



World Food Programme

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WFP Critical Corporate Initiative: Climate Response Analysis for Adaptation

Burundi

Alliance



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



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Main authors: Courtney Jallo (Scriptoria Solutions), Katiana Bougouma (Scriptoria Solutions), Benjamin Schiek (The Alliance), Aniruddha Ghosh (The Alliance), Julian Ramirez-Villegas (The Alliance), Megan Mayzelle (Scriptoria Solutions), Harold Achicanoy (The Alliance), Alejandra Esquivel (The Alliance), Cesar Saavedra (The Alliance), Adam Savelli (The Alliance), Godefroy Grosjean (The Alliance).

Project leaders: Godefroy Grosjean and Peter Läderach

WFP team leaders: Pablo Arnal and Vera Mayer

Proofreading: Scriptoria Solutions

Design and layout: Katya Kuzi

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Key messages

The majority of Burundians are smallholder farmers facing serious constraints that will be further exacerbated under climate change. Most Burundian agricultural systems are highly vulnerable to climate hazards, including flooding, landslides, water deficit, drought, and erratic rainfall (both in terms of shifting precipitation patterns across time and space and the rapid coupling of drought and torrential rain in the same area). In the next 10 to 30 years, changes in precipitation patterns, increased temperatures, and protracted dry seasons are expected to have significant implications for productivity, crop suitability, and food security. Domestic demand for basic food products will continue to outpace supply resulting in increased import dependence for most key commodities, particularly livestock. Emergency response and resilience programming will be essential for preventing loss in the face of extreme events and for supporting smallholders in the creation of economic, environmental, social, and cultural assets. Reinforcing early warning system capacities and developing or improving supply chain logistics, transportation, and storage systems will play prominent roles in such efforts. Climate resiliency offers several leverage points for strengthening integration between various WFP activities. Potential programmatic and financial partnerships with other countries addressing similar climate challenges, local public and private actors whose work can be scaled up to forge more robust and efficient value chains, and national experts conducting on-the-ground research and development may prove particularly promising for activities that address the root causes of climate impact at a meaningful scale.

Introduction

The recent *Zero Hunger Strategic Review* of the World Food Programme (WFP) has identified climate change as one of several new and complex drivers of hunger. This novel threat to global nutritional security requires new approaches in terms of both design and resourcing. The international funding mechanisms providing resources for addressing climate change are often beyond the reach of existing expertise in the specific program design requirements of such funds. In response, the *Critical Corporate Initiative* seeks to broaden and enhance WFP program design capacities through collaboration between the Programme and Policy Development Department and the Partnerships and Advocacy Department. This effort will support the successful identification and pursuit of diversified financing opportunities to complement WFP's current resources.

As part of the Critical Corporate Initiative, WFP's *Climate and Disaster Risk Reduction Programmes Unit* (PRO-C), in collaboration with the *Research, Assessment and Monitoring Unit* (RAM), has engaged the *Alliance of Bioversity and CIAT* and the CGIAR to perform a climate risk analysis and recommend programs to address identified needs. The initiative was conducted in Burundi, Guinea, Guinea-Bissau, Haiti, Nepal, Niger, Pakistan,

Somalia, and Tanzania. In close coordination with WFP country office staff, the Alliance of Bioversity and CIAT identified livelihood zones (LHZs), key crops, priority outcomes, and key climate and non-climate hazards for each country. Analysis was conducted using a diverse methodology including desk review, climate change modeling, the *International Model for Policy Analysis of Agricultural Commodities and Trade* (IMPACT) assessment, stakeholder workshops, and key informant interviews (KIIs). The results are organized herein.

This report begins with an overview of Burundi's people, economy, geography, and wellbeing (Section IV). Section V presents the current and future threats of climate change and its impact on food production, distribution, trade, and broader national outcomes. Section VI examines the enabling and distortionary policy contexts surrounding climate and food in the country. Section VII analyses current WFP activities and how these may be optimized in light of the findings in Sections V and VI. Finally, Section VIII offers recommendations for partnerships that may enable and enhance the opportunities for programmatic optimization.



PART 1.

Country context

1.1 Environment

Burundi is a small, landlocked country in eastern Africa with steep, mountainous terrain and a humid tropical climate influenced by altitude. The nation's capital, Bujumbura, sits on Lake Tanganyika in the western Imbo floodplain near the border with the DRC. Upriver and to the north is Rwanda, bringing streamflow to Lake Rweru in the northeast. Tanzania borders Burundi to the east, sharing nearly 600 kilometers, is a major trading partner,¹ and high traffic zone for migration.²

Of the country's nearly 2.6 million hectares of land,³ approximately 2 million ha (80%) is used for agriculture,⁴ and 1.2 million ha (46.7%) is arable.^{5,1} Roughly 350,000 ha (17%) of the total agricultural land is under permanent crop production, of which only 23,000 ha (1%) is irrigated.⁶ 480,000 (24%) ha of agricultural land is under permanent meadows and pastures.⁷

The country has five eco-climatic regions.

From west to east, they are the lowlands of the Imbo Plain; the steep region of Mumirwa; the mountainous area of the Congo-Nile divide; the central plateaus; and the Kumoso and Bugesera depressions.⁸ The variation in altitudes, ranging from less than 800 m on the shore of Lake Tanganyika in the west to 2,600 m in the mountain ranges and gradually decreasing to 1,200 m in the east of the country, yield significant geoclimatic diversity across each region.⁹ Average annual precipitation varies from less than 900 mm in the western plain to more than 1600 mm in the mountainous zones, generally falling during the two wet seasons (February-May and September-December). June-August and a short period in January are usually dry. Average temperatures are higher in the depression areas (21-23°C) and lower in higher-elevation mountainous zones (16-18°C).¹⁰

Agriculture is at the heart of the Burundian economy, accounting for 40% of the national GDP, employing over 90% of the population, and comprising 30% of total export earnings.

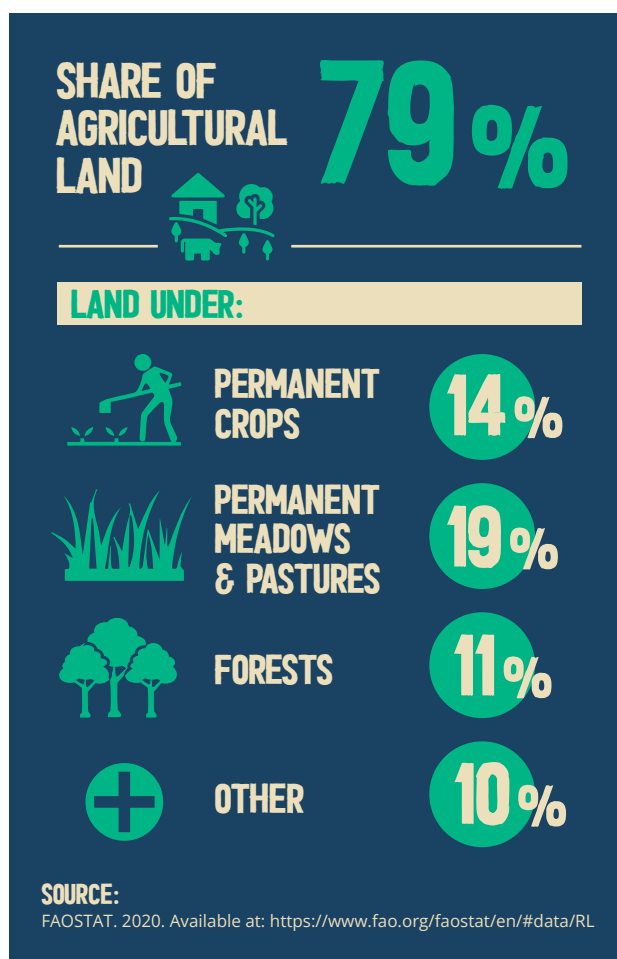
Burundi is a major exporter of coffee (21%), valued at US\$58 million, second only to gold exports (49%).¹¹ Other agricultural exports include tea (8%), wheat (4%), processed foods (1%), and tobacco (1%).¹²

Staple food crops include bananas, sweet potato, cassava, legumes, cereals (i.e., maize, rice, and wheat), vegetables, peanuts, livestock, and fish.¹³

These crops are overwhelmingly produced by smallholder farmers cultivating landholding parcels of 0.27 ha per household, on average.¹⁴ Livestock plays an important role in the Burundian farming system, contributing 12% to national GDP,¹⁵ and providing income, food, and manure used for fertilizer, as well as a traditional form of household savings for rural families.¹⁶ 70% of households own some type of small livestock, including sheep, goats, guinea pigs, poultry, rabbits, or cows.¹⁷ Fishing is an important industry providing food and jobs to more than 300,000 people around Lake Tanganyika, while aquaculture is increasingly more prevalent, with 153 ha of fishponds and three private aquaculture production stations.¹⁸

Intensive cultivation and grazing on highly eroding steep hillsides, coupled with high soil acidity and few agricultural inputs, results in low soil fertility and poor agricultural yields. Deforestation further exacerbates soil erosion.¹⁹ Burundi's forests are heavily exploited for firewood, charcoal, and construction materials;²⁰ increasingly converted to agriculture as population pressure competes for scarcer resources;²¹ and cover only 10.9% of the total land.²²

1 Agricultural land refers to the share of land area that is arable, under permanent crops, and under permanent pastures. Arable land includes land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. (<https://databank.worldbank.org/metadataglossary/world-development-indicators/series/AG.LND.AGRI.K2>)



(years of schooling), and earned income.

Burundi is one of the poorest countries in the world.²⁷ As of 2020, over 70% of Burundians live below the international poverty line of US\$1.90/day; almost two-thirds (64%) live below the national poverty line of US\$0.88/day²⁸; and 65% of the youth are unemployed.²⁹ In 2019, Burundi's Gender Inequality Index (GII)² value was 0.504, ranking it 124th out of 162 countries.³⁰

Burundi has experienced several periods of conflict that have crippled economic and agricultural development and exacerbated landscape-level challenges. An ethnically-driven civil war from 1993-2005 killed over 200,000 people and displaced over 550,000, followed by civil unrest and political crisis in 2015 that sent 400,000 Burundians into exile, both undermining economic activity and food security gains.³¹ In 2019, the country was rated -1.65 or 181st out of 191 countries on the Political Stability and Absence of Violence Index.³² Internal displacement from natural disasters or conflict increases pressure on Burundi's already short supply of land. Refugees returning from conflict have found others occupying their land,³³ resulting in frequent land disputes. They are relegated to less suitable drought- and flood-prone regions, further straining fragile host communities, marginal lands, and forests.

Access to services in Burundi is low. In 2018, 89% of the total population did not have access to electricity (with a significant range between

1.2 People

In 2019, Burundi ranked 185 out of 189 countries on the Human Development Index (HDI), with the majority (87%) of its 11.5 million people living in rural areas.²³ Burundi is the second-most densely populated country in Africa, with an average of 435 inhabitants

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