

Burkina Faso: Food Security and Ecosystem Resilience

Introduction

The Ministry of Agriculture, Water Resources, and Fisheries in Burkina Faso is responsible for the areas of agricultural and fish production and for managing the non-irrigated and irrigated agricultural land. It operates within the broad framework of the Accelerated Growth Strategy for Development which, as one of the strategies to stimulate the economy, aims to transform agriculture. Other relevant development plans include the National Rural Sector Program 2016-2020 and Burkina 2025, the national vision document. shows key indicators for the country.

Table 1: Key Indicators for Burkina Faso (World Bank, 2017) (UNDESA, 2018)

BURKINA FASO	2018
Total population (million)	19.75
Total area (km ²)	272,967
Population density (persons/km ²)	72.2
Per capita income, 2015 (US \$)	640

Relevant SDG 2 indicators
2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)
2.4.1 Proportion of agricultural area under productive and sustainable agriculture

Agriculture in the Burkina Faso Economy

About 71.3 per cent of Burkina Faso's 19.7 million people live in the rural areas. Between 2016 and 2017, the population grew at a rate of 2.9 per cent. Agriculture contributed 31.3 per cent of GDP in 2018 and most of the population was involved in subsistence agriculture. Employment in this sector has been on a downward spiral declining from 82 per cent in 2005 to 60.9 in 2010 and 27.6 in 2018. The proportion of women in the agricultural workforce in 2018 was 28.7 per cent (World Bank, 2018) (UNDESA, 2018).

The land surface area of Burkina Faso is 272,967 km² and of this 44 per cent is agricultural land as shown in **Error! Reference source not found.** (UNDESA, 2018) (World Bank, 2017).

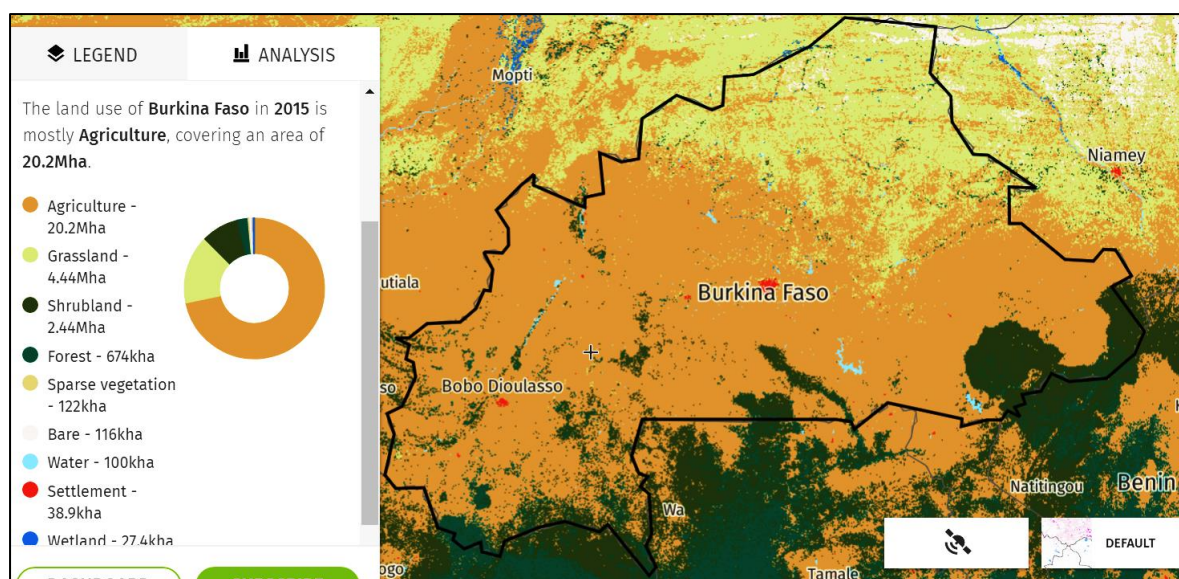


Figure 1: Burkina Faso's land cover (2015). Data source: Global Forest Watch

Food Security Situation

Food insecurity is an issue especially in certain parts of the country such as northern Burkina Faso where there is pressure from refugees and internally displaced people and also civil insecurity. For instance, it was estimated that between June and August 2019, a total of 687,000 people required food aid (FAO, 2019).

Erratic rainfall, deforestation and soil nutrient loss due to soil erosion and creeping desertification are some of the drivers behind the food insecurity issue in the country. Land degradation is said to cost Burkina Faso about US \$1.8 billion or 26 per cent of the country's GDP (UNCCD, 2018). Between 2015 and 2017, 21.3 per cent of the total population was undernourished with 23.8 per cent categorized as food insecure as shown in **Error! Reference source not found.** (FAO, IFAD, UNICEF, WFP and WHO, 2018). Both these indicators are higher than the average for the Western Africa region. **Error! Reference source not found.** highlights the livelihood zones or geographic areas where people share similar means of accessing food and income across the country.

Table 2: Food insecurity trends in Burkina Faso (FAO, IFAD, UNICEF, WFP and WHO, 2018)

Region	Prevalence of undernourishment in the total population (%)		Prevalence of severe food insecurity in the total population (2015-2017)	Prevalence of wasting in children under 5 (2017)	Prevalence of stunting in children less than 5 years of age (%)		Prevalence of overweight in children under 5 years of age (%)	
	2004-2006	2015-2017	%	%	2012	2017	2012	2017
Burkina Faso	24.9	21.3	23.8	7.6	32.9	27.3	2.8	1.2
Western Africa	12.3	13.1	25.1	8.1	31.9	29.9	2.6	2.4

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	2004-2006	2015-2017	%	%	2012	2017	2012	2017
Africa	21.3	19.6	25.9	7.1	32.6	30.3	5.0	5.0

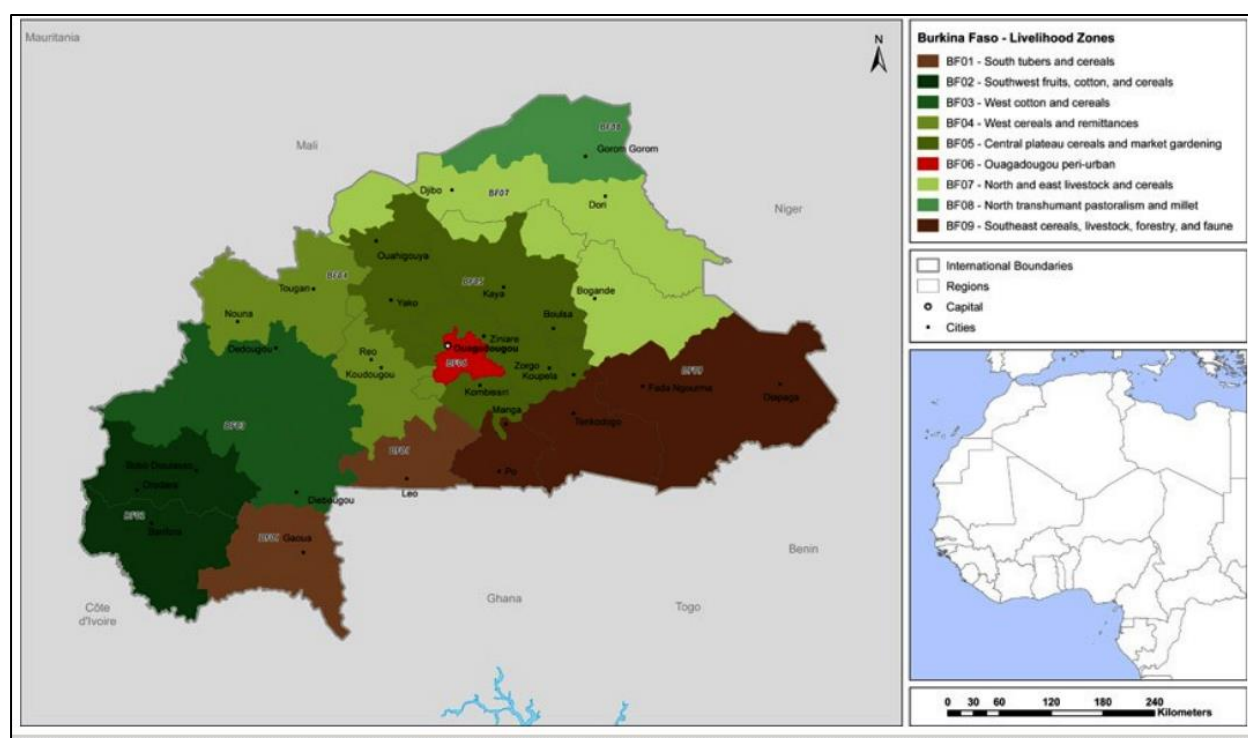


Figure 2: Burkina Faso Livelihood Zones. Source fews.net

Ending Hunger

Genetic Diversity

Increasing food resilience by ensuring genetic diversity is important as these are the building blocks for sustained food production. Data from 2018, indicates there were 22 local breeds kept in the country, however these are under threat. In 2007, six breeds were classified as being at an unknown risk of extinction and these increased almost four-fold to 22 in 2008 and it remained at that number till 2018. The risk level of extinction of the local breeds is 100 per cent (UN Stats, 2019).

Relevant SDG 2 indicators

- 2.5.1** Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities
- 2.5.2** Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction

Renewable Energy

The share of renewable energy in the total final energy consumption in 2016 was 72.26 per cent as shown in Figure 3. This is a 13 per cent decline from the share in 2000 (UN Stats, 2019). Renewable energy mix in Burkina Faso includes solar and hydropower.

Relevant SDG 7 indicator

7.2.1 Renewable energy share in the total final energy consumption

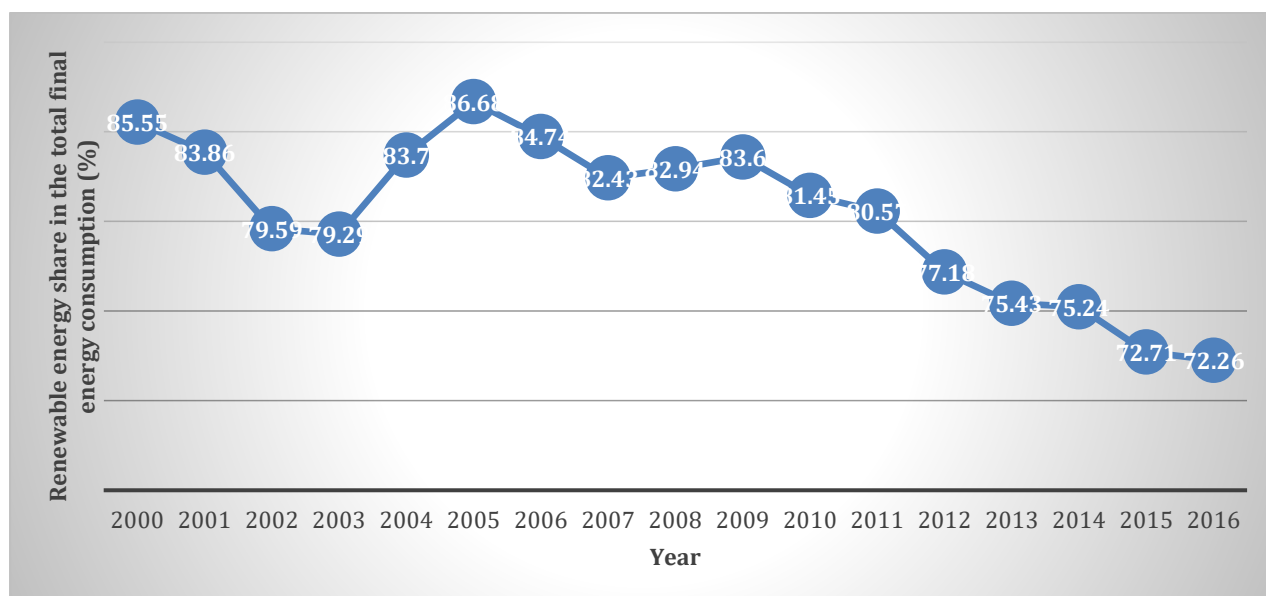


Figure 3: Trends in renewable energy share in the total final energy consumption (%) 2000-2016 (UN Stats, 2019)

Clean Water and the Marine Environment

Water Quality

Permanent water bodies cover 370 km² or 0.13 per cent of the total land area (UN Stats, 2019). Water shortage is a big issue in this country. Dams and reservoirs provide 82 per cent of the surface water and are used principally for agriculture, livestock and fishing. It is estimated that since reservoirs started being constructed in the 1950s, fish catch has increased 15-fold (Melcher, et al., 2018). Figure 4 shows the location of reservoirs and their sizes around the country.

Relevant SDG 6 indicators

- 6.3.1** Proportion of wastewater safely treated
- 6.3.2** Proportion of bodies of water with good ambient water quality
- 6.4.2** Level of water stress: freshwater withdrawal as a proportion of available freshwater resources.
- 6.6.1** Change in the extent of water-related ecosystems over time

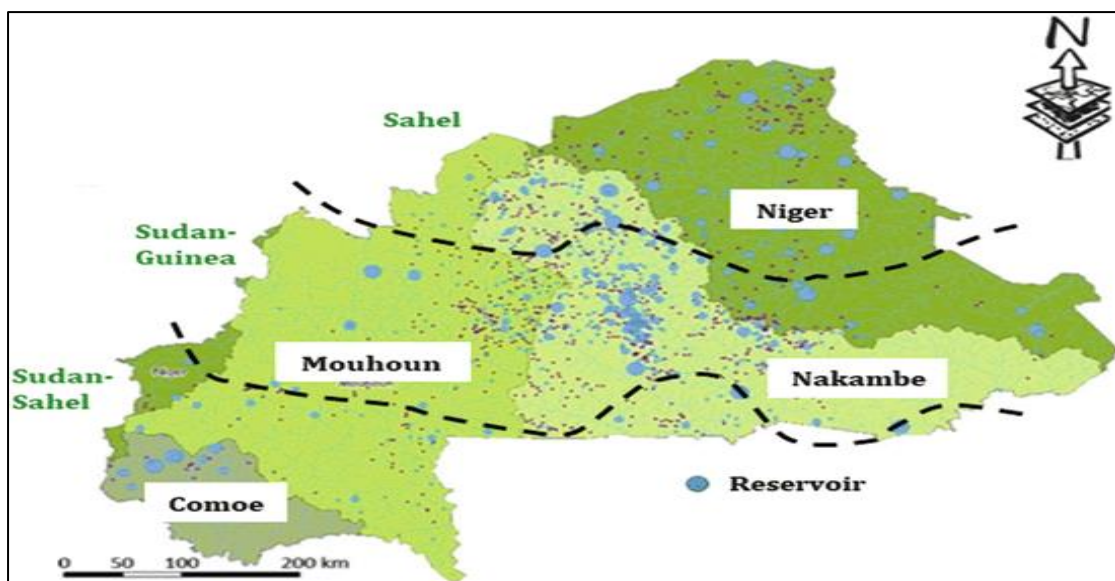


Figure 4: Location of reservoirs and their sizes in the four river basins and three eco-regions of Burkina Faso. (Melcher, et al., 2018)

The annual volume of waste water generated within urban areas in 2009 was 0.048 km³ up from 0.041 in 2007. Of this, only 0.002 km³ is collected through formal collection systems such as municipal wastewater sewers or other formal collection systems and 0.0013 km³ is treated by wastewater treatment facilities (FAO, 2018). This implies wastewater management is an issue that requires urgent attention and it is likely that it affects the quality of raw water in the environment. Indeed, at the national level the proportion of open defecation in 2015 was 47.97 per cent and the proportion of households using at least basic sanitation service was only 22.5 per cent in the same year (SDGCA and SDSN, 2018); (UN Stats, 2019). **Error! Reference source not found.** shows the trends in open defecation in Burkina Faso between 2000 and 2015.

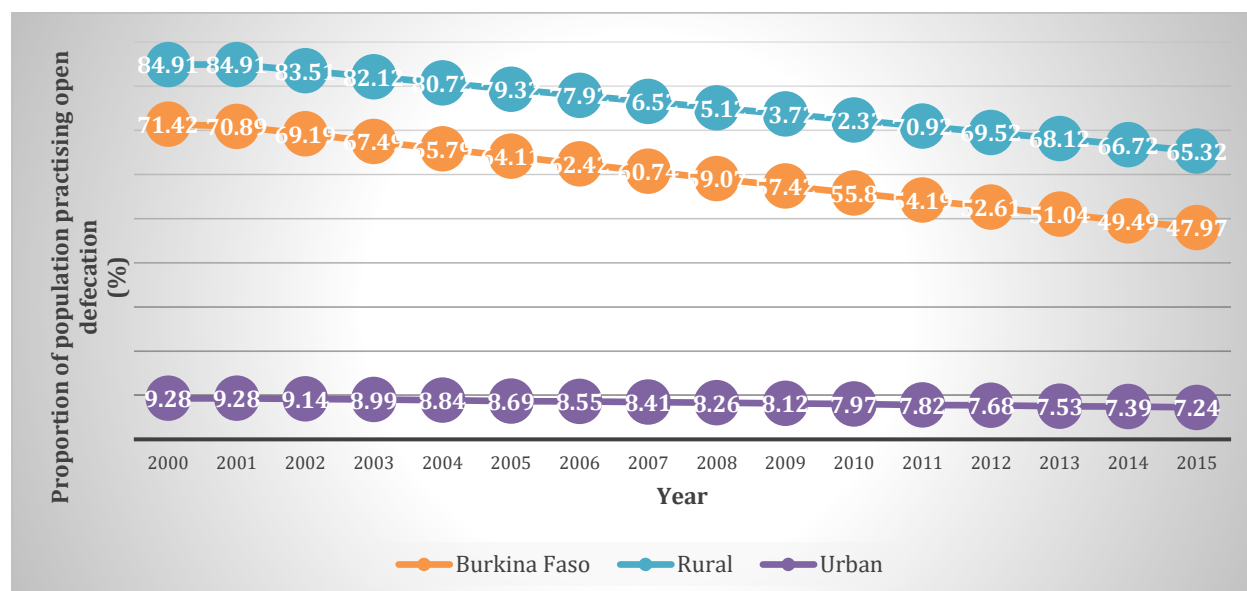


Figure 5: Trends in open defecation in Burkina Faso 2000-2015 (UN Stats, 2019)

The legal framework includes the Water Law No.002-2001. The relevant policies include the National Water Policy 2016-2030, the National Water Supply Program 2016-2030, the National Sanitation and Wastewater Program 2016-2030, the National Water and Sanitation Governance Program 2016-2030 and the National Plan for Dam Development 2016-2030.

Sustainable Management of Fisheries

Burkina Faso produced 21,000 metric tonnes of fish in 2017. Between 2000 and 2015, capture fisheries sector grew by 6.1 per cent while aquaculture grew by 30.8 per cent over the same time period (World Bank, 2017). Post-harvest losses in the fish sector amount to 60 per cent of total volumes sold by the wholesalers. The losses attributed to fish quality are caused by poor water quality, the capture of young fish, poor storage till landing and this is compounded by adverse weather conditions (FAO, 2016).

The small-scale fisheries sector is supported in terms of access to resources and markets. This includes an appropriate legal, regulatory, institutional and policy framework and other specific initiatives.

Illegal Fishing

On a scale of 1 to 5, Burkina Faso scored a 1 implying that there is very little implementation of a regulatory framework to combat illegal fishing (UN Stats, 2019). The country is not yet a member of the PSMA - Agreement of Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.

Terrestrial Ecosystems: Land, Biodiversity and Forests

Tree and Forest Cover

The land area covered by trees and forests in Burkina Faso is 19.6 per cent equivalent to 53,500 km² (UN Stats, 2019). But forest cover is on the decline, primarily being driven by agricultural expansion and demand for timber and related products and tenure insecurity (FAO/GEF, 2016).

Between 2000 and 2015, forests were being lost at an average annual rate of 1 per cent (World Bank, 2017). These issues are highlighted in **Error! Reference source not found., Error! Reference source not found. and Error! Reference source not found..** Forest restoration is key to ensuring food security through products such as firewood, food, fodder and medicine. The Great Green Wall for the Sahara and the Sahel Initiative (GGWSSI) is working with Burkina Faso and other countries in the region to increase tree cover with the aim of halting land degradation and promoting sustainable use of forests and other natural resources.

Relevant SDG 14 indicators

- 14.2.1:** Proportion of national exclusive economic zones managed using ecosystem-based approaches
- 14.4.1:** Proportion of fish stocks within biologically sustainable levels
- 14.5.1:** Coverage of protected areas in relation to marine areas.
- 14.6.1:** Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing.
- 14.b.1:** Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries

Relevant SDG 15 indicators

- 15.1.1** Forest area as a proportion of total land area
- 15.1.2** Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type
- 15.2.1** Progress towards sustainable forest management
- 15.3.1** Proportion of land that is degraded over total land area
- 15.5.1** Red List Index

Table 3: Forest area as a proportion of total land area (%) and net change rate (%) 2000-2015 (UN Stats, 2019)

Year	2000	2005	2010	2015
Forest as a % of total land area	22.83	21.74	20.64	19.55
Net change rate (%)		-0.97	-1.03	-1.08

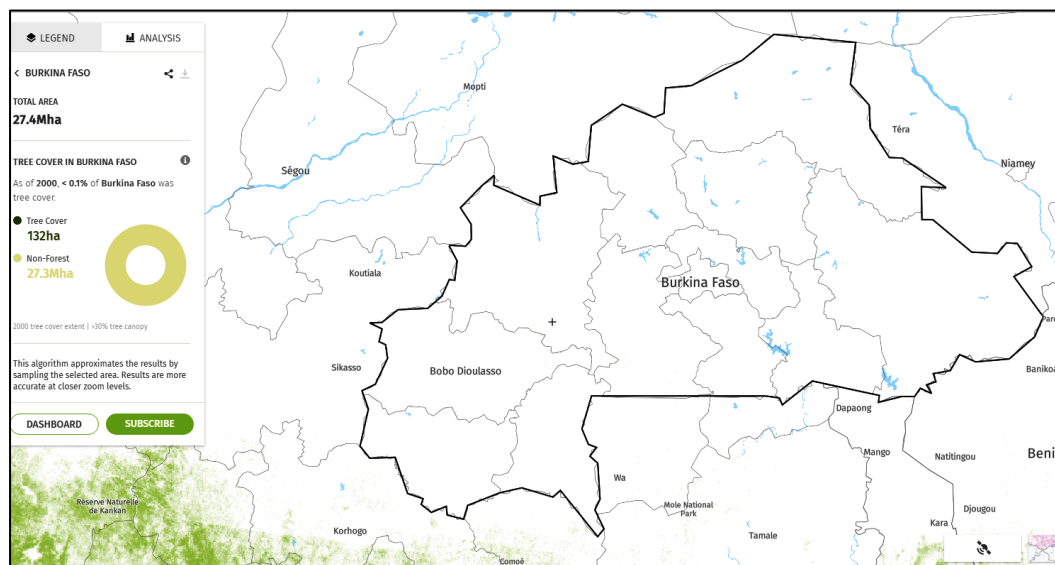


Figure 6: Burkina Faso with a 30%+ tree canopy (2010). Data source: Global Forest Watch

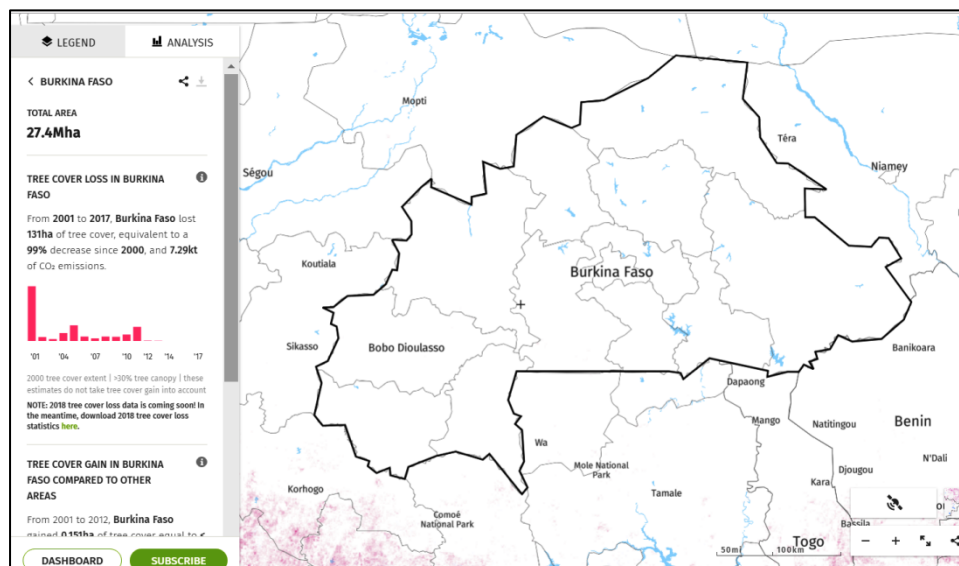


Figure 7: Tree cover loss in Burkina Faso 2001-2017. Data source: Global Forest Watch

Encouraging Sustainable Forest Management

Although the proportion of forest area under a long-term management plan has increased from 4.14 in 2000, to 6.33 in 2005 and 10.62 per cent in 2010, there has been a decline in forests under legal protection as shown in **Error! Reference source not found..**

Table 4: Proportion of forest area within legally established forest area (%) 2000-2015 (UN Stats, 2019)

Year	2000	2005	2010	2015
%	18.91	18.72	18.54	18.37

The legal and policy framework for the management of forests includes the Forest Policy 1995 and the Forest Code 2011 and the Joint Order no. 01-048 establishing a forest management fund. Other supporting policies include the National Policy for Land Management (2007), the National Policy for Classified Forest Development, the National Policy on Environmental Matters 2007 and the National Program for Forest and Fauna Resource Management, among others.

Protected Areas

Between 2000 and 2008, 50.18 per cent of freshwater biodiversity was covered by protected areas; increasing to 62.97 in 2009 where it remained till 2018. The proportion of terrestrial biodiversity covered by protected areas was 71.83 in 2018 up from 66.71 per cent in 2008 (UN Stats, 2019). See Figure .

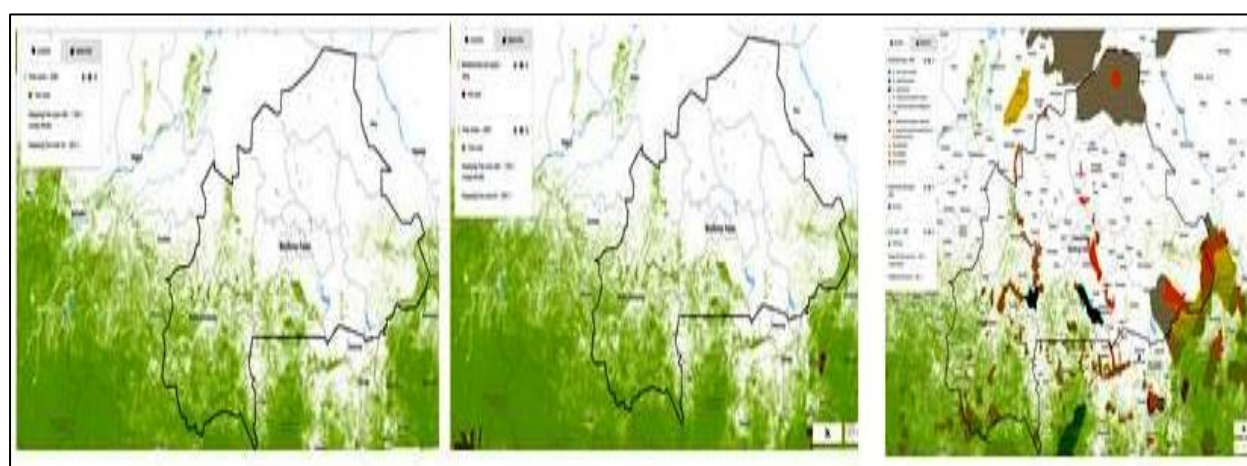


Figure 8: From left to right – Burkina Faso with a 10%+ tree canopy cover (2010), then with hotspots (2016) and then protected areas (2018) Data source: Global Forest Watch

According to the World Bank, threatened species in Burkina Faso include 22 species of birds, 9 species of mammals and 4 species, each, of plants and fish. (World Bank, 2017). The IUCN Red List of Threatened Species index is a measure of extinction risk ranging from 0 to 1. Burkina Faso's Red List Index has averaged 0.99 between 2000 and 2018 (UN Stats, 2019). This implies that most species are not expected to become extinct in the near future.



The White-backed Vulture (*Gyps africanus*) one of several species of Vulture that is critically endangered in Burkina Faso

Emerging Environmental Challenges

Waste Production and Management

Plastic, electronic and industrial wastes are among some of the types of hazardous wastes that are of concern. Burkina Faso is a party to the Basel Convention and the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa.

The legal framework in Burkina Faso for solid waste management includes regulations on municipal solid waste and the National Environment Act 1997. However, there are no regulations for plastic waste management.

Relevant SDG 12 indicators

12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment

12.5.1 National recycling rate, tons of material recycled

Climate Change

Burkina Faso's fragile environment is already vulnerable to climate change. The country is already experiencing debilitating droughts.

Burkina Faso is among the countries that have ratified and signed the United Nations Framework Convention on Climate Change and the Kyoto Protocol. The country has also localized these protocols by developing and implementing the following strategies: National Climate Change Response Strategy, 2010; National Climate Change Action Plan, 2013-2017; Burkina Faso Independent Nationally Determined Contribution (INDC) 2015; Burkina Faso National Adaptation Plan 2015-2030; The Climate Change Act, 2016; and the National Climate Change Framework Policy, 2016.

Relevant SDG 13 indicators

- 13.2.1** Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
- 13.3.1** Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula
- 13.3.2** Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions

Other opportunities to address climate change include creating awareness through formal and informal education opportunities. In 2016, officials in charge of curriculum development were trained to integrate climate change into the school curricula as part of the National Climate Change Learning Strategy on Climate Change 2017.

Relevant SDG 13 indicators

- 15.a.1 and 15.b.1** Official development assistance and public expenditure on conservation and sustainable use of biodiversity and ecosystems.
- 15.c.1 and 15.7.1** Proportion of traded wildlife that was poached or illicitly trafficked

Financing Natural Resources Management

Official development assistance to Burkina Faso has been fluctuating as shown in Figure 9. In 2016, the country received US \$74 million in development assistance for biodiversity (UN Stats, 2019).

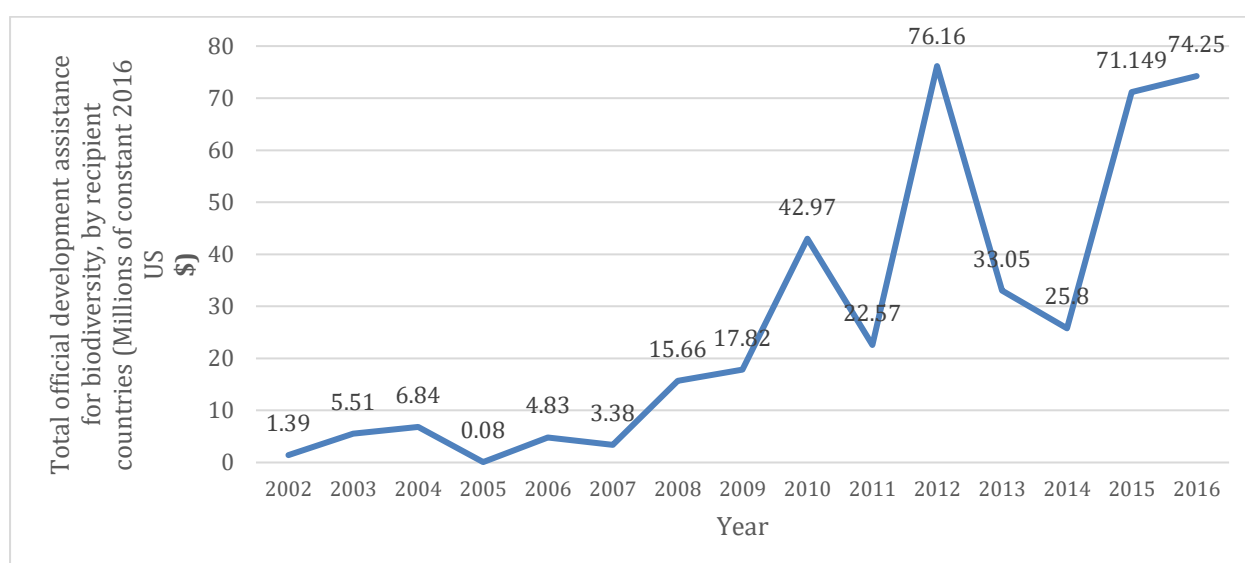


Figure 9: Total official development assistance for biodiversity (millions of constant 2016 US \$) 2002-2016 (UN Stats, 2019)

Supporting Actions to End Hunger

Sustainable Fisheries Management

The main policy document is the National Policy for Fisheries and Aquaculture in Burkina Faso 2014 and the sector is guided by the National Strategy for Sustainable Development of Fisheries and Aquaculture 2014. Other relevant laws for the sector include the Environment Code 1997 and the Forest Code 1997. The National Rural Sector Program 2016-2020 also highlights aspects of rural lands, water resources, forests, wildlife and fisheries resources with the aim of improving food and nutrition security.

Relevant SDG 15 indicators

15.4.1 Coverage by protected areas of important sites for mountain biodiversity.

Sustainable Management of Mountain Ecosystems

The coverage by protected of mountainous biodiversity has remained constant at 99.9 per cent from 2000 till 2018 (UN Stats, 2019).

Sustainable Management of Biodiversity

Burkina Faso has been a party to the Convention on Biological Diversity since 1993. It ratified the Cartagena protocol in 2003 and the Nagoya Protocol in 2014. The country is implementing its National Biodiversity Strategy and Action Plan 2011-2025 and has made progress in implementing the Aichi Biodiversity Targets.

Relevant SDG 15 indicators

15.6.1 Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits

15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species

15.9.1 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020

Burkina Faso adopted a policy on biotechnology and biosafety in 2004 and has developed regulations and guidelines to aid implementation. The National Biosafety Authority is mandated to provide biosafety oversight in the country. In addition, the National Biosafety Scientific Committee provides guidance on the socio-economic issues of biosafety while the National Biosafety Observatory ensures compliance with the laws.

Conserving Agricultural Biodiversity

It is well established that biodiversity plays a role in sustaining food systems and supporting ecological services. Burkina Faso has long undertaken activities to conserve, research and improve agricultural biodiversity with rice as the first crop placed under formal agricultural research in 1959. Burkina Faso ratified the International Treaty on Plant and Genetic Resources for Food and Agriculture in 2006. There is also a law on the National Strategy for Genetic Improvement. A Seed Law 2006, institutional framework and a national catalogue, active private sector association and a framework agreement on future public-private partnerships are in place. The role of the Institut de l'Environnement et de Recherches Agricoles (INERA) includes encouraging the use of improved seeds in the country. Other relevant laws include the Law No. 025-2017 on the protection of plants in Burkina Faso 2017.



Making of zai pits, a soil and water conservation measure, in Tougou village, Burkina Faso. Source : IUCN.ORG

Sustainable Water Resources Management

On a scale of 0-100, the degree at which Integrated Water Resources Management is undertaken is 63 (MWI, n.d). There is a legal and policy framework which guides the sector - the Water law 002/2001 and the Action Plan for Integrated Water Resources Management 2003.

Relevant SDG 6 indicators

- 6.5.1 Degree of integrated water resources management implementation (0-100)
- 6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation

Transboundary Water Resources Management

The transboundary water basins (rivers, lakes and aquifers) in Burkina Faso include the Volta river basin (shared with Bénin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Togo), the Niger basin (shared with Bénin, Burkina Faso, Cameroun, Côte d'Ivoire, Guinée, Mali, Niger, Nigeria, Chad) and the Comoé basin (shared by Burkina Faso and Côte d'Ivoire). The percentage of transboundary river and lake basins with an operational arrangement for water cooperation is 93.58 per cent (UN Stats, 2019). The policy framework to support this collaboration includes Decree No.2003-220: Action Plan for IWRM in Burkina Faso and the National Program for IWRM 2016–2030. Also being developed is a national water information system.

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