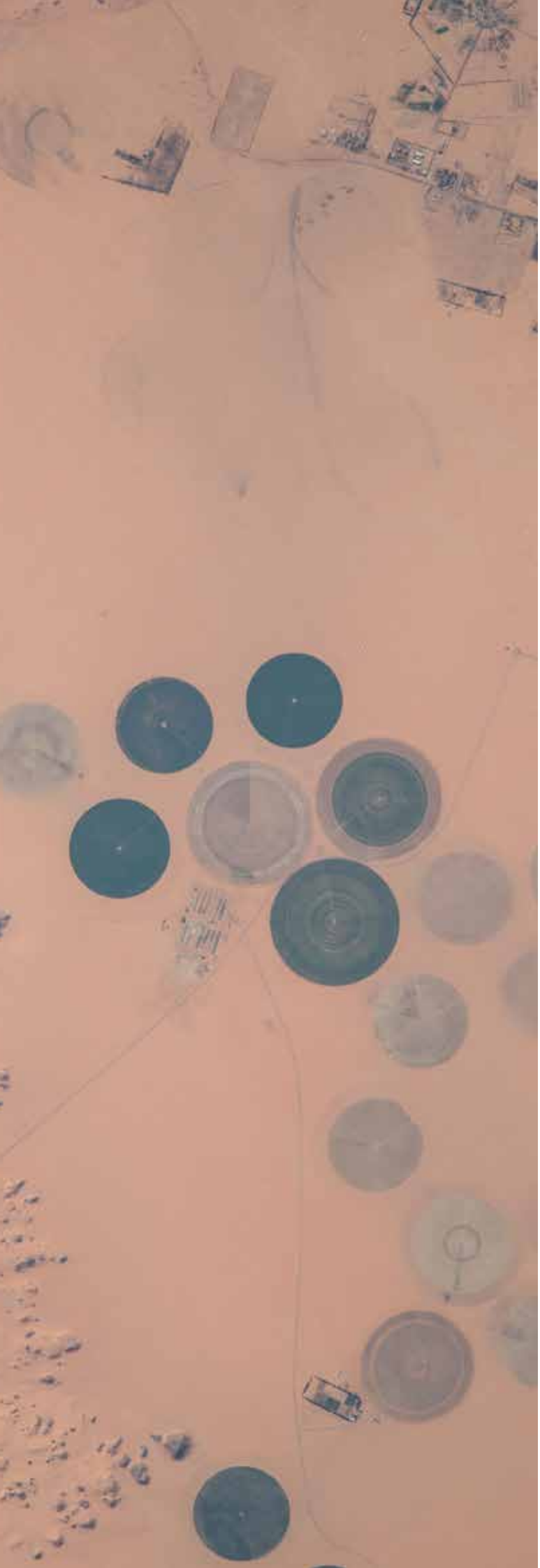
The country is home to approximately 13 million farming households cultivating an average of 0.54 hectares of land.[221] Despite the country's agricultural potential, productivity remains extremely low due to limited use of inputs, outdated farming practices, and disruptions caused by conflict. Major food crops include maize, yams, plantains, and rice. Meanwhile, commercial cultivation of cash crops like coffee, palm oil, rubber, and sugar is carried out on a relatively limited scale. Slash-and-burn agriculture predominates in forested regions, contributing to deforestation. Livestock production is limited by tsetse fly infestation in much of the country. In conflict regions, farmers often abandon more productive lands for safer areas with poorer soils, and agricultural production cycles are frequently disrupted by violence. Women farmers face additional security risks, including sexual violence while working in fields, further undermining agricultural productivity.[222,223]

Subsidies for the agricultural sector

Government support to the agricultural sector in the Democratic Republic of the Congo is strong, with 10% of the national budget allocated to agriculture, according to the 2021 CAADP Biennial Review Report. The DRC was one of only four countries (along with Burundi, Ethiopia, and Mali) among the 51 member States that reported on this indicator in the 3rd Biennial Review cycle.[224] However, public investment in the sector continues to focus largely on larger commercial operations, while smallholder farmers, who produce most of the country's food, receive little direct support. Agricultural research and extension services remain underfunded, and access to agricultural credit is still extremely limited, particularly for women. Gender-based barriers, including lack of collateral, documentation, and secure land tenure, further restrict women's ability to invest in farming or expand production. In areas recovering from conflict, agricultural support programmes often struggle to resolve the land disputes that arise when displaced populations return, leaving many smallholders—especially women—without secure access to land and resources.[225]

3.6. Libya

Located in North Africa, Libya presents a predominantly desert landscape with a narrow Mediterranean coastline in the north. With a population of about 7 million, it is one of the least densely populated countries in Africa.[226] Economically, Libya is a highly oil-dependent economy, with petroleum exports accounting for most government revenue and a large share of GDP.[227] However, persistent challenges like political fragmentation, armed conflict, and economic instability require ongoing efforts to ensure recovery



and development. The country continues to grapple with the legacies of Muammar Gaddafi's 42-year rule and the post-2011 conflict, including disrupted institutions and economic disparities. The impacts of climate change are increasingly felt across Libya, with rising temperatures, desertification, and water scarcity posing significant challenges to agriculture, water resources, and the limited biodiversity.[228]

Indicators: land and biodiversity

Land cover and use

Libya covers approximately 176 million hectares, making it the fourth-largest country in Africa.[229] Its topography is dominated by the Sahara Desert, which covers about 95% of the land area, with narrow coastal plains along the Mediterranean. According to the FAO, agriculture uses only about 1% of the land area, with less than 0.2% being naturally arable, primarily in coastal regions and scattered oases.[230] Rangelands suitable for seasonal grazing cover about 4% of the land area, supporting traditional pastoral activities. Cultivated land is limited by extreme water scarcity but has been expanded through irrigation projects utilizing fossil groundwater. Forest cover is negligible at less than 0.1% of the land area.[231]

Biodiversity

Despite harsh desert conditions, Libya hosts significant biodiversity adapted to arid environments, particularly in coastal areas and in isolated mountain ranges such as Jebel Akhdar. The country contains over 1,800 plant species, with about 80 being endemic.[232] Coastal and marine ecosystems support important fisheries and migratory bird populations. However, Libyan biodiversity faces severe threats due to habitat fragmentation, overgrazing, hunting, and climate change: around 78 animal species are considered vulnerable, endangered, or critically endangered.[233] Protected areas cover only about 0.7% of the national territory, and management is severely disrupted by ongoing political instability.[234]

Land rights

Land governance in Libya remains complicated by competing legal frameworks and political fragmentation. The post-Gaddafi era has seen contesting claims based on pre-revolutionary ownership, Gaddafi-era redistributions, and post-2011 seizures. During the Gaddafi regime, major land reforms nationalized property and redistributed land,

disrupting traditional tribal land systems. Law No. 4 of 1978 abolished private ownership of multiple properties, creating enduring disputes.[235] Currently, land administration is fragmented between competing authorities in eastern and western Libya. Gender disparity in land ownership is significant, with fewer women estimated to own land despite legal provisions for inheritance rights. Displacement due to conflict has created complex patterns of abandoned properties and secondary occupation, particularly in urban areas.[236]

Indicators: water resources

Water availability and use

Libya possesses about 0.7 billion cubic metres of renewable water resources annually, one of the lowest per capita water availabilities globally. The agricultural sector consumes approximately 83% of the water withdrawn, with municipal use accounting for 12% and industry for 5%.[237] The country relies on non-renewable fossil aquifers, such as the Nubian Sandstone Aquifer System, shared with Egypt, Sudan, and Chad; the North-Western Sahara Aquifer System; and *the système aquifère de la Djeffara*.[238] About 96.4% of the population has access to basic drinking water sources, though service reliability has deteriorated significantly during the ongoing conflict.[239] The Great Man-Made River project, initiated in the 1980s, remains one of the world's largest water transfer systems, pumping groundwater from southern desert aquifers to coastal population centres in the North.[240]

Water scarcity

Libya is one of the most water-scarce countries globally, with renewable water resources of only about 100 cubic metres per capita annually, far below the 500 cubic metre threshold for absolute scarcity.[241] The country's average annual rainfall ranges from less than 50 mm in desert regions to 250-300 mm in the coastal highlands, which is insufficient to support rain-fed agriculture in most areas. Climate change is projected to further reduce rainfall and increase evapotranspiration rates. Groundwater depletion proceeds at alarming rates, with water tables in coastal aquifers declining by 3,441 cubic metres per year and facing severe seawater intrusion. Political instability and conflict have damaged water infrastructure, with deliberate targeting of water systems reported in some conflict episodes. Water shortages in urban areas frequently lead to public demonstrations and social tensions.[242]

Water management

Water management in Libya falls primarily under the General Water Authority and the Great Man-Made River Authority, though institutional capacities have been severely weakened by conflict. The 1982 Water Law No. 3 provides the legal framework for water governance, but enforcement is limited.[243] Historically, management approaches have emphasized supply expansion rather than demand management, resulting in unsustainable extraction rates. Water pricing remains heavily subsidized, with agricultural water virtually free, providing little incentive for conservation. Technical capacity for water management has eroded due to the exodus of foreign expertise and the limited training opportunities for Libyan professionals during the conflict. Monitoring networks for water quality and quantity have deteriorated, limiting evidence-based decision-making and the progress of sustainable water service projects, such as desalination.[244]

Water privatization

Libya has maintained predominantly state control of water resources and services, with limited privatization. The General Company for Water and Wastewater, which manages 377,500 cubic metres of water in wells and reservoirs, provides urban water services, though its operational capacity varies significantly across regions controlled by different political factions. Private water vendors, operating tanker trucks and small desalination units, have proliferated during the conflict period to fill service gaps, often charging higher prices than public utility rates. Bottled water consumption has increased dramatically, becoming the primary drinking water source for middle- and upper-income households. Several proposals for private-sector participation in desalination projects have been advanced, but implementation remains constrained by political uncertainty and security concerns.[245]

Indicators: food security and agriculture

Food security and nutrition status

Food security in Libya is characterized by high physical availability through imports but increasingly constrained economic access due to inflation and income disruption. Approximately 38% of the population was deemed vulnerable to food insecurity and shocks, with particularly high rates among displaced persons and migrants.[246] Dietary diversity has declined, with consumption shifting toward cheaper, energy-dense foods. Malnutrition presents a complex picture, with the simultaneous presence of undernutrition in vulnerable groups and rising obesity rates in the general population. Before 2011, Libya had achieved relatively good nutrition indicators, but conflict-related disruptions to health systems have limited recent data collection, particularly for child stunting and micronutrient deficiencies. Libya faces food price inflation due to economic strain from conflict, which has severely eroded purchasing power, particularly for households dependent on public-sector salaries that remained largely unchanged.[247]

Type of agriculture and major crops

Libya's agricultural sector is constrained by water scarcity and accounts for about 3% of GDP while employing about 6% of the workforce.[248] Irrigated agriculture predominates, utilizing fossil groundwater for production. Major crops include barley, wheat, dates, olives, and a variety of fruits and vegetables. Livestock production, particularly sheep and goats, is significant in pastoral regions.[249] Before 2011, Libya had invested heavily in large-scale state farms and greenhouse production, though many of these operations have since been abandoned or operate at reduced capacity. The country imports about 80% of its food requirements, leaving it vulnerable to global price fluctuations and supply chain disruptions.[250] Agricultural productivity is constrained by salinization, limited technical expertise, and disrupted input supply chains. Since 2011, conflict-related fuel shortages have frequently affected irrigation pumping, leading to crop failures.

Subsidies for the agricultural sector

Government support to the agricultural sector in Libya historically relied on extensive subsidies and public investment programmes aimed at achieving food self-sufficiency. These included input and price subsidies through the price stabilization fund, interest-free loans via the Agricultural Investment Bank, and large-scale irrigation investments such as the Great Man-Made River project, where water was sold far below production costs. Subsidies covered seeds, fertilizer, pesticides, and agricultural equipment. State-run projects such as grain circles benefited from subsidized irrigation systems.[251]

Since 2011, however, the collapse of central governance and institutional fragmentation have severely disrupted these mechanisms.[252] According to the World Bank, agricultural credit schemes and state-led development programmes have largely ceased functioning amid insecurity and weak institutional capacity, and no agricultural subsidies are currently provided to farmers or other value-chain actors, particularly women.[253,254]

3.7. Egypt

Located in the northeastern corner of Africa, with territory extending into Asia through the Sinai Peninsula, Egypt is predominantly arid desert, with most agriculture and settlement concentrated in the fertile Nile Valley and Delta.[255] With a population of about 116.5 million, it is Africa's third most populous nation.[256] Economically, Egypt ranks among Africa's largest and most diversified economies, with key sectors including services, manufacturing, tourism, agriculture, and energy.[257]

Egypt's per capita GDP is above the African average, placing it among middle-income countries. However, rising poverty, unemployment, and macroeconomic instability highlight that growth has not been inclusive, and substantial internal inequalities remain. These challenges are compounded by the political and social transitions since the 2011 revolution, with persistent disparities between urban and rural populations.[258]

The impacts of climate change are increasingly felt across Egypt, with rising sea levels threatening the Nile Delta, increasing temperatures, and water scarcity posing significant challenges to agriculture, water resources, and urban sustainability. Rising temperatures could reduce food production in Upper Egypt by up to 30% by 2040.[259] Soil degradation and high post-harvest losses—estimated at 50% for vegetables and fruit, 40% for fish, and 30% for milk and wheat—compound the stress on the food system.[260]

Indicators: land and biodiversity

Land cover and use

Egypt covers approximately 100 million hectares, with deserts comprising about 96% of the territory.[261] The topography is dominated by the Nile Valley and Delta, low-lying desert plateaus, and the Sinai Peninsula. According to the FAO, agriculture uses only about 4% (4058 ha) of the land area, out of which 84% (3427 ha) is irrigated and 99% (4014 ha) is equipped for irrigation.[262]

The agricultural sector is a crucial pillar of Egypt's economy. Fertile Old Lands in the Nile Delta have seen a significant decline in recent decades due to urban encroachment, prompting the government to launch large-scale land reclamation initiatives. Since the 1980s, more than 12,000 square kilometres of desert land have been converted into New Lands on the fringes of the Delta and Valley, irrigated through canals and groundwater, and cultivated primarily with orchards, vegetables, and cereals. These policies aim to offset the loss of productive Old Lands and meet the growing food demand of a rapidly expanding population.[263]

Biodiversity

Despite its mainly desert character, Egypt hosts remarkable biodiversity in coastal zones, wetlands, and isolated mountain habitats. The country harbours more than 2,300 flowering plant species, 111 mammal species, 480 bird species, 109 reptile species, 9 amphibian species, over 1,000 fish species, and about 200 coral species. Egypt also serves as a critical corridor for migratory birds moving between Europe, Asia, and Africa, with around 300 species depending on its wetlands and stopover sites.[264]

Egypt's biodiversity faces mounting threats from habitat destruction, pollution, overfishing, unsustainable tourism, and invasive species such as water hyacinth. Marine ecosystems, especially Red Sea coral reefs, are under pressure from both tourism development and climate change, including coral bleaching.[265] The national system of protected areas has expanded to 30 declared sites covering about 15% of Egypt's territory. However, the management effectiveness of these areas varies considerably, as many suffer from underfunding, insufficient staffing, and limited monitoring capacity. Governance remains centralized under the Egyptian Environmental Affairs Agency, but integrating biodiversity concerns into broader land-use and development planning is still limited.[266]

Land rights

Land governance in Egypt has undergone major transformations over the past century. Before 1952, land ownership was highly concentrated in the hands of a small elite. A series of agrarian reforms between the 1950s and late 1960s imposed ceilings on landholdings and redistributed land to smallholders, creating a new rural middle class. These measures, however, only partially addressed inequality, and many landless households remained excluded. Since the 1990s, market liberalization and the passage of Law 96 of 1992—which abolished long-term tenancy protections—have partially reversed these reforms, leading to the displacement of tenant farmers and the renewed concentration of land in larger holdings.[267]

Gender inequality in land ownership remains stark. Women own only about 5.2% of landholdings in Egypt, one of the lowest shares in the Arab region. While women in the Old Lands of the Nile Valley and Delta remain particularly disadvantaged, the Mubarak Resettlement Scheme in the New Lands provided for men, with many women themselves reluctant to pass land on to their daughters.[268,269]

Indicators: water resources

Water availability and use

Egypt's water resources are dominated by the Nile River, which provides approximately 90% of the country's water supply.[270] Total renewable water resources amount to about 60 billion cubic metres annually, of which 55.5 billion cubic metres have been historically guaranteed under the 1959 Nile Waters Agreement with Sudan.[271] According to FAO AQUASTAT, Egypt's water stress level exceeds 140%, reflecting severe overexploitation of its limited renewable resources.[272] The agricultural sector consumes about 85% of water resources, with domestic use accounting for 10% and industry for 5%.[273] Government reports indicate nearly universal access to improved water sources, though service quality and reliability vary significantly between urban and rural areas and across income levels.[274]

Water scarcity

Egypt faces severe water scarcity and is classified among the world's most water-poor countries. Egypt's renewable water availability per capita per year is only slightly above 500 m^3, placing it well below the water scarcity threshold.[275] The country's average annual rainfall ranges from nearly zero in most desert regions to about 200 mm on the Mediterranean coast, which is insufficient to support rain-fed agriculture.[276] Population growth and economic development continue to increase water demands.[277]

Climate change is projected to affect Nile flow patterns, potentially increasing variability and reducing long-term availability.[278] The construction of the Grand Ethiopian Renaissance Dam (GERD) upstream on the Blue Nile has created significant tensions with Ethiopia, as Egypt fears reduced water flow during reservoir filling and potential changes to the historical allocation framework established by colonial-era agreements. Diplomatic negotiations over

GERD operations remain contentious, highlighting the geopolitical dimensions of transboundary water management in the Nile Basin.[279]

Water management

Water management in Egypt falls primarily under the Ministry of Water Resources and Irrigation (MWRI). The management approach emphasizes comprehensive control of the Nile through the High Aswan Dam and an extensive network of barrages, canals, and drainage systems. Water quality faces significant challenges from agricultural runoff, industrial pollution, and domestic wastewater, with approximately 43% of drainage water reused for irrigation. Water pricing remains heavily subsidized across all sectors, with agricultural water provided virtually free of charge, limiting incentives for efficiency improvements.[280]

Irrigation management has undergone partial decentralization through Water User Associations, but strategic control remains centralized with MWRI, especially for allocation decisions and larger-scale infrastructure. The decentralization effort aimed to improve efficiency, reduce water losses, and increase farmers 'ownership of irrigation practices, but institutional and legal frameworks for full empowerment remain weak.[281]

Water privatization

While privatization in Egypt's water sector has historically been limited, the adoption of the Drinking Water and Wastewater Regulatory Law in May 2025 marks a significant shift. The law centralises regulatory authority under the prime minister's office. It opens the sector to more private operators through build-operate-transfer arrangements, while mandating a nationwide rollout of prepaid meters.[282] Observers warn that these changes could raise household costs and restrict access for vulnerable groups.[283]

Indicators: food security and agriculture

Food security and nutrition status

Food security in Egypt is shaped above all by income poverty, which remains the key determinant of household food insecurity. Around 27% of the population experienced moderate or severe food insecurity in 2020, with poverty concentrated in rural upper Egypt (more than 40% of the poor), rural lower Egypt (23%), and, to a lesser extent, in urban areas (14%).[284]

The country faces the double burden of malnutrition: undernutrition persists alongside rising overweight and obesity. According to UNICEF/WHO/World Bank joint estimates, 22% of children under five are stunted, while 15% are overweight, among the highest child overweight rates in Africa.[285] The World Food Programme, citing national survey data, reports lower stunting levels (13% nationally; 16% in Upper Egypt). Poor dietary diversity is a persistent challenge: only 56% of school-aged children meet minimum dietary diversity, and diets are heavily dominated by subsidized staples such as bread, oil, and sugar.[286]

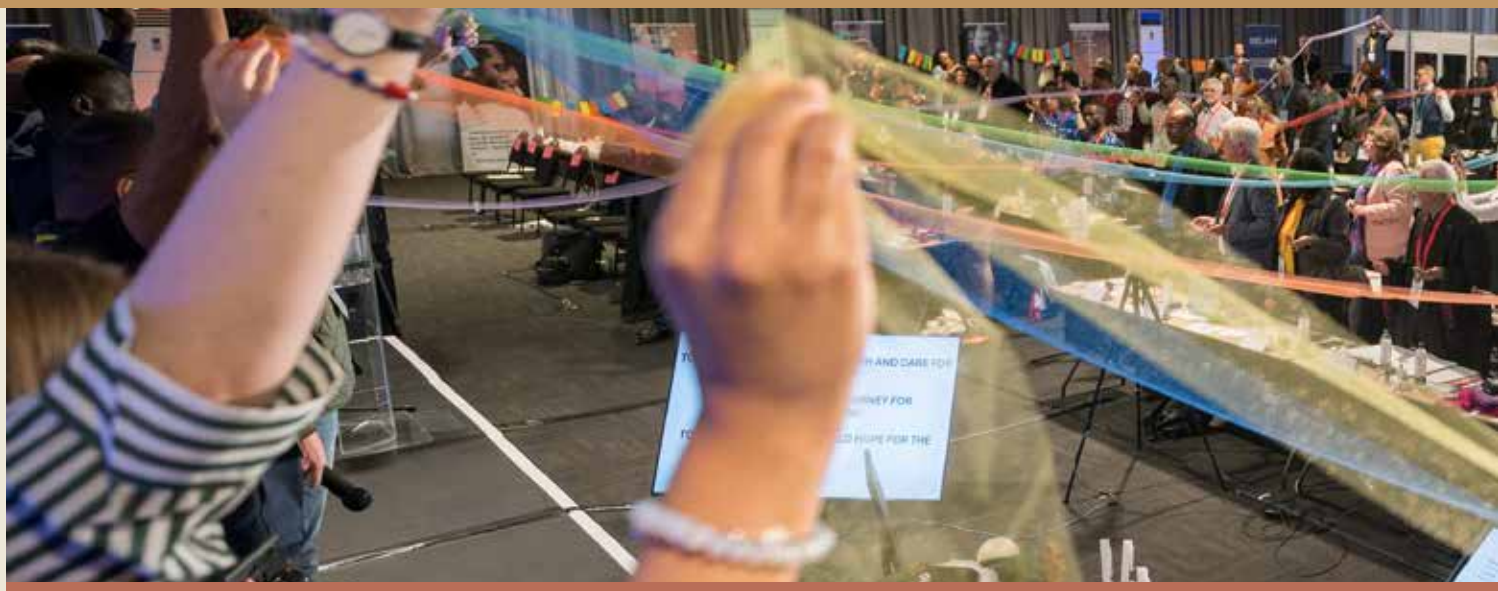
Type of agriculture and major crops

Agriculture remains a crucial sector in Egypt, contributing about 11.3% of GDP. The sector is almost entirely dependent on irrigation from the Nile, which supplies more than 80% of agricultural water use. Major crops include wheat, maize, rice, and sorghum, as well as a variety of horticultural products. Egypt is one of the world's largest wheat importers and remains highly vulnerable to global price shocks, despite government policies aimed at increasing self-sufficiency.[287]

The agricultural structure is highly dualistic. In the Old Lands of the Nile Valley and Delta, production is dominated by smallholdings, with 87% of farms smaller than 1 hectare, especially in Upper Egypt. By contrast, large-scale commercial farms are concentrated in newly reclaimed desert areas. Women play a vital but unequal role in this system: about 70% of rural women contribute unpaid labour on family farms, yet only around 2% of women own agricultural land.[288]

Subsidies for the agricultural sector

Government support to the sector combines indirect subsidies on inputs such as water, energy, and fertilizer, with direct price support for strategic crops, notably wheat. The Tamween food subsidy system covers nearly 79 million people, accounts for around 1.5% of GDP, and provides a vital buffer against high food prices. At the same time, the Takaful and Karama cash transfer schemes complement this safety net. Egypt has gradually liberalized agricultural markets since the 1980s, removing mandatory delivery requirements for most crops (except for cotton and sugar in some regions), and has experimented with fertilizer subsidy reforms, including a smart card system piloted in 2021. Export-oriented horticulture receives government support through certification and market facilitation programmes, though benefits accrue mainly to larger commercial producers.[289, 290]



4. Faith in Action

4.1. The Ecumenical Decade of Climate Justice Action (2025–2034)

Faith-based organizations, especially churches and their related agencies, play a unique and vital role in addressing issues of land-use, water resources, and food security. These topics are intrinsically linked to core Christian values of stewardship, compassion, and social justice. As trusted community leaders, and often as first responders due to their global and local presence, churches can raise awareness of these critical issues, mobilize local action, and advocate for policies that promote sustainable practices and equitable access to resources.

By engaging with these topics, church organizations can fulfil their mission to care for God's creation and the most vulnerable members of society. Churches can also leverage their global networks to foster international cooperation and support, bridging gaps between policymakers and local communities. Moreover, by advocating for responsible land management, water conservation, and food security, churches demonstrate their commitment to holistic well-being, addressing not just spiritual needs but also the physical and environmental challenges facing their communities.

This commitment to social justice and environmental stewardship now converges with a defining initiative of the ecumenical movement: the Ecumenical Decade of Climate Justice Action (2025–2034). Rooted in the vision of Jubilee for People and Earth, the Decade offers a *kairos* moment for churches to join together in prayer, advocacy, and concrete action for the healing of creation and the protection of vulnerable communities.

A prophetic launch

Launched on 21 June 2025, during the World Council of Churches (WCC) central committee gathering in Johannesburg, the Ecumenical Decade of Climate Justice Action (2025–2034) marks a defining spiritual and prophetic moment. Anchored in the biblical notion of "Jubilee for People and Earth," this ten-year journey calls churches worldwide to confront climate injustice at its roots: divesting from fossil fuels, supporting grassroots resilience, pursuing systemic reform, and standing in solidarity with the frontline communities bearing the brunt of ecological collapse. It is both a spiritual pilgrimage and an urgent moral uprising, imbuing faith with action and prayer with justice.

When the delegates of the WCC central committee gathered in Johannesburg from 18 to 24 June 2025, they did more than discuss the state of the world—they launched a sacred mission. With prayer candles lit and hearts set on justice, the Ecumenical Decade of Climate Justice Action began with a communal act of unity and resolve during a closing Pilgrimage Encounter with Creation.

Under the thematic banner of "Pilgrimage of Justice, Reconciliation, and Unity," church leaders from

six continents laid bare the moral crises underlying the climate emergency. Rev. Dr Charissa Suli of the Uniting Church in Australia invoked the concept of Jubilee, reminding the assembly: "Our lifestyle consumes 1.8 times what Earth can renew. Economic transformation must begin in the heart; theology must shape discipleship, and discipleship must shape the world."

Chief Edmund Stuurman, a Khoi-San Elder from southern Africa, urged spiritual boldness: "Those who represent the Lion of Judah must roar like lions, not meow like house cats." Meanwhile, Rev. Dr Semisi Turagavou from Fiji decried the fate of Pacific islands facing disappearance within 20 years, asking pointedly: "Will you come alongside our boat before it slips beneath the waves?"

The launch was not only rhetorical but deeply symbolic. Youth stewards performed a tactile liturgy with soil and seed, accompanied by a hymn from the 2023 United Nations Climate Change Conference (COP28)—planting what they called "seeds of justice." Each participant then wrote down a prayer or commitment to carry this decade forward.

Strategic action

The WCC's central committee empowered this Decade within its broader programmatic framework, ensuring oversight and coherence through ongoing monitoring and strategic planning. Beyond the launch, the WCC is urging churches to translate faith into action through divestment from fossil fuels, scrutiny of financial investments, and even strategic litigation against polluters and those who finance them.

One handbook prepared for churches frames climate justice as a legal—and deeply moral—imperative, encouraging lawsuits against industries that continue to degrade creation. As one ecumenical leader emphasized: "This is not simply an environmental campaign. It is a gospel moment—a call for the Body of Christ to embody hope in a time of ecological despair."

Historical continuity

This Decade builds on more than 40 years of ecumenical advocacy linking faith, justice, and the integrity of creation. From the 1970s calls for a just, participatory, and sustainable society, through the JPIC (Justice, Peace, and Integrity of Creation) movement in the 1980s, and the advocacy for food, water, and economic justice in the 1990s, the WCC has consistently framed care for creation as a spiritual mandate. More recently, initiatives like the Zacchaeus Tax and the New International Financial and Economic Architecture have further grounded the churches' engagement with systemic change.[291,292]

The path ahead

The Ecumenical Decade[293] is envisioned as both a spiritual pilgrimage and a roadmap for systemic transformation. Churches are urged to divest from fossil fuels, embed climate justice in theology and worship, prioritize youth and Indigenous voices, and invest in local and global climate resilience rooted in faith. As the WCC general secretary summarized: the faithful are called to move together in ecological metanoia—a turning of hearts and systems toward justice and the flourishing of creation. The decade of climate justice has six pathways, including the holistic analysis of climate change and its nexus with land, water, and food.

4.2. Voices for Water Justice in Nigeria: Communities challenge privatization

Despite Nigeria's abundant water resources, more than 70 million people still lack access to safe drinking water, and 110 million lack basic sanitation. Nigeria has the largest population without access to safe water in Africa. In Ekiti State, reservoirs stood dry while households queued for water, even as the government advanced privatization policies. In this story, the Very Reverend Kolade Fadahunsi shares how churches and communities mobilized through the Voices for Water Justice campaign to demand accountability, resist privatization, and reclaim water as a public good. Their advocacy has already led to concrete improvements in Ekiti and continues to challenge water injustice nationwide.

Water Injustice in Ekiti State

Ekiti State in southwestern Nigeria has three major reservoirs—Ado, Aramoko, and Ifaki—built to secure water for local communities. Yet, years of neglect left an estimated 70% of the pipelines broken or unserviceable. Reservoirs stood dry and taps ran empty, while families, especially women and children, walked long distances to collect water from unsafe sources. For many, water sold by vendors was the only option, consuming a large share of household income.

At the same time, state authorities promoted privatization as the solution. For churches and civil society groups, this raised alarms: water risked becoming a commodity beyond the reach of the poor.

Faith-Based Mobilization

In response, the Ecumenical Water Network Africa joined with local churches and faith leaders in Ekiti to launch the Voices for Water Justice campaign. Anglican and Methodist congregations became meeting points for awareness raising, petition drives, and peaceful marches. Pastors framed access to water as a God-given right, not a privilege: "Water is life and a gift from God, not a commodity to be sold to the highest bidder."

Faith leaders also carried their message to the state capital, where they petitioned the Ministry of Water Resources and demanded investment in public infrastructure. The campaign connected local struggles to national debates, highlighting the dangers of privatization in Lagos and other states. Alliances with trade unions, youth groups, and NGOs further amplified their voice for public–public water solutions.

Concrete Change in Ekiti

The mobilization bore fruit. In Ado Ekiti, advocacy efforts helped push the government to allocate funds in the 2022 state budget for pipeline rehabilitation. Work has begun on replacing aged and broken pipelines, and communities reported water beginning to flow again in some neighbourhoods. While the work is incomplete and challenges remain, this small but tangible change showed that organized voices can make a difference.

Ongoing Struggle in Lagos

Beyond Ekiti, the campaign has taken root in Lagos, Nigeria's commercial capital, where water privatization bills were tabled in Parliament. As the country's most populous city, any privatization there

would set a dangerous precedent nationwide. Voices for Water Justice mobilized faith leaders to petition lawmakers, advocate for public accountability, and call for investment in existing public infrastructure instead of privatization. The campaign continues to resist legislation that would deepen inequalities in access to water.

A Call to Action

The Voices for Water Justice campaign shows how faith communities can mobilize grassroots action, demand accountability, and achieve real change. But water injustice in Nigeria remains severe. Sustained advocacy, investment in public infrastructure, and global solidarity are needed to ensure that every Nigerian family has access to safe, affordable water—recognized not as a commodity but as a human right and a sacred gift.

Written by the Very Reverend Kolade Fadahunsi (Methodist Church Nigeria), Africa regional lead of the Ecumenical Water Network Africa and director of the CCN Institute of Church and Society, Ibadan.

4.3. Planting hope in Mali: Radio Chico Mali School and the fight for water and peace

In Mali, climate change has deepened droughts, heightened water scarcity, and strained food security. Against this backdrop, Souleymane Guindo—coordinator of Radio Chico Mali School and West Africa's Blue Community representative—has been building a movement that combines education, environmental stewardship, and peace-building. By turning children into ambassadors of nature and water protection, his initiatives seek to restore hope in communities most affected by the climate crisis.

When the wells in central and northern Mali began to run dry, the daily lives of farming families were turned upside down. Crops withered, food prices rose, and communities found themselves in conflict over land and scarce resources. For Souleymane Guindo, a Malian educator and coordinator of Radio Chico Mali School, the answer lay in teaching the youngest generation that protecting nature is inseparable from protecting peace.

Guindo has represented Swiss-founded Radio Chico in Mali since 2019 and now leads the Radio Chico Mali School project, a pioneering initiative that merges environmental action with children's education. He also serves as the Blue Community coordinator for West Africa, advocating for water as a fundamental human right. "Access to water is crucial for peace," he says, framing the urgency of his mission.

Climate Challenges in Mali

The climate crisis is hitting Mali hard. Severe droughts have devastated fields, while rising temperatures and the loss of plant species compound the problem. Farmers find themselves with insufficient water to sustain crops. Wells, once lifelines for villages, now run nearly dry, leaving long lines of families waiting for a few litres of water. In such conditions, maintaining biodiversity or practising sustainable agriculture becomes almost impossible.

Beyond the environmental toll, these shortages feed intercommunity tensions, as groups compete for

shrinking arable land. “The land itself is becoming a source of conflict,” Guindo explains.

Radio Chico Mali's Initiatives

Since its founding in 2019, Radio Chico Mali School has positioned itself as an ambassador for both nature and peace. The organization’s projects centre on education through action.

Children are encouraged to plant vegetables, fruit trees, and medicinal plants, often alongside their families. More than 100 children now cultivate their own gardens, producing food that eases household shortages. The school’s flagship garden demonstrates forest gardening, an approach that maximizes shade and conserves water. Annual plant days invite whole communities to participate, turning the garden into a hub of environmental learning and collective stewardship.

The impact extends far beyond the schoolyard. “When children grow food, they grow confidence,” says Guindo. Families begin to see their children not only as learners but as contributors to household resilience.

Blue Community Recognition

In 2023, Radio Chico Mali School became the first organization in West Africa to sign on to the Blue Community initiative, a Swiss-led framework promoting the protection of water resources and the recognition of water as a human right. Certification followed in May 2024, marking a milestone for Mali and opening the door for five other West African countries to join.

As coordinator, Guindo emphasizes three pillars: protecting water sources, spreading awareness that water is a common good, and ensuring equitable access to clean drinking water.

Recognition and Achievements

Local authorities, including mayors and district leaders, have joined the project, recognizing its importance for stability and sustainability. The Ministry of Education has invited Radio Chico Mali School to present its work, and at the École normale supérieure de Bamako, children themselves presented on peace and the role of plants in fighting climate change.

The results speak for themselves: more than 300 children and their families have directly benefited. The

children are confident, skilled in food production, and motivated to share their knowledge with peers. The project is cultivating not just vegetables but a new culture of resilience and environmental responsibility.

A Call to Action

"Our message is simple," Guindo says with conviction. "It's the small steps that can change the world. I invite everyone not to wait too long to make a difference, because through these small steps, we can transform our world."

In a country where drought often defines the headlines, Radio Chico Mali School is rewriting the story—one garden, one child, one drop of water at a time.

4.4. Nourishing Change: School Meals Transforming Lives in the DRC

In the Democratic Republic of the Congo, faith-based organization Malteser International is leading transformative school meals programmes that not only feed children but also restore hope, improve education, and build healthier communities. Through innovative initiatives that combine nutrition, agriculture, and hygiene, schools in the Aru and Mahagi territories in the province of Ituri—regions also affected by displacement and insecurity—are witnessing a remarkable drop in absenteeism and illness while fostering sustainability and resilience.

Faith-Based Responses: Malteser International in the DRC

In the heart of the DRC, the simple act of sharing a meal is transforming the future of thousands of children. Malteser International, a faith-based humanitarian organization, is running school canteen projects under its PROSA (Programme Santé) initiative in the province of Ituri, across the Aru and Mahagi territories. The programme is proving to be more than just a feeding scheme—it is an integrated effort to combat malnutrition, keep children in school, and strengthen local communities.

Thirteen schools are benefiting from this initiative during the 2024–2025 academic year. So far, more than 16,800 preschool children have received meals, 4,000 malnourished children have been successfully treated, and 1,000 agricultural groups established. Improved access to clean water now reaches 10,000 people, creating a ripple effect far beyond the schoolyard.

School Meals as a Lifeline

At EP Amorio Primary School in the Adi health zone, head teacher Ayiki Amuzanga recalls the days before the project: "Before Malteser's intervention, there was no school canteen. This is our first experience." Today, his school benefits from modern kitchens, agricultural training, and school gardens that provide nutrient-rich vegetables. Parents also contribute produce, reinforcing a sense of shared responsibility.

The results are clear. Drop-out rates are falling, attendance is improving, and exam results are rising. Children not only eat better but also bring healthier

habits home—washing hands, drinking clean water, and learning about hygiene. "It even helps the family economy," Amuzanga notes.

Songe Primary School in the Mahagi territory paints a similar picture. For many of its 880 students—16.8% of whom come from internally displaced families fleeing violence—the hot porridge served daily is their only substantial meal. Deputy head teacher Ucandu Umung'a Solange has seen remarkable changes: "Absenteeism is no longer a problem. They concentrate in class now, unlike in the past, when they were hungry. Nutritional diseases like kwashiorkor are no longer a problem."

Sustainable Agriculture and Skills for Life

The school gardens are an integral part of the project. They not only supply vegetables for the canteens but also serve as demonstration plots for good agricultural practices, where teachers and pupils work together. Children gain hands-on skills in cultivation and nutrition, while surplus produce is sometimes sold in local markets to generate a small income and strengthen sustainability.

Livestock rearing and fish farming further enrich school meals and diversify diets. These activities also provide opportunities for families to learn new techniques and improve household food security, making the project more than a short-term intervention—it is a foundation for long-term resilience.

Health, Education, and Community Impact

The initiative also extends to water, sanitation, and hygiene (WASH) measures. With new taps, latrines, and hygiene awareness programmes, schools report healthier children and cleaner environments. Water tanks supply safe drinking water, reducing disease and giving children the dignity of cleanliness. These habits extend into families and communities, multiplying the programme's impact.

Ultimately, Malteser International's school meals initiative is not only feeding children, it is nourishing hope. By linking food security, education, and health, this faith-driven programme is creating lasting change. "When the children grow up healthy and knowledgeable, they become productive adults who will become useful for their communities and for our country, DR Congo," says one teacher. Faith, food, and education are combining to transform lives, one meal at a time.

A Call to Action

Malteser International's work in Ituri shows how faith-driven responses can transform lives in fragile settings. In territories like Aru and Mahagi, which host many displaced families, the simple act of providing a daily meal is not only a lifeline for children but also a stabilizing force for entire communities.

As violence and displacement continue to disrupt food systems across eastern DRC, scaling up such initiatives is vital. School meals, combined with gardens, livestock, and WASH support, can anchor resilience where it is most needed. To make this possible, safe humanitarian access and sustained international funding are essential so that a generation of Congolese children can grow, learn, and thrive despite the crisis around them.

4.5. From struggle to sustainability: How ECLOF is empowering Uganda's smallholder farmers

In Uganda, where more than 70% of the population depends on smallholder farming, climate change and rising costs threaten the country's most vital livelihoods. The Ecumenical Church Loan Fund (ECLOF), a Geneva-based Christian microfinance network, is helping farmers turn vulnerability into resilience.

By pairing credit with complementary training, ECLOF equips rural communities—especially women—with the resources to grow food, diversify incomes, and withstand climate shocks. The story of Ms Nabunjjo Sarah, a 65-year-old farmer from Luweero District, illustrates how faith, finance, and perseverance can transform a half-acre into a thriving multi-crop enterprise that sustains both a family and a community.

Faith-Based Responses: ECLOF in Uganda

Over 70% of Uganda's population is engaged in agriculture, with smallholder farmers forming the backbone of the nation's food system. These 3.5 million family-led farms, typically operating on less than 2 hectares, are vital to Uganda's economy. Yet, despite their crucial role, these farmers face challenges that threaten their livelihoods: climate change, inflation, and poverty.

Climate change has disrupted predictable weather patterns, leading to erratic rainfall, prolonged droughts, and devastating floods that threaten both

crop yields and food security. Inflation continues to drive up the costs of essential inputs such as seeds, fertilizer, and pesticides, making it harder for farmers to adopt modern tools and techniques. Poverty and limited access to up-to-date farming technologies further hinder productivity and progress.

Microfinance is an effective tool that enables disadvantaged farmers, who are often excluded from traditional banking, to access capital. With financial backing, farmers can purchase higher-quality seeds, install irrigation systems, and explore sustainable practices to boost productivity. Access to credit empowers farmers to diversify their crops and build more resilient sources of income, equipping communities to better withstand climate shocks.

ECLOF's highest priority is to reach vulnerable communities, particularly in rural areas, which are excluded from access to formal sources of finance. Its mission is to empower the disadvantaged and vulnerable, offering not just credit but dignity, hope, and pathways to prosperity.

Building Local Impact

Established in 1946, ECLOF International is a Geneva-based Christian non-profit organization connecting a global network of 14 independently operated microfinance institutions in Africa, Asia, Latin America, and Eastern Europe. Each member provides financial and non-financial services to vulnerable populations—especially women, youth, smallholder farmers, and rural communities.

Since 1993, ECLOF Uganda, based in Kampala, has been advancing its mission across disadvantaged communities. The institution provides credit programmes and practical training to micro-entrepreneurs and smallholder farmers, with nearly half of its clients being women. Many of these women form solidarity groups, co-guaranteeing each other's loans and eliminating the need for collateral.

For ECLOF, the relationship with clients is a partnership of equals, not a one-way relationship between donor and recipient. Its responsibility is to lend capital on reasonable terms appropriate to clients' circumstances. Their duty is to use it well and repay it. Both sides strive, in the language of the gospels, to be excellent stewards of the resources they share.

ECLOF also extends financial support to educational institutions, including Christian schools and community facilities that foster long-term development. Focused on alleviating poverty and promoting economic development, ECLOF offers tailored microloans, training, savings accounts, and inclusive financial products.

Research shows that when microfinance is combined with targeted training and capacity building, it transforms financial access into a powerful tool for sustainable agriculture. ECLOF invites farmers to participate in training that includes financial literacy, bookkeeping, good agricultural practices, and women's empowerment.

Ms Nabunjjo Sarah's Journey

Sarah is a 65-year-old mother of 11 and a seasoned farmer living in Uganda's Luweero District. She was raised in Kampala and relocated to Luweero after her marriage. Observing the high cost and poor quality of urban vegetables, Sarah began growing her own food and never looked back.

She started working with ECLOF in 2005, joining a self-help group called Kwegatta Gemanyi and receiving her first loan of 800,000 Ugandan shillings. In 2018, she qualified for individual loans and now manages a 12-month facility worth 5 million Ugandan shillings.

With support from ECLOF, she transformed her small farming operation from half an acre of maize to over 15 acres of diversified crops, including coffee, cassava, potatoes, beans, and short-term vegetables such as cabbage. She also established a piggery and acquired an additional 10 acres in Lukoola to grow maize.

ECLOF's assistance has enabled Sarah not only to expand her business but also to educate her children, many of whom now run their own enterprises, including drug shops and electronics stores. She appreciates ECLOF's low interest rates, caring customer service, and consistent follow-up visits that help her stay on track.

She fondly recalls ECLOF's generosity during the COVID-19 lockdown, when staff delivered essentials

such as rice, soap, and maize flour, along with face masks. For Sarah, this relationship feels deeply personal, built on mutual respect and shared goals.

Despite her progress, Sarah continues to face significant challenges: climate fluctuations that have damaged her coffee plantation; heavy rain that has affected entire plots; rising costs of agricultural inputs, especially fertilizers such as NPK, DAP, and CAN; and market price instability coupled with the prevalence of counterfeit agricultural drugs.

Still, Sarah remains resilient. She credits her success to her faith in God, her ability to stay calm in adversity, ECLOF's guidance, and her smart investment strategy that includes short-term crops to sustain her family during lean seasons. Her children also step in during difficult periods, providing labour when yields are low.

Today, Sarah employs two casual labourers who assist with daily farm work. She is part of a growing community of farmers in Uganda, empowered by ECLOF to build dignified, sustainable livelihoods. She considers herself fortunate to have ECLOF by her side, especially in hard times. According to her, "ECLOF is not merely financing farms, it is securing food systems, strengthening communities, and planting the seeds of lasting change."

A Call to Action

Sarah's journey is a testament to her determination and to what is possible when finance meets vision. Amid climate uncertainty, ECLOF's credit and training programmes are reshaping agriculture at the grassroots. To secure the future of smallholder farming in Uganda, such initiatives need to be scaled up and supported with sustained investment.

Human dignity is ECLOF's goal: a world where all can share the God-given benefits of the Earth in security and without fear for the future.

5. Theological reflection

Securing Water for Food Security and Climate Adaptation

This theological reflection is adapted from the "Seven Weeks for Water 2019" campaign of the World Council of Churches' Ecumenical Water Network. It was jointly written by Dr Manoj Kurian, then coordinator of the WCC Ecumenical Advocacy Alliance, and Ms Athena Peralta, then programme executive for Economic and Ecological Justice.

In the following reflection, the authors explore the close interconnections between water, food, and climate change, emphasizing how our patterns of production and consumption in one area inevitably affect the others. They invite us to examine our individual and collective footprints on water and climate and to respond through care, moderation, and stewardship so that all of creation may flourish and the planet may become more sustainable for future generations.

Texts

Psalm 104:10–18

You make springs gush forth in the valleys;
they flow between the hills,

giving drink to every wild animal; the wild
asses quench their thirst.

By the streams the birds of the air have their
habitation; they sing among the branches.

From your lofty abode you water the
mountains; the earth is satisfied with the
fruit of your work.

You cause the grass to grow for the cattle,
and plants for people to use, to bring forth
food from the earth, and wine to gladden
the human heart, oil to make the face shine,
and bread to strengthen the human heart.

The trees of the Lord are watered
abundantly, the cedars of Lebanon that he
planted.

In them the birds build their nests; the stork
has its home in the fir trees.

The high mountains are for the wild goats;
the rocks are a refuge for the hyrax.

Exodus 16:16–18

Moses said to them, "It is the bread the Lord
has given you to eat. This is what the Lord
has commanded: 'Everyone is to gather as
much as they need. Take an omer for each
person you have in your tent.'"

The Israelites did as they were told; some
gathered much, some little. And when
they measured it by the omer, the one who
gathered much did not have too much, and
the one who gathered little did not have too
little. Everyone had gathered just as much
as they needed.

Reflection

We acknowledge and glorify God, the protector and bountiful provider of this earth, for all creatures. God cares for all—even wild animals, land, seas, and the uncultivated parts of the earth.

God blessed humanity, saying, "Be fruitful and multiply; abound on the earth and multiply in it" (Genesis 9:7). Today, we are over eight billion human beings and are having a tremendous impact on the planet. But the Bible makes it clear that the earth belongs to God and that God bestows life, water, food, and beauty upon all creation, not only human beings (Psalm 24:1–2).

After the devastating floods, God provided creation with a new beginning—a new opportunity for humanity to live in harmony with the environment and with every creature on earth. God's covenant is with both humanity and with all creation and marks the newly restored relationship between God and God's creatures (Genesis 9:8–11).

Earth's ecosystems host diverse and complex biological communities that live in balance with their environments. Ecosystems consist of living organisms interacting with the non-living elements of their environment—such as soil, atmosphere, water, and sunlight—in ways essential to their survival. Though water resources are finite, and only 0.007% of the planet's water is available to fuel and feed all people,

there is sufficient fresh water on the planet to achieve this—if it is equitably distributed among all people. Most people do not acknowledge this truth, and we often consume and live in ways that focus exclusively on our own interests, to the exclusion of our sisters, brothers, and other creatures.

Agriculture accounts for, on average, 70% of global water withdrawals, and not all of this water is used judiciously. To make matters worse, a third of all food produced—requiring most of this water—is wasted.

There is a huge difference in water consumption between the rich and the poor. People living in wealthy nations may use more than 500 litres of water per day, while people in the poorest communities consume as little as 15 litres per day. To ensure healthy living, each person needs access to about 100 litres of water per day, according to World Health Organization recommendations.

We all have a "water footprint"—a measure of water use, including direct use (such as for drinking and cleaning) as well as indirect use (the water required to produce goods and services). The latter is also described as "virtual water."

In more affluent economies, only a fifth of the water footprint is produced within their own country; most of the burden is borne by the societies from which goods and services are imported. Often, these are poorer, already water-stressed regions. When the virtual water used to produce food, clothing, and other products is included, the total footprint amounts to thousands of litres per person per day.

The 2018 report of the Intergovernmental Panel on Climate Change on the impacts of global warming of 1.5°C reveals that climate change is occurring faster than previously thought and that many of its impacts will be felt through water. The study finds that with each additional degree of warming, droughts are projected to accelerate, especially in regions already affected by dry spells. Therefore, limiting global warming to 1.5°C will significantly reduce the probability of extreme droughts compared to a 2°C scenario. Moreover, water insecurity is projected to increase with further warming above present-day levels, but fewer people (between 184 and 270 million) would be affected at 1.5°C compared to a 2°C world.

For every 1°C rise in temperature, an additional 7% of the population will experience a 20% decline in water availability. Overall, water scarcity, conflicts over water, and massive losses to agriculture and livestock could become the norm. Needless to say, such a situation will also result in food shortages. Together with rural populations, people depending on forests for food and livelihoods—in other words, many of those living in poverty—will be particularly affected.

Let us remember that the water we use, the food we eat, the things we consume, and the climate of our only home—Mother Earth—are inextricably connected. Let us live in this world by caring for creation, enriching life, and protecting it from harm. God calls us to respond through stewardship, a spirituality of sufficiency, and a radical sharing of resources.

Questions for reflection

1. How are we impacting the environment through the water we consume and the food and goods we use?
2. How can we assist communities living in water-stressed regions by promoting sustainable agriculture and energy use?
3. How can we raise these questions and create safe spaces for dialogue in our congregations and communities?

Practical ideas for action

1. Calculate the virtual water you consume: https://www.watercalculator.org/. What steps can you take to reduce it?
2. Calculate your ecological footprint: https://www.footprintcalculator.org/. What steps can you take to reduce it?
3. Try a "carbon fast" during Lent, even for a few days.

Resources

1. Ten Commandments of Food: Advocacy Tools for Congregations (WCC)
2. Water Footprint of European Agricultural Imports (Brot für die Welt)
3. The Quiet Power of Virtual Water Trade in Shaping Global Resource Dynamics (International Water Management Institute)

Photo description and credits

Front Cover

>>> Smiling woman with a basket working on a plantation.

Photo Credit: Safari Consoler, 11 March 2023.

Source: https://www.pexels.com/photo/smiling-woman-with-basket-working-on-plantation-15897036/

Introduction, p. 4

>>> Portrait of a fisherman, Egypt.

Photo Credit: Eslam Mohammed Abdelmaksoud, 25 Aug 2024.

Source: https://www.pexels.com/photo/portrait-for-fisher-man-27977841/

Editorial, p. 7

>>> A woman eat leaves from the lalob tree in a camp for internally displaced people in Manangui, South Sudan. The tree (Balanites aegyptiaca) is a common hunger food in the region.

Photo credit: ACT Alliance/Paul Jeffrey, 20 Mar 2014

Source: https://actalliance.photoshelter.com/search/result/I0000XAZKAUYN9sM?terms=South%20Sudan%20woman%20eats%20lalob%20tree%20leaves%20to%20survive.&

1.1 Indicators on land and biodiversity, p. 8

>>> A group of men in African clothing carrying drums, Nigeria.

Photo Credit: Dokun Ayano, 17 May 2024.

Source: https://www.pexels.com/photo/a-group-of-men-in-african-clothing-are-carrying-drums-27291184/

1.2 Indicators on water resources, p.9

>>> Aerial photography of a boat on the Volta River, Ghana.

Photo Credit: Earthy Lassy, 26 December 2021.

Source: https://www.pexels.com/photo/aerial-photography-of-a-boat-on-the-river-12190172/

1.3 Indicators on food security and agriculture, p. 11

>>> Hands holding bowl with fish, Yaoundé, Region du Ctre, Cameroon.

Photo Credit: Ulrich Keutchatang, 14 July 2023.

Source: https://www.pexels.com/photo/hands-holding-bowl-with-fish-18015965/

2.1.1 West Africa, p.13

>>> A macaque sitting on a tree branch, Benin.

Photo Credit: Kenza Loussouarn, 30 Jan 2021.

Source: https://www.pexels.com/photo/a-macaque-sitting-on-a-tree-branch-6731682/

2.1.3 North Africa, p.13

>>> Palm trees plantation in a desert, Zagora Morocco.

Photo Credit: Moussa Idrissi, 19 May 2007.

Source: https://www.pexels.com/photo/palm-trees-plantation-in-a-desert-11387347/

2.2.1 West Africa, p.

>>> Green trees around River, Banjul, The Gambia.

Photo Credit: Kelly, 19 Apr 2023.

Source: https://www.pexels.com/photo/green-trees-around-river-16562860/

2.2.2 Central Africa, p.15

>>> Man on boat in a village during a flood.

Photo Credit: Safari Consoler, 25 Apr 2025.

Source: https://www.pexels.com/photo/men-on-boat-on-water-in-village-during-flood-25228172/

2.3.1 West Africa, p.16

>>> Traditional rice preparation in a Nigerian village.

Photo Credit: Nannawa Badiya, 20 Apr 2025.

Source: https://www.pexels.com/photo/traditional-rice-preparation-in-nigerian-village-31718294/

2.3.2 Central Africa, p.17

>>> Choosing vegetables: People choose the vegetables at Binta's shop in Dakar.

Photo Credit: Vincent Tremeau /World Bank, 26 Jun 2019.

Source: https://flic.kr/p/2nstz8T

2.3.3 North Africa, p.18

>>> Ripe dates hanging on palm tree in Tabarka, Tunisia.

Photo Credit: Mahmoud Yahyaoui, 23 Sept 2024.

Source: https://www.pexels.com/photo/ripe-dates-hanging-on-palm-tree-in-tabarka-tunisia-28676988/

3.1 Nigeria, p.19

>>> Traditional Nigerian musicians in blue attire.

Photo Credit: MD Photography, 13 Jun 2025.

Source: https://www.pexels.com/photo/traditional-nigerian-musicians-in-blue-attire-32547124/

Indicators: food security and agriculture, p.21

>>> Curious goat reaching for leaves in Nigeria.

Photo Credit: Bilal Abdulkarim, 10 Apr 2025.

Source: https://www.pexels.com/photo/curious-goat-reaching-for-leaves-in-nigeria-31574953/

>>> Cattle walking on street, Kaduna Nigeria.

Photo Credit: MG Shotz, May 2023.

Source: https://www.pexels.com/photo/cattle-walking-on-street-16815576/

>>> Street Food market stand with vegetables and fruit next to busy street.

Photo Credit: Godiva Omoruyi, 11 Jan 2024.

Source: https://www.pexels.com/photo/street-food-market-stand-with-vegetables-and-fruit-next-to-busy-street-23490764/

3.2 Mali, p. 23

>>> Children run through the street early on a Friday morning in Timbuktu, the northern Mali city.

Photo Credit: Paul Jeffrey for the ACT Alliance, 7 Jun 2013.

Source: https://actalliance.photoshelter.com/search/result/I0000a_zqCeHkg74?terms=mali&

Indicators: water resources, p.22

>>> Boats on a river, Bamako, Mali.

Photo Credit: Fatih Turan, 20 July 2023.

Source: https://www.pexels.com/photo/boats-on-a-river-17676146/

Indicators: food security and agriculture, p.23

>>> Three women ride donkeys across the semi-arid landscape around Toya, a village in northern Mali near Timbuktu.

Photo Credit: Paul Jeffrey for the ACT Alliance, 6 Jun 2013.

Source: https://actalliance.photoshelter.com/search/result/I0000EW0HeANS4IA?terms=mali&

>>> Woman holding a bowl on her head. p.24

Photo Credit: Julio Salvatierra, 26 May 2023

Source: https://pixabay.com/photos/woman-job-mali-africa-portrait-8014573/

3.3 Liberia, p. 25

>>> A serene coastal scene featuring tall palm trees swaying gently by the beach.

Photo Credit: Jacob Kpehe, 14 August 2024.

Source: https://unsplash.com/photos/a-couple-of-people-sitting-on-a-bench-under-palm-trees-iizO3dq9bSY

Indicators: land and biodiversity, p.26

>>> Young girls reading at a school in Monrovia, Liberia.

Photo Credit: B. Aristotlè Guweh Jr, 27 Sept 2024.

Source: https://www.pexels.com/photo/young-african-girls-engaged-in-reading-in-liberia-28638752/

Indicators: food security and agriculture, p. 27

>>> Cassava mash for lunch for Ivorian Refugees in Liberia.

Photo Credit: ACT/FCA/Laurie MacGregor, 9 Apr 2011.

Source: https://actalliance.photoshelter.com/search/result/I000082AEYbT78iE?terms=liberia&

>>> Cocoa farmer drying beans in Ghana.

Photo Credit: Zeal Creatives, 21 March 2025.

Source: https://www.pexels.com/photo/cocoa-farmer-drying-beans-in-ghana-31283914/

>>> Women farmers plow their fields in preparation to plant corn in Gnoungouya Village, Guinea on June 15, 2015.

Photo Credit: Dominic Chavez/World Bank, 15 June 2015.

Source: https://www.flickr.com/photos/worldbank/19846950699/in/album-72157601463240055/

3.4 Sierra Leone

Indicators: land and biodiversity, p. 28

>>> View of a tropical coastline, Sierra Leone.

Photo Credit: Sheku Koroma, 21 Sept 2011.

Source: https://www.pexels.com/photo/view-of-a-tropical-coastline-4441618/

Indicators: water resources, p.29

>>> Boats in harbour at Kent on the way to Banana Islands, Sierra Leone

Photo Credit: Random Institute, 1 Sept 2021

Source: https://unsplash.com/photos/red-and-yellow-boat-on-shore-during-daytime-x7dVkzOqk2M

>>> Man Searching for Diamonds, Eastern Province, Sierra Leone.

Photo Credit: Omotayo Tajudeen, November 12th, 2019

Source: https://www.pexels.com/photo/man-searching-dor-diamonds-4441607/

Indicators: food security and agriculture, p. 30

>>> Harvested green bananas at Nigerian Market

Photo Credit: Ahmed Abubakar Bature, 2 October 2024.

Source: https://www.pexels.com/photo/harvested-green-bananas-at-nigerian-market-31537314/

>>> Three people carrying basket on their heads while running in grass field. Taken on a trip in 2016 with World Vision to Sierra Leone.

Photo Credit: Annie Spratt, 2016.

Source: https://unsplash.com/photos/three-people-carrying-basket-on-head-while-walking-on-grass-field-4Fj0JnJq1s4

3.5 Democratic Republic of Congo

Indicators: land and biodiversity, p. 31

>>> Close-up of a hippopotamus sitting in a body of water with green plants

Photo Credit: Gamroth Joerg, 6 July 2024.

Source: https://www.pexels.com/photo/close-up-of-a-hippopotamus-sitting-in-a-body-of-water-with-green-plants-26999550/

>>> Mother gorilla with baby in lush forest scene.

Photo Credit: Jay Brand, 20 May 2025.

Source: https://www.pexels.com/photo/mother-gorilla-with-baby-in-lush-forest-scene-32181427/

Indicators: water resources, p.32

>>> A person washing hands with soap and water, Kinshasa, Democratic Republic of Congo.

Photo Credit: Israël Umba, 23 Mar 2020.

Source: https://www.pexels.com/photo/a-person-washing-hands-with-soap-and-water-3995736/

3.6 Libya, p.34

>>> The Al-Jawf oasis in Eastern Libya, photographed by crew members aboard the International Space Station.

Photo Credit: NASA Johnson, 5 Feb 2017

Source: https://flic.kr/p/RCeAgS

Indicators: water resources, p.35

>>> Aerial view of a desert peninsula on a turquoise sea, Libya.

Photo Credit: Abdo Alshreef, 31 May 2024.

Source: https://www.pexels.com/photo/aerial-view-of-a-desert-peninsula-on-a-turquoise-sea-25254444/

3.7 Egypt

Indicators: land and biodiversity, p. 37

>>> Man holding fish, Cairo, Egypt.

Photo Credit: Eslam Mohammed Abdelmaksoud, 6 Aug 2024

Source: https://www.pexels.com/photo/smile-27605558/

>>> Outdoor market in Cairo.

Photo Credit: Alex Azabache, 2 Jun 2017

Source: https://www.pexels.com/photo/people-walking-3243027/

Indicators: food security and agriculture, p. 38

>>> Woman Salting Sun Dried Tomatoes, Luxor Egypt.

Photo Credit: Adam Cohn, 12 Feb 2023.

Source: https://www.flickr.com/photos/adamcohn/52738991039/

4.1 The Ecumenical Decade of Climate Justice Action (2025–2034), p. 41

>>> Conclusion of a Pilgrimage Encounter with Creation – including the launch of the Ecumenical Decade of Climate Justice Action – at the 2025 Central Committee meeting of the World Council of Churches taking place in Johannesburg (South Africa) from 18 to 24 June 2025.

Photo Credit: Albin Hillert/WCC

Source: https://oikoumene.photoshelter.com/search/result/I0000lCnNmw5MKfc?terms=closing%20act&include_tags=true&

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>>> Group photo from Water Saves Life Campaign Nigeria

Photo Credit: Kolade Fadahunsi, Ecumenical Water Network Nigeria

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Photo Credit: Malteser International.

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Photo credit: ECLOF Uganda

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Editorial team: Maike Gorsboth, Astha Joshi, Hella Tangu

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World Council of Churches

150 Route de Ferney, P.O. Box 2100

1211 Geneva 2, Switzerland

www.oikoumene.org

The Living Planet Monitor gives you an overview of the situation in a particular continent in the world by monitoring indicators on food security, water resources, land use, and climate resilience. It is a key instrument for faith communities to stay informed on the current situation, share good practices and projects led by church-based organizations, and give hope and courage to transform the situation.

If you have an interesting story or a good practice to share on the issues of land, water, and food or its nexus, please write to us at infowcc@wcc-coe.org.

Dinesh Suna, Editor

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