



Public Disclosure Authorized

CENTRAL AFRICAN REPUBLIC POVERTY ASSESSMENT 2023

A ROAD MAP TOWARDS POVERTY REDUCTION
IN THE CENTRAL AFRICAN REPUBLIC

October 2023



INSTITUT CENTRAFRICAIN DES
STATISTIQUES ET DES ETUDES
ECONOMIQUES ET SOCIALES



© 2023 International Bank for Reconstruction and Development / The World Bank
1818 H Street NW, Washington DC 20433, USA
Telephone: 202-473-1000
Internet: www.worldbank.org

Rights Reserved

This work is a product of the staff of The World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Rights and Permissions

The material in this work is subject to copyright. Because The World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for noncommercial purposes as long as full attribution to this work is given. Any queries on rights and licenses, including subsidiary rights, should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2625; e-mail: pubrights@worldbank.org.

ACKNOWLEDGEMENTS

This poverty assessment builds on an unparalleled data collection effort undertaken by the *Institut Centrafricain des Statistiques et des Etudes Economiques et Sociales* (ICASEES), supported by the *Ministère de l'Economie, du Plan, et de la Cooperation Internationale* and working with the World Bank, the United Nations High Commissioner for Refugees (UNHCR), and the Joint Data Center on Forced Displacement. The resulting 2021 *Enquête Harmonisée sur les Conditions de Vie des Ménages* (EHCVM) gathered vital information on household welfare in the Central African Republic (CAR), including for the country's displaced population. This report presents the analysis that has been undertaken since ICASEES officially launched CAR's poverty estimates in February 2023.

This poverty assessment was led by Gervais Chamberlin Yama (Statistician, EAWPV) and Jonathan Lain (Economist, EAWPV). The core team working on the poverty assessment comprised Harriet Kasidi Mugeru (Senior Data Scientist, DECAT), Walker Kosmidou-Bradley (Geographer, EAWPV), and Davy Mokosso-Zirimako (Consultant, EAWPV).

The report was prepared with close guidance from Ambar Narayan (Lead Economist, EAWPV) and Clarence Tsimpo Nkengne (Senior Economist, EAWPV) and under the overall direction of Johan Mistiaen (Practice Manager, EAWPV), Guido Rurangwa (Country Manager, AWMCF), and Elisabeth Huybens (Acting Country Director and Director for Strategy and Operations, AFWPV).

The analysis hinges on calculating the consumption aggregate and poverty line using data from the 2021 EHCVM. Initial work on these calculations was implemented by Martin Mba (Consultant, EAWPV) with guidance from Prospere R. Backiny-Yetna (Senior Economist, EAWPV). A crucial step in improving the calculations was the Quality Enhancement Review (QER), undertaken by Elizabeth Foster (Economist, EAWPV) and Rostand Tchouakam Mbouendeu (Temporary, EAWPV) and peer reviewed by Yele Batana (Senior Economist, EAWPV) and Aboudrahyme Savadogo (Economist, EAWPV).

Many sections of the report benefited from specific analytical inputs. Didérot Guy D'Estaing Sandjong Tomi (Economist, EAWM2) and Pierre Mandon (Economist, EAWM2) provided macroeconomic estimates and forecasts for Chapters 1 and 2. Sandra Segovia (Consultant, EPVGE) constructed the small-area poverty map for Chapter 2. Katja Vinha (Consultant, SAWW1) undertook the analysis of vulnerability in Chapter 3. Regina Plening (Economist, EFIAT) conducted the analysis linking household survey data and geospatial data in Chapter 6. Carla Solis Uehara (Consultant, SCCDR) provided additional support on the geospatial analysis included in Chapter 6.

The report was peer reviewed by Ruth Hill (Lead Economist, EPVGE), Obert Pimhidzai (Senior Economist, EAEPV), and Paul Absalon (Regional Senior Development Officer, UNHCR).

Editorial suggestions on the Executive Summary were provided by Melany Markham (Emergency Communication Specialist, UNHCR).

The report benefited from the contribution, during a read-through workshop, from various parts of the CAR government, including: la Présidence, l'Assemblée Nationale, la Primature, la Haute Autorité pour la Bonne Gouvernance, le Conseil Supérieur de la Communication, le Haut-Commissariat à la Décentralisation, le Conseil National de la Médiation, le Conseil Economique et Social, le Haut-Commissariat à la Jeunesse Pionnière, le Ministère chargé de l'Enseignement Supérieur, le Ministère chargé de la Santé, le Ministère chargé des Finances et du Budget, le Ministère chargé du plan et l'économie et de la coopération, le Ministère de l'Agriculture, la Cellule de Suivi des Réformes Economiques et Sociales, l'ICASEES, and le Plan de Relèvement et de Consolidation de la Paix en République centrafricaine (RCPCA).

The cover photo is credited to Vincent Tremeau.

The report was made possible through financial support from the Joint Data Center on Forced Displacement.

CONTENTS

Acknowledgements	3
Preface	7
List of acronyms and abbreviations	8
Executive Summary: A road map towards poverty reduction in the Central African Republic.....	10
ES 1. The Central African Republic faces severe development challenges	11
ES 2. Poverty in the Central African Republic is wide and deep.....	12
ES 3. Almost all Central Africans are just one shock away from poverty.....	15
ES 4. Monetary and non-monetary poverty overlap, deepening deprivation	15
ES 5. Agriculture is central to livelihoods, but it is not lifting people out of poverty	16
ES 6. Access to services and infrastructure must be improved to provide the bedrock for poverty reduction	17
ES 7. Policies to energize poverty reduction	17
1. Introduction: The Central African Republic faces severe development challenges	21
1. 1. Low growth and political turbulence have plagued the Central African Republic for decades.....	23
1. 2. Structural features of the Central African economy constrain inclusive growth.....	24
1. 3. Climate change, COVID-19, and price shocks present new threats to poverty reduction.....	30
1. 4. New, unprecedented microdata can help develop strategies for poverty reduction in the Central African Republic.....	31
1. 5. Structure of the poverty assessment.....	32
2. Poverty in the Central African Republic is widespread and deep, leaving many without enough food to eat.....	33
2. 1. Leveraging new survey data for welfare analysis in the Central African Republic.....	35
2. 2. How poverty is measured in the Central African Republic	36
2. 3. Poverty is widespread and deep in the Central African Republic, leaving more than half of the population without enough food	40
2. 4. The Central African Republic has one of the highest poverty rates in the world.....	42
2. 5. Overall inequality is moderate in the Central African Republic, but this belies large differences between different types of households.....	44
2. 6. Profiling the poor in the Central African Republic	45
2. 7. Poverty reduction is set to remain muted.....	52
2. 8. Considering poverty and vulnerability dynamics.....	53
Annex 2.1. Producing a poverty map for the Central African Republic.....	54
Annex 2.2. Additional poverty profile regression	57
Annex 2.3. Growth estimates and forecasts used for poverty projections.....	58

3. Almost all Central Africans are one shock away from falling into poverty	59
3.1. Using the variance of consumption to assess vulnerability.....	61
3.2. Virtually all Central Africans are vulnerable to overall poverty, and more than three-quarters are vulnerable to food poverty	63
3.3. The vulnerability profile mirrors the poverty profile.....	65
3.4. Vulnerability to household-specific shocks is higher than vulnerability to shocks that affect the whole community.....	67
3.5. Shocks are prevalent in the Central African Republic, especially those related to conflict.....	68
3.6. The strategies that Central Africans use to cope with shocks could trap them in poverty	72
3.7. Given widespread poverty and vulnerability, safety nets need to be enhanced	74
3.8. Considering non-monetary indicators to break poverty and vulnerability traps	76
Annex 3.1. Using the variance in consumption to identify vulnerability — the multi-level (or two-level hierarchical) approach	77
4. Monetary and non-monetary poverty overlap for many Central Africans, deepening their deprivation	80
4.1. Non-monetary welfare indicators can provide a more complete picture of poverty in the Central African Republic	82
4.2. Non-monetary deprivation is widespread in the Central African Republic, especially in rural areas	84
4.3. Around 8 in 10 Central Africans are multidimensionally poor	85
4.4. The overlap between different dimensions of poverty is sizeable across the Central African Republic	88
4.5. The interaction between monetary poverty and non-monetary poverty provides useful guidance for policymakers.....	90
4.6. Progress on non-monetary poverty has been mixed, and the Central African Republic's regions are diverging.....	92
4.7. From human capital to livelihoods.....	94
5. Agriculture is central to livelihoods in the Central African Republic, but it is not lifting people out of poverty	95
5.1. The Central African Republic has a young population, potentially ready to work.....	97
5.2. Labor is the main income source on which Central Africans rely.....	97
5.3. Working alone does not offer a clear pathway out of poverty.....	99
5.4. The jobs most able to lift Central Africans out of poverty are rare	101
5.5. Livelihood opportunities are not equal for women and men	104
5.6. Agriculture is the Central African Republic's main employer but it faces several key constraints.....	105
5.7. Providing the foundations for more productive livelihoods.....	111
6. Access to services and infrastructure must be improved to provide the bedrock for poverty reduction	112
6.1. Unique geospatial data illuminate access to services and basic infrastructure	114
6.2. Many Central Africans would struggle to reach schools and health facilities.....	114
6.3. Central Africans depend more on public than private facilities.....	118
6.4. While many Central Africans can reach water points, both the electricity supply and the road network may be lacking	120

6. 5. Lack of physical access to services is strongly related to human capital, a key building block of poverty reduction.....	122
6. 6. Limited physical access to services is associated with higher poverty.....	124
6. 7. Helping policymakers build pathways to poverty reduction.....	126
7. Policies to energize poverty reduction in the Central African Republic	127
7. 1. Since poverty is so widespread and deep, policy action is needed now	129
7. 2. Promoting peace, security, and good governance remains critical.....	129
7. 3. Poverty reduction hinges on igniting growth and creating fiscal space.....	130
7. 4. Human capital, agricultural productivity, and infrastructure — engines of inclusive growth and poverty reduction	131
7. 5. The very poorest Central Africans cannot wait and need urgent support from social safety nets now	135
7. 6. The importance of data for reinforcing accountability and guiding new policies	139
References	140

PREFACE

The fight against poverty and its consequences has been one of the Central African government's priorities for many years. This has featured in several different national strategies, following the 1995 World Summit for Social Development, with technical and financial support coming from the country's development partners.

Even if these plans, including the *Documents de Stratégie de Réduction de la Pauvreté* (DSRP), have produced some encouraging results, poverty has not been significantly reduced in the Central African Republic (CAR). Moreover, the country has not had a sustained experience of collecting and analyzing socioeconomic data to (i) conduct granular analysis of poverty and (ii) understand characteristics of multidimensional poverty.

Today, CAR's statistical landscape is significantly improved thanks to the creation of *l'Institut Centrafricain des Statistiques et des Etudes Economiques et Sociales* (ICASEES) and the sectoral statistical services, which have made it possible to produce data on the population's living conditions that are relevant, consistent, reliable, diversified, and up to date.

This report, CAR's first World Bank poverty assessment, provides an excellent illustration.

Presented in the form of a road map, the report comes at the right time to supply policymakers with the elements necessary to, on the one hand, better understand the fragile living conditions of a population facing recurrent crises, and on the other hand, determine the drivers of living conditions among the population and possible pathways for appropriate policy responses.

The state of living conditions in CAR, as described in this report, is concerning and risks compromising actions for harmonious development in the country. In 2022, CAR was placed 188th out of 191 countries according to the Human Development Index (HDI). This report itself shows that 68.8 percent of Central Africans live below the national poverty line and 9 in 10 people are at risk of falling into — or even further into — poverty.

To combat poverty, the government developed and launched, the *Relèvement et de Consolidation de la Paix en Centrafrique et du Cadre d'Engagement Mutuel* (RCPCA-CEM) in 2016.

Based on the lessons learned from implementing the RCPCA-CEM and using other information, notably the messages provided in this poverty assessment, the government will be able to develop its medium-term strategy through the *Plan Intérimaire de Développement* (PID-RCA) for the period 2024-2026. The strategy will emphasize promoting economic growth and reducing poverty, guaranteeing the continued improvement of a statistical system that helps design, implement, and evaluate economic and social policies.

I encourage all state actors and all development partners to read and learn from this document, to share their insights with the *Ministère de l'Economie, du Plan, et de la Coopération Internationale* through ICASEES, and to make good use of the report.

Signed,

Le Ministère d'Etat chargé de l'Economie
du Plan et de la Coopération Internationale



LIST OF ACRONYMS AND ABBREVIATIONS

ACLED	Armed Conflict Location and Event Data Project
AFCFTA	African Continental Free Trade Area
CAPI	Computer-Assisted Personal Interviewing
CAR	Central African Republic
CEMAC	Communauté économique et monétaire de l'Afrique centrale (Economic and Monetary Community of Central Africa)
CPI	Consumer Price Index
ECASEB	Enquête Centrafricaine pour le Suivi et Evaluation du Bien-être
EHCVM	Enquête Harmonisée sur le Conditions de Vie des Ménages (Harmonized Survey on Household Living Standards)
EITI	Extractive Industries Transparency Initiative
ENA	Enquête Nationale Agricole
FAO	Food and Agriculture Organization
FCS	Food Consumption Score
FEWS NET	Famine Early Warning Systems Network
GDP	Gross Domestic Product
GERICS	Climate Service Center Germany
GNI	Gross National Income
GRID3	Geo-Referenced Infrastructure and Demographic Data for Development
HCI	Human Capital Index
ICASEES	Institut Centrafricain des Statistiques et des Etudes Economiques et Sociales (Central African Institute of Statistics and Economic and Social Studies)
IDMC	Internal Displacement Monitoring Centre
IDP	Internally Displaced Person
ILO	International Labour Organisation
IMF	International Monetary Fund
IOM	International Organization for Migration
IRIS	International Recommendations on Internally Displaced Person Statistics
KPCS	Kimberley Process Certification Scheme
MFMOD	Macro-Fiscal Model
MICS	Multiple Indicator Cluster Survey
MPI	Multidimensional Poverty Index

MPM	Multidimensional Poverty Measure
ND-GAIN	Notre Dame-Global Adaptation Index
NGO	Non-Governmental Organization
NPK	Nitrogen, Phosphorus, and/or Potassium
OCHA	Office for the Coordination of Humanitarian Affairs
ODA	Overseas Development Assistance
OEC	Observatory of Economic Complexity
OPHI	Oxford Poverty and Human Development Initiative
PACAD	Projet d'Appui aux Communautés Affectées par le Déplacement
PPP	Purchasing Power Parity
RCPCA	Plan de Relèvement et de Consolidation de la Paix en République centrafricaine
TFP	Total Factor Productivity
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
USAID	United States Agency for International Development
USCRI	United States Committee for Refugees and Immigrants
USD	United States Dollars
USDA	United States Department of Agriculture
WASH	Water, Sanitation, and Hygiene
WDIS	World Development Indicators
WFP	World Food Program
XAF	Central African CFA franc
XGBOOST	Extreme Gradient Boosting

EXECUTIVE SUMMARY: A ROAD MAP TOWARDS POVERTY REDUCTION IN THE CENTRAL AFRICAN REPUBLIC

This report — the Central African Republic's (CAR's) first ever poverty assessment — draws on unparalleled microdata to propose practical strategies for lifting Central Africans out of poverty. Against the backdrop of a wide range of development challenges — including persistent low growth, conflict and displacement, and the increasing threats posed by climate change — CAR urgently needs policies for reducing poverty. This report draws primarily on the 2021 *Enquête Harmonisée sur le Conditions de Vie des Ménages* (EHCVM), the first household survey suitable for poverty measurement conducted in CAR in more than a decade, to try and guide such policies. The report provides CAR's headline poverty and inequality statistics, using the EHCVM's unique sampling strategy to cover internally displaced persons (IDPs). The analysis goes beyond considerations of monetary poverty alone, assessing the extent of non-monetary deprivation in CAR, examining constraints on human capital development, and exploring the role that livelihoods — especially in agriculture — can play in lifting people out of poverty. Using geospatial data, the results are also linked to indicators of physical access to schools and health facilities as well as key elements of basic infrastructure. This Executive Summary highlights the poverty assessment's key findings and outlines the policies that can kickstart CAR's pathway towards poverty reduction.

ES 1. THE CENTRAL AFRICAN REPUBLIC FACES SEVERE DEVELOPMENT CHALLENGES

Low growth and political turbulence have left CAR with amongst the lowest levels of GDP per capita in the world. CAR has experienced as many as seven coups d'état attempts, of which five have resulted in a change in power, with just two democratic transitions, since gaining independence in 1960 (Kouame, 2022). These have not proved to be fertile conditions for growth. Gross domestic product (GDP) per capita today is less than two-thirds what it was in the 1960s. The sharpest sustained drop in GDP per capita coincided with the outbreak of political-military conflict at the end of 2012. By 2021, CAR had the lowest GDP per capita of any country in the *Communauté économique et monétaire de l'Afrique centrale* (CEMAC, Economic and Monetary Community of Central Africa) at 371 USD, in 2015 prices. This is about one-fifth of the average for the Western and Central Africa region and about one quarter of the average for Sub-Saharan Africa.

At least eight structural features of the Central African economy constrain the inclusive growth needed for poverty reduction. In particular:

1. CAR's geography may curtail growth: it is landlocked, making trade more difficult, and it is sparsely populated — covering some 623,000 square kilometers with a population of 6.1 million — meaning some remote rural dwellers may struggle to reach services and markets while farms or other businesses may have limited markets to which to sell.
2. Conflict — fueled partly by competition over natural resources — persists, leading directly to fatalities and gender-based violence, disrupting livelihoods and investments in physical and human capital, and trapping people in poverty across generations.
3. Conflict begets displacement: currently there are around 700,000 refugees from CAR in other countries and around 500,000 people are displaced internally within CAR itself with the unfolding situation in Sudan potentially destabilizing the region further (UNHCR, 2023); displacement can have profound impacts on monetary and non-monetary poverty, even with ongoing multilateral efforts to protect IDPs.¹
4. CAR is endowed with extensive natural resources, but their mismanagement can fuel conflict and many are exported before value can be added — and hence processing and manufacturing jobs created — in country.
5. The economy is highly dependent on agriculture both in terms of GDP and livelihoods, but agricultural productivity is weak.
6. CAR is fiscally constrained, with public spending being highly dependent on aid from other countries, which may fluctuate.
7. The institutional and regulatory framework hinders competition and in turn the private investment needed for growth, job creation, and poverty reduction.
8. Investment in two fundamental engines of inclusive growth and poverty reduction — human capital and infrastructure — is low.

¹ For global evidence on the links between poverty and conflict, see Corral, Irwin, Krishnan, Mahler, and Vishwanath (2020). See Pape and Sharma (2019) for evidence on poverty and displacement.

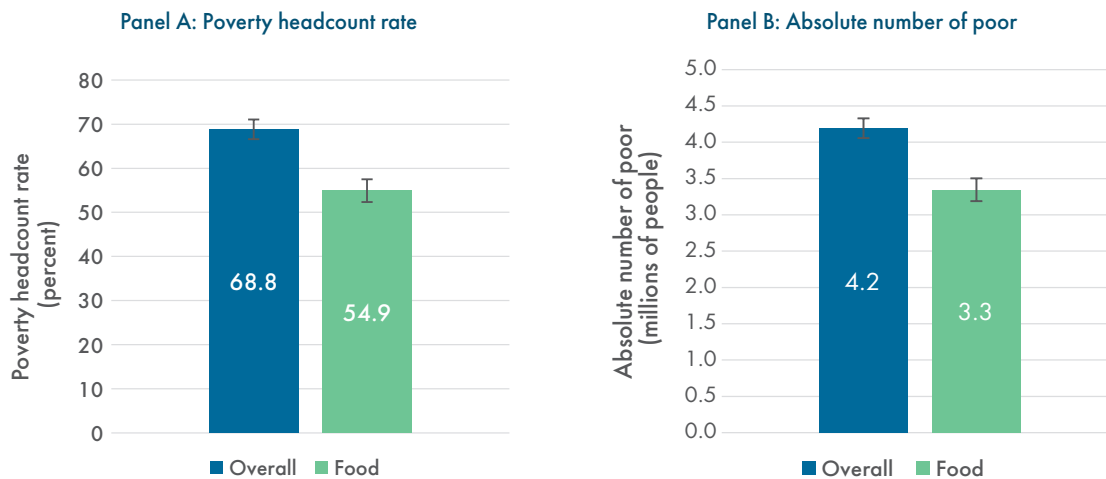
CAR is also confronting climate change, the effects of COVID-19, and price shocks. Rainfed agriculture — CAR’s most important livelihood activity — is already being disrupted by the effects of climate change, exemplified by flooding in 2012, 2017, and 2019. Projections suggest that extreme weather events could become even more frequent and intense. Additionally, CAR was not spared the effects of COVID-19, especially as the government needed stringent containment measures: this included closing international borders, curtailing exports. Finally, there have been large price spikes for key staple foods following the outbreak of the conflict between Russia and Ukraine, which have been aggravated by fuel shortages in 2022 and early 2023.

ES 2. POVERTY IN THE CENTRAL AFRICAN REPUBLIC IS WIDE AND DEEP

Against the backdrop of CAR’s severe development challenges, the 2021 EHCVM allows poverty to be measured according to international best practices, including for displaced populations. In 2021, the *Institut Centrafricain des Statistiques et des Etudes Economiques et Sociales* (ICASEES) implemented the EHCVM, collecting detailed data on household consumption. The EHCVM’s unparalleled sampling strategy explicitly covered IDPs in camps. Welfare is measured by adding up what households consume: this “consumption aggregate” is deflated across space and time so it can be compared with a single poverty line. The national poverty line is constructed according to a “cost of basic needs” approach, based on how much it would cost to buy 2,300 calories per person per day, then adding other essential non-food goods and services, such as clothing and housing. This approach produces an overall national poverty line of 263,485 XAF per person per year, or about 775 USD 2017 Purchasing Power Parity (PPP) per person per year (or 2.12 USD 2017 PPP per person per day). The corresponding food poverty line is 197,990 XAF per person per year, or 582 USD 2017 PPP per person per year: this shows how much it would cost for households to meet the 2,300 calorie per person per day threshold if they spent *all* of their money on food.

Poverty is widespread and deep in CAR, leaving more than half of the population without enough food. In 2021, some 68.8 percent of the population — 4.2 million people out of a population of 6.1 million — were living below the overall national poverty line (Figure 1). About 54.9 percent of the population (3.3 million people) were living below the food poverty line, meaning they could not feed themselves adequately, even if they devoted their entire household budget to food. Food poverty is a particularly severe form of deprivation, which may be associated with limited agricultural productivity and low-quality infrastructure preventing food from reaching the right places — issues that are explored in detail in this report. Simple projections that combine sectoral GDP growth forecasts with the EHCVM data suggest this situation is unlikely to change much in the next five years with the current mix of policies.

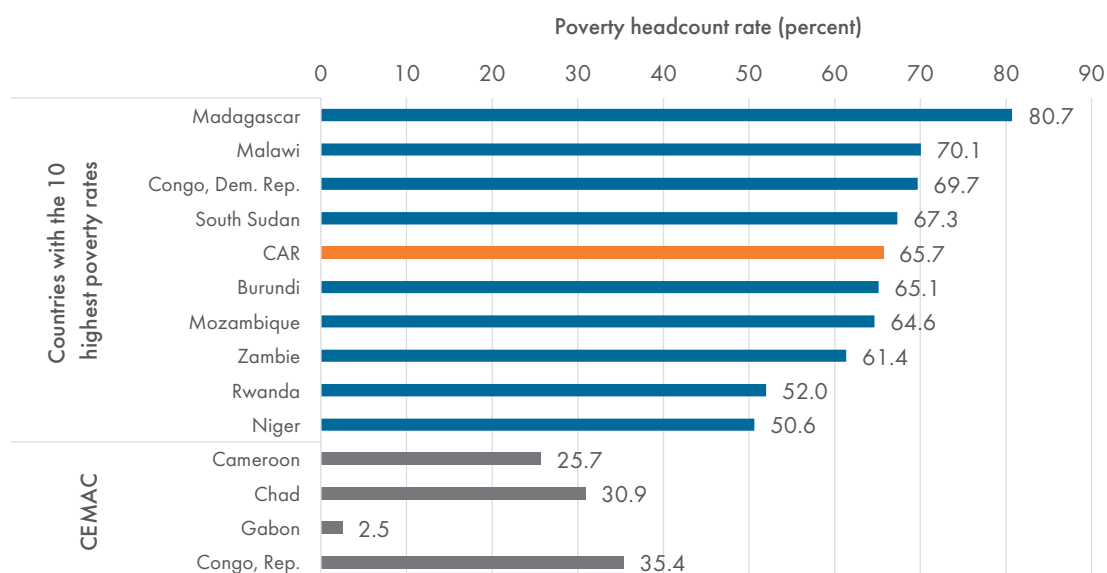
FIGURE 1. POVERTY HEADCOUNT RATE AND ABSOLUTE NUMBER OF POOR IN THE CENTRAL AFRICAN REPUBLIC ACCORDING TO OVERALL NATIONAL POVERTY LINE AND NATIONAL FOOD POVERTY LINE



Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Food poverty line is 197,990 XAF per person per year. Source: 2021 EHCVM and World Bank estimates.

CAR has one of the highest poverty rates in the world. For internationally-comparable poverty numbers, the consumption aggregate is deflated temporally, but not spatially, then adjusted using the Consumer Price Index (CPI) and PPPs to account for inflation and for different living costs in different countries. About 65.7 percent of Central Africans live below the international poverty line of 2.15 USD 2017 PPP according to this approach (Figure 2). This means that CAR has the highest poverty rate in CEMAC and only four countries — all in Sub-Saharan Africa — have higher poverty rates.

FIGURE 2. POVERTY HEADCOUNT RATE AT THE INTERNATIONAL POVERTY LINE IN THE CENTRAL AFRICAN REPUBLIC AND COMPARATOR COUNTRIES



Note: CEMAC = *Communauté économique et monétaire de l'Afrique centrale* (Economic and Monetary Community of Central Africa). Consumption is temporally deflated and compared with the international poverty line of 2.15 USD 2017 PPP per person per day. Poverty estimates shown are from the latest available survey year for each country in the World Bank Poverty and Inequality Platform. The oldest data shown are for the Republic of Congo, which come from 2011. Uzbekistan would have one of the highest poverty rates were it included, but its latest poverty estimates come from 2003 so it is excluded.
Source: 2021 EHCVM, World Bank Poverty and Inequality Platform, and World Bank estimates.

There are large spatial differences in poverty; Bangui is better off than the rest of the country. CAR's Gini coefficient is 39.9 — roughly in the middle of CEMAC countries — but the Gini masks large differences between different parts of the country. There is a strong urban-rural divide in poverty, largely because urban areas include Bangui: the poverty rate is 40.1 percent in the nation's capital, much lower than the average for all other regions combined, at 73.3 percent. Similar patterns emerge for food poverty. Outside of Bangui, there are pockets of communes where poverty is highly concentrated. This raises policy questions around spatial inequality and decentralization.

Displacement is associated with poverty. The poverty rate for those displaced Central Africans living in camps is 76.3 percent; higher than non-IDP households (68.6 percent) and households outside of camps that host IDPs (68.0 percent). This is consistent with those living in camps facing more shocks and responding with negative coping strategies, having lower human capital outcomes, and having more limited livelihood opportunities than the rest of the population.

Central Africans are more likely to be poor if they live in larger households whose heads are less educated and primarily engaged in agriculture. This demonstrates the key association between fertility and poverty, also observed in other countries, and underlines the importance of bolstering human capital and livelihood opportunities.

ES 3. ALMOST ALL CENTRAL AFRICANS ARE JUST ONE SHOCK AWAY FROM POVERTY

Vulnerability to poverty is ubiquitous in CAR. Modelling the variance in household consumption shows that 88.6 percent of Central Africans are vulnerable to poverty, meaning that they have at least a 50 percent chance of being below the national poverty line in the next two years. Some 77.2 percent of Central Africans are also vulnerable to food poverty. Virtually all IDPs living in camps are vulnerable to both overall and food poverty. Given how widespread these vulnerabilities are, it is difficult to create targeted poverty-reducing initiatives.

Without social safety nets, Central Africans respond to shocks with negative coping strategies that could hurt their long-term welfare. About 9 in 10 people lived in a household affected by some type of negative shock in the three years prior to the 2021 EHCVM. Security shocks were the most common, affecting about 6 in 10 Central Africans. Almost 3 in 10 Central Africans suffered climate-related shocks, including floods and droughts. The coverage of social safety nets is dwarfed by the scale of poverty and vulnerability: just 1.0 percent of Central Africans lived in a household receiving government cash transfers and 14.3 percent lived in a household receiving support in the form of food. As a result, Central Africans have adopted coping strategies — including reducing their food consumption — which could weaken investments in physical and human capital.

ES 4. MONETARY AND NON-MONETARY POVERTY OVERLAP, DEEPENING DEPRIVATION

Some non-monetary deprivations are even more widespread than monetary poverty. Non-monetary poverty indicators capture key elements of welfare that money cannot necessarily buy, including access to education and basic infrastructure — water, sanitation, and electricity. These indicators matter for human capital, which has long-term, intergenerational consequences for poverty reduction. The net secondary school enrolment rate was just 16.3 percent in 2018. In 2021, 69.6 percent of Central Africans were living without at least limited-standard sanitation and as many as 87.7 percent lacked access to electricity. Progress on non-monetary markers of welfare has been mixed and there has been substantial divergence between Bangui and the rest of the country.

Most — but not all — non-monetary poverty indicators are worse for IDPs living in camps, compared to both non-IDP households and IDP out-of-camp households. Educational enrolment and attainment and access to electricity are lower for IDPs living in camps. Yet the opposite is true for water and sanitation access, which is generally better in camps. While living in camps is generally associated with higher poverty there are certain services that can be more easily and directly supplied there.

Monetary and non-monetary deprivations overlap significantly, so countervailing interventions could be “bundled up”. This means simultaneously addressing different constraints on education and health, basic infrastructure, and monetary poverty for the same households. Moreover, developing human capital and basic infrastructure could reduce monetary poverty. Electricity access is very low in CAR, but the monetary poverty rate is 34.6 percentage points lower for those with electricity access compared to those without it — this echoes global evidence suggesting that electrification supports livelihoods and asset accumulation. The overlaps between monetary poverty and deprivations in terms of education and basic infrastructure

also underline the scale and depth of multidimensional poverty in CAR. Developing human capital alongside other initiatives to reduce monetary poverty could have transformative effects on households, helping them escape long-term poverty traps. This matters *now* as low enrolment and learning, stunting, and other health challenges directly affect Central African children, who hold the key to the country's future potential.

ES 5. AGRICULTURE IS CENTRAL TO LIVELIHOODS, BUT IT IS NOT LIFTING PEOPLE OUT OF POVERTY

Finding productive livelihoods to harness the potential of CAR's young population is crucial; this is not so much a question of whether people work, but rather what they do. More than three-quarters of CAR's population are aged less than 30 years, so millions of Central Africans are — or will soon be — of working age. Investing in human capital alone will not be enough: these young people will need commensurate livelihood opportunities for CAR to take advantage of its demographic dividend. By contrast, young people without productive livelihoods can be drawn into armed groups, further fueling conflict and violence (Cramer, 2010). Working alone does not offer a clear pathway out of poverty. In 2021, about three-quarters of working-age Central Africans were working across virtually all deciles of the real consumption distribution. Poverty reduction depends on finding productive livelihoods.

Agriculture is by far the most common activity, but non-agricultural activities are more likely to lift Central Africans out of poverty. Among those Central Africans who were working in 2021, 69.2 percent were primarily engaged in agriculture. Yet non-agricultural jobs were disproportionately concentrated among those in higher deciles of the consumption distribution. Similarly, just 6.6 percent of working-age Central Africans had engaged in wage work in the previous seven days, even though wage jobs were more common among the non-poor. Non-agricultural, wage-employment jobs were also particularly rare for Central African women, highlighting gender disparity in CAR's livelihood opportunities.

Constraints on agricultural productivity — including lack of access to key inputs and markets — are holding back Central Africans' livelihoods. Large-scale structural transformation, whereby workers transition from agriculture to services or industry, is still years or decades away for CAR, so policy needs to support agricultural productivity and increase farmers' incomes in the meantime. This has direct implications for reducing food poverty. Moreover, eventually unleashing structural transformation in the future depends on raising agricultural productivity. Rainfed agriculture is prevalent throughout CAR, with cassava, maize, rice, sorghum, and millet comprising the main staple crops — these activities are potentially vulnerable to climate-related shocks. Agriculture's total factor productivity (TFP) appears to be limited by low use of fertilizers, irrigation, and tools, although land itself does not appear to be a binding constraint. Many farms employ labor from outside the household, demonstrating how the benefits of boosting agricultural productivity could spill over to other workers. Most farmers also sell at least some of what they produce, but they report that roads and access to markets hold them back. This emphasizes the importance of investing in infrastructure to improve farmers' access to markets for enhancing agricultural productivity and bolstering livelihoods.

ES 6. ACCESS TO SERVICES AND INFRASTRUCTURE MUST BE IMPROVED TO PROVIDE THE BEDROCK FOR POVERTY REDUCTION

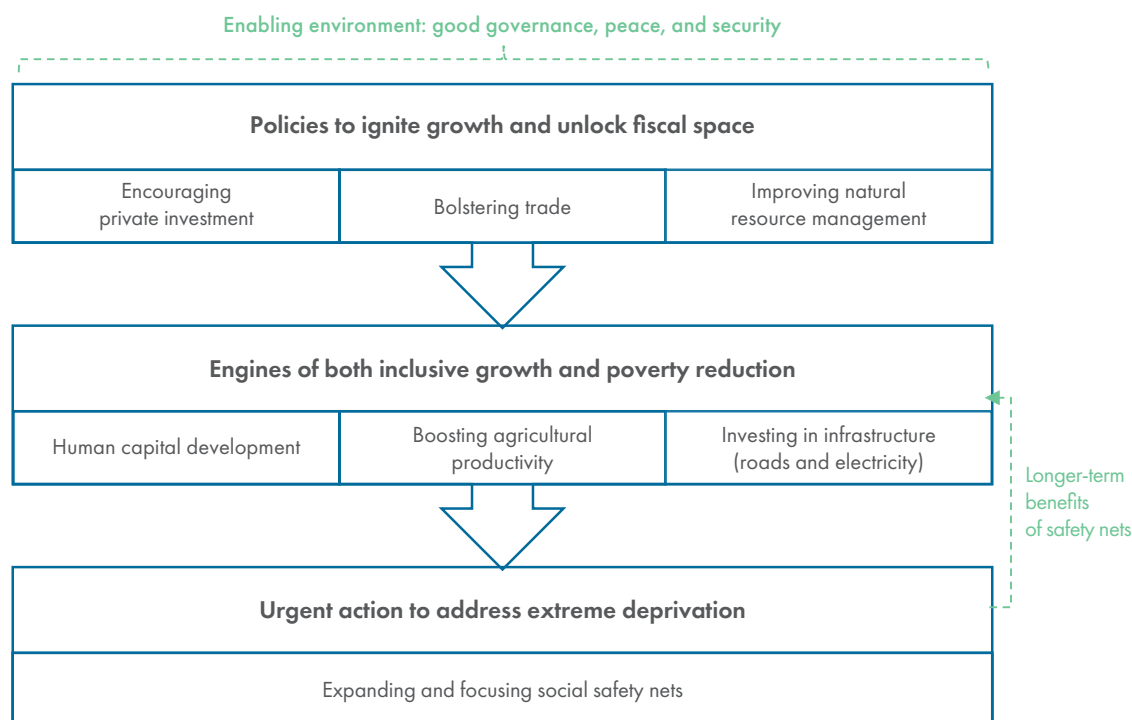
Many Central Africans live prohibitively far away from schools, especially in remote and rural areas and especially at the secondary level; this is associated with lower enrolment and higher poverty. The evidence on non-monetary poverty and livelihoods demonstrates the importance of developing human capital. However, physical access appears to be a constraint, both for health facilities and, in particular, for schools. Geospatial data from CAR's cartographic census reveal that about 30.0 percent of primary-school-age children and 54.8 percent of secondary-school-age children live more than one hour away — on foot — from their nearest primary and secondary school respectively. Combining this with the 2021 EHCVM data shows that low physical access is directly associated with low enrolment: children aged 6-11 in households that are 1-2 hours' walk away from primary schools are about 18.8 percentage points less likely to attend primary school than those living less than one hour away, even after controlling for key household and location characteristics. Improving physical access to schools would not entirely eliminate non-enrolment: other factors that constrain school attendance including perceived low quality, affordability, and the opportunity cost of having household members contribute less to livelihoods — in the short term — still matter. Yet investing in schools and the infrastructure required to reach them clearly offers one way for policymakers to boost human capital outcomes.

The supply of electricity and the quality of roads represent severe deficiencies in CAR's infrastructure. Electricity is arguably the standout non-monetary deprivation, with just 12.3 percent of Central Africans having access to it. This is directly reflected in cross-country statistics on per capita electricity generation and final consumption, which are about 10 times higher in neighboring Cameroon — and even higher in Gabon and the Republic of Congo — than in CAR. Similarly, the road network does not reach all Central Africans and needs upgrading. About 1 in 10 Central Africans would need to walk more than one hour to even reach a primary, secondary, or tertiary road. Once they have got there, it may take several hours to reach an urban center of any kind: just 2.5 percent of CAR's road network is paved. Investing in infrastructure could bolster many channels of poverty reduction, including by allowing food and other goods to move around the country, building the government's administrative reach so that it can implement social safety nets, helping people access health and education facilities, and alleviating constraints on market access.

ES 7. POLICIES TO ENERGIZE POVERTY REDUCTION

A broad mix of policies is urgently required for poverty reduction. First, promoting peace, security, and good governance remains critical for creating the enabling environment for pro-poor policies (Figure 3). Second, since CAR cannot afford poverty-reducing policies without more growth and fiscal space, reforms to encourage private investment, bolster trade, and improve natural resource management are essential. Third, CAR will need to invest in three engines that simultaneously drive both inclusive growth and poverty reduction: human capital, agricultural productivity, and infrastructure. Yet the 3.3 million Central Africans who are food poor cannot wait for these policies, whose full effects may take many years, to work. Therefore, fourth, social safety nets should be expanded, directed to the most deprived, and "bundled up" with programs to support human capital and livelihoods to maximize impact whilst remaining budgetarily feasible.

FIGURE 3. POLICIES TO ENERGIZE GROWTH AND POVERTY REDUCTION IN THE CENTRAL AFRICAN REPUBLIC



Source: World Bank.

Peace, security, and good governance remain critical for poverty reduction. Notwithstanding the complex causal links between conflict, displacement, livelihoods, and poverty, conflict appears to have hampered inclusive growth and poverty reduction in CAR. Helping CAR overcome its fragility trap hinges on addressing conflict's root causes, especially by improving governance and management of natural resources. Poverty and inequality reduction could also help curtail conflict by raising the opportunity cost of participating in armed groups and building social cohesion.

Three streams of macroeconomic reforms could accelerate the growth needed to unlock poverty reduction: (1) encouraging private investment, (2) bolstering trade, and (3) improving natural resource management. Cross-country evidence suggests that growth is a necessary condition for poverty reduction — it can create the livelihood opportunities that lift people above the poverty line. Growth is also needed to increase the government's fiscal space to pay for poverty-reducing policies. Three types of macroeconomic reforms could help do this.² First, CAR could attract more private investment by enabling market-based competition, facilitating business start-up, and making it easier to register property; the specifics of these policies should be designed in consultation with private sector representatives and organizations. Second, CAR can try to boost trade by investing in the infrastructure needed to reduce logistical costs, streamlining customs procedures, and coordinating with other countries through both multilateral structures — such as CEMAC or the African Continental Free Trade Area (AfCFTA) — or bilateral agreements. Third, CAR should strengthen

² A full analysis of the reforms needed to ignite growth is presented in the World Bank's Country Economic Memorandum for CAR (see World Bank (2022)).

the management of its natural resource wealth, by processing more of its primary products in country and sustaining efforts to improve the institutional and regulatory framework for extractive industries. Alongside these growth-oriented reforms, the government's fiscal position may also benefit from improving domestic resource mobilization by creating tools to increase tax recovery, reviewing tax exemptions, building capacity for customs and tax administration, and broadening the tax base.

Three vital engines can simultaneously drive inclusive growth and poverty reduction; first, CAR must build human capital. CAR's young population presents the country with a huge opportunity. Investing in young people and especially young children can yield very high returns, as it has transformative effects on the rest of people's lives and on future generations. Education is clearly associated with poverty reduction in CAR, as the overlaps between education indicators and monetary poverty indicators suggest. Geospatial data indicate that improving physical access to schools — by building more schools or improving the infrastructure required to reach existing schools — is likely to increase enrolment. It will also be important to enhance learning by investing in inputs such as teachers, classroom facilities, and textbooks, and by ensuring education is directed towards the livelihood opportunities Central Africans are likely to encounter. Yet human capital goes beyond education and learning, and enhancing health and water, sanitation, and hygiene (WASH) outcomes will also be vital. Multiple constraints on human capital could be addressed at the same time by combining interventions. For example, direct support for education and health — through targeted investments in schools and health facilities or by providing nutrients, medication, or training to household members — could be “bundled up” with cash or other in-kind transfers disbursed through social safety nets to maximize effectiveness.

Second, boosting agricultural productivity offers the most direct way to enhance livelihood opportunities. Since so many Central Africans work in agriculture and structural transformation is likely to take years or decades, boosting agricultural productivity is a critical priority. Agriculture could even help reduce conflict by absorbing demobilized combatants. In part, boosting agricultural productivity hinges on ensuring farms have access to the inputs — including seeds, tools, and fertilizers — that they need, particularly for improving resilience to climate-related shocks. Expanding access to microfinance or other forms of credit could help farmers buy the inputs they need while facilitating trade would ensure such inputs can enter CAR in the first place. Farmers also need better market access for what they produce, which will rest on upgrading infrastructure and on macroeconomic policies that support trade of agricultural goods. Raising agricultural productivity could also release people to work in services and industry, spurring structural transformation, and the inclusive growth required to sustain poverty reduction.

Third, CAR should upgrade its bedrock of infrastructure. Electrification could promote several channels of poverty reduction: these include increasing productivity in livelihood activities, improving the service provided by education and health facilities, and supporting mobile cellular penetration, which would in turn increase the flow of information between markets and allow the government to extend its administrative reach for other poverty-reducing policies. Similarly, investing in roads could allow goods — including much-needed food — to move within CAR, facilitate disbursements of social assistance, improve physical access to health and education facilities, and boost farmers' market access to raise their productivity. Vitality, investing in infrastructure could help address spatial inequality, especially between Bangui and the rest of the country. This would not only reduce poverty outside the nation's capital but could also promote social cohesion and curb conflict.

Since other policies may take time to lift people out of poverty, social safety nets should be expanded, directed to the very poorest Central Africans, and delivered in ways that maximize short- and long-term benefits. The 3.3 million food poor Central Africans cannot wait for medium-term policies to take effect. Social safety nets can have more immediate impact: the idea is to ensure that households can consume at least a basic minimum level of food. Since the coverage of social safety nets is currently dwarfed by the extent of poverty and vulnerability in CAR, expanding them is key. However, efforts to expand to reach all poor Central Africans will quickly hit binding fiscal constraints. As such, prioritization is also essential: social safety nets should use practical targeting methods to try to reach those Central Africans facing more extreme forms of deprivation — namely food poverty, and if fiscal resources are inadequate, prioritizing among the food poor. This could include targeting households with young children who could benefit from investments in their human capital or those affected by conflict and displacement. The types of benefits that households receive should be chosen to maximize both short- and long-term gains by “bundling up” transfers with other interventions to build human capital. For example, cash or food transfers could be combined with medication, nutrients, information on good health practices, and localized investments in schools and clinics to support early childhood development or assets and training to support livelihoods. Existing programs in CAR already illustrate the benefits of combining interventions, be that public works alongside provision of assets — in the Londö program — or cash transfers alongside local investments in infrastructure — through the *Projet d’Appui aux Communautés Affectées par le Déplacement* (PACAD). Managing these reforms to social safety nets will require coordination between government and humanitarian actors to compile information on potential participants, working towards a unified social registry.

Microdata can support policymaking at CAR’s current critical juncture. While macroeconomic data are vital for tracking the underlying health of the Central African economy, there is no guarantee that all households will enjoy the benefits of any growth. The effects of conflict, climate, and price shocks will be felt differently by displaced populations, those living in certain parts of the country, and those with certain types of livelihoods. Household-level data — like the 2021 EHCVM — can reveal not only *which* households are the most deprived and *where* they are, but also the specific constraints they face in trying to exit poverty: the poverty assessment seeks to answer exactly these types of questions. Microdata can also help assess new policy interventions, as the rigorous impact evaluation of the Londö program demonstrates. This can help guide policy as the government comes to the end of the *Plan de Relèvement et de Consolidation de la Paix en République centrafricaine* (RCPCA), which has shaped CAR’s development initiatives since 2016. Now is the time to devise new development strategies.

Data should continue to guide CAR’s pathway to poverty reduction. This means shaping the specific design, implementation, monitoring, and evaluation of poverty-reducing policies. The 2021 EHCVM should be the beginning, not the end, of high-quality microdata collection in CAR. Fresh data collection efforts, building on the groundwork laid by the 2021 EHCVM and maintaining the sensitivity to conflict and displacement, will be critical. Tracking progress on poverty and welfare over time can provide further practical guidance to policymakers, as well as holding them accountable, boosting transparency, and supporting good governance. Data can provide the road map towards poverty reduction in CAR.

1. INTRODUCTION: THE CENTRAL AFRICAN REPUBLIC FACES SEVERE DEVELOPMENT CHALLENGES

CHAPTER 1 KEY MESSAGES

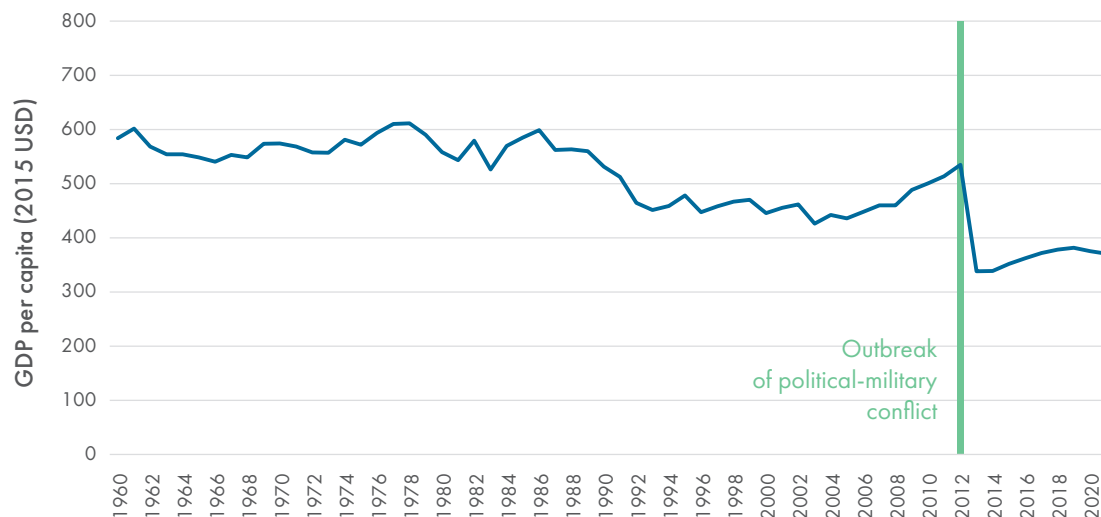
- ▶ Given persistent political instability, the Central African Republic's economy has been in decline for decades, leaving the country with lower gross domestic product per capita now than in the 1960s
- ▶ More recently, the Central African economy suffered dramatically with the outbreak of political-military conflict in 2012, and recovery has been blighted by ongoing violence, the COVID-19 pandemic, and the global effects of the conflict between Russia and Ukraine
- ▶ Several structural features of the Central African economy limit prospects for inclusive growth, including the country's geography, perennial conflict and displacement, reliance on primary products and on aid, and persistently low investment in human capital and infrastructure
- ▶ Climate change and price shocks pose new threats to the Central African economy
- ▶ New, unprecedented microdata analyzed in this poverty assessment may unlock the policies needed to lift Central Africans out of poverty

The introductory chapter of this report — the Central African Republic's (CAR's) first ever poverty assessment — presents the main development challenges that the country faces, which entrench poverty. This provides vital context for the detailed analysis of poverty in CAR discussed in the chapters that follow. First, the introductory chapter offers an overview of CAR's fragile macroeconomy, emphasizing the link between the country's turbulent political environment and its experience of low, non-inclusive growth. Second, the chapter outlines the structural features of the Central African economy that could constrain inclusive growth and poverty reduction. Third, the chapter examines the growing shocks that could affect CAR, including climate shocks to spiking prices, in part spurred by the outbreak of conflict between Russia and Ukraine. Finally, the chapter explains how this poverty assessment can leverage new and unprecedented microdata to assess and address the hardships that Central Africans confront and support policymakers in designing countervailing policies and programs.

1.1. LOW GROWTH AND POLITICAL TURBULENCE HAVE PLAGUED THE CENTRAL AFRICAN REPUBLIC FOR DECADES

Against a backdrop of repeated violence and political instability, the Central African economy has been in decline for several decades. CAR has experienced as many as seven coups d'état attempts, of which five have resulted in a change in power, with just two democratic transitions, since gaining independence in 1960 (Kouame, 2022). These have not proved to be fertile conditions for growth. As a result, gross domestic product (GDP) per capita in 2021 was only around two-thirds the level it was in 1990 (Figure 4). The sharpest sustained drop in GDP per capita occurred when political-military conflict erupted at the end of 2012, as rebels from the Séléka coalition sought to seize power: in 2013, GDP per capita plummeted by 36.8 percent.³

FIGURE 4. GDP PER CAPITA IN THE CENTRAL AFRICAN REPUBLIC, 1960 TO PRESENT DAY



Source: World Development Indicators (WDIs) and World Bank estimates.

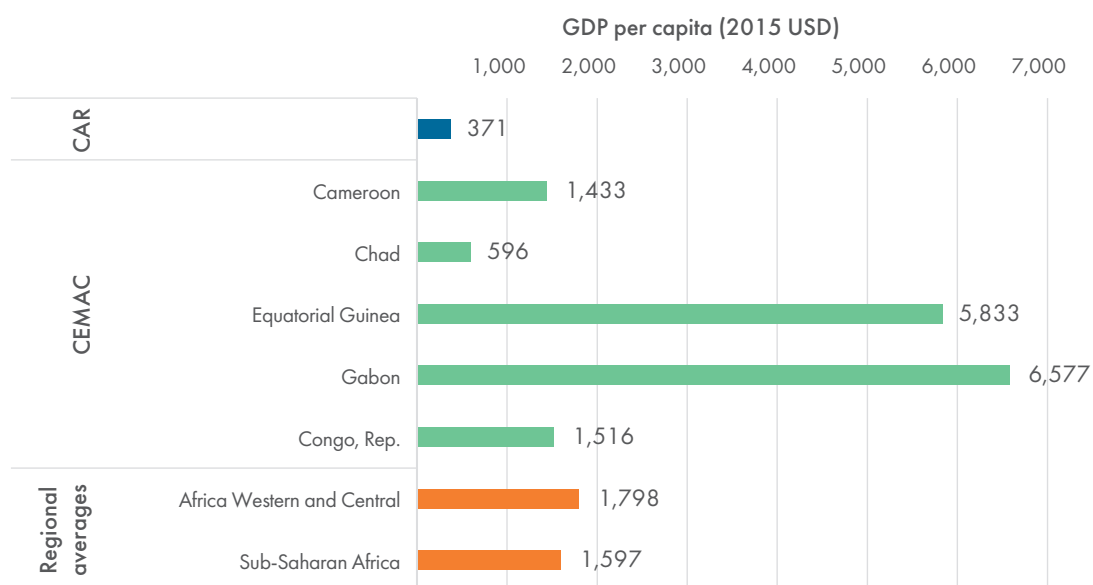
Continuing conflict, the protracted effects of COVID-19, and the global effects of the conflict between Russia and Ukraine mean that growth has remained elusive in the past decade. Between 2014 and 2019, CAR's GDP per capita grew by an average of 2.8 percent per year, as violence at least partially abated. Indeed, the country held relatively peaceful elections in 2016. Yet, with new conflict emerging around the 2020 presidential and legislative elections, growth has waned once more. This has been compounded by the COVID-19 crisis, especially because the land border with Cameroon was closed to contain the spread of the virus and because the pandemic reduced demand for CAR's exports (see below). Moreover, the outbreak of conflict between Russia and Ukraine may have further dampened global demand as well as stemming the supply of grains and other key food products, driving up the prices that Central Africans face and lowering their purchasing power.

This sustained and continuing decline has left CAR as one of the poorest countries in the world, measured by GDP per capita. In 2021, CAR had the lowest GDP per capita of any country in the *Communauté économique et monétaire de l'Afrique centrale* (CEMAC, Economic and Monetary Community of Central Africa) at 371 USD,

³ CAR was also affected by the devaluation of the FCA franc in 1994, which heralded a dramatic loss in purchasing power.

in 2015 prices (Figure 5). This is about one-fifth of the average for the Western and Central Africa region and about one quarter of the average for Sub-Saharan Africa.⁴ One aim of this poverty assessment will be to understand the implications of CAR's beleaguered growth record for the living standards of its people.

FIGURE 5. GDP PER CAPITA IN THE CENTRAL AFRICAN REPUBLIC AND COMPARATOR COUNTRIES, 2021



Note: CEMAC = *Communauté économique et monétaire de l'Afrique centrale* (Economic and Monetary Community of Central Africa).
Source: WDIs and World Bank estimates.

1.2. STRUCTURAL FEATURES OF THE CENTRAL AFRICAN ECONOMY CONSTRAIN INCLUSIVE GROWTH

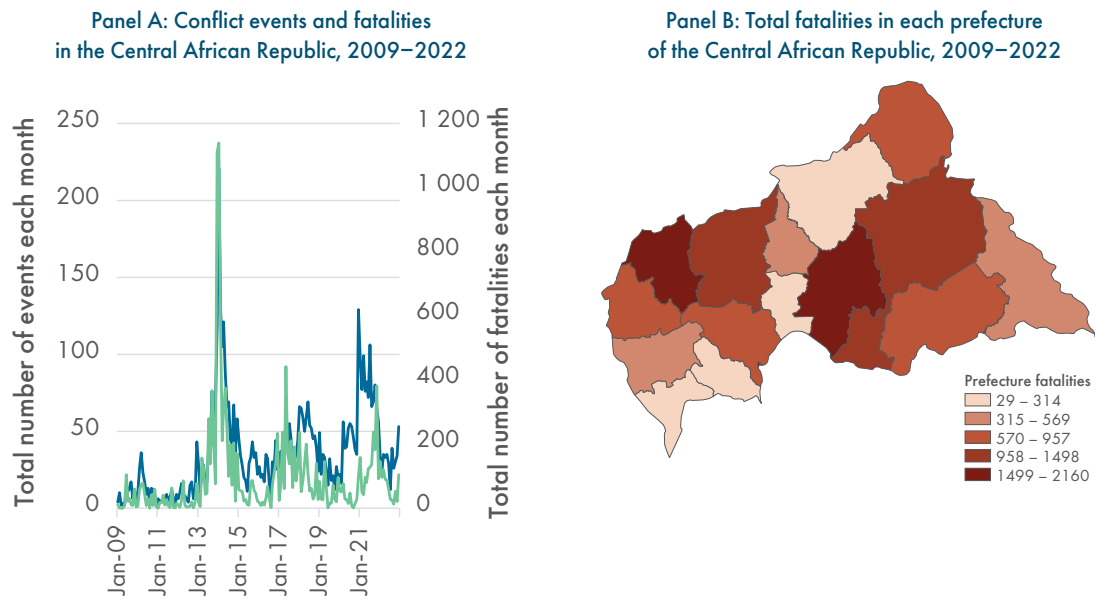
At least eight structural features of CAR's economy limit prospects for the inclusive growth needed to lift people out of poverty; first, CAR's basic geography could be unfavorable. CAR is a landlocked country in central Africa, bordered by Chad, Sudan, South Sudan, the Democratic Republic of Congo, the Republic of Congo, and Cameroon. Not only does this mean CAR lacks access to seaports that could support trade but also many of its neighbors also suffer from political instability, conflict, or low growth, reducing opportunities for exports and intensifying the threat of conflict within CAR itself. Cross-country evidence supports the notion that being landlocked can constrain growth (MacKellar, Wörgötter, & Wörz, 2002). Additionally, CAR's land area covers some 623,000 square kilometers — an area larger than France — and it is home to around 6.1 million people. Population density is therefore low, especially outside of the capital city of Bangui. This means that there are many remote and rural areas of the country where it may be difficult for the population to access services and markets and which the government may struggle to reach with poverty-reducing policies. Farmers and other business may also face limited markets for their output in sparsely-populated areas.

⁴ The relative level of GDP per capita in CAR compared to other countries in the region does not change significantly if constant 2017 international dollars — adjusted using Purchasing Power Parities (PPPs) — are used instead.

Second, conflict — fueled by competition for and mismanagement of natural resources — has been a perennial problem for CAR. As data from the Armed Conflict Location and Event Data Project (ACLED) show, conflict events and resulting fatalities are widespread in CAR and remain at elevated levels since the outbreak of political-military conflict in 2012 (Figure 6). This is corroborated by “protection monitoring” data from the United Nations High Commissioner for Refugees (UNHCR), which show recent increases in the number of physical or life-threatening attacks, cases of gender-based violence, and violations of property rights in CAR (UNHCR, 2022). Conflict can also disrupt livelihoods and investment in physical and human capital, preventing poverty reduction: this is at least partly why global poverty is increasingly becoming concentrated in fragile and conflict-affected settings (Corral, Irwin, Krishnan, Mahler, & Vishwanath, 2020). In CAR in particular, conflict threatens the export of primary products on which the economy relies.⁵ Conflict’s impact on poverty also stretches into the long run, as the effects on human capital can be intergenerational while violence also impedes the implementation of poverty-reducing policies and programs (Akresh, Bhalotra, Leone, & Osili, 2012). Among the fundamental drivers of conflict in CAR is the struggle between political elites to pursue power and capture the country’s vast natural resource wealth (World Bank, 2022). This pattern emerges in other countries endowed with natural resources (Barma, Kaiser, Minh Le, & Viñuela, 2011). Additionally, spatial inequality — especially the large differences between Bangui and the rest of the country — could erode social cohesion, further driving conflict; this raises policy questions around decentralization of government functions.

⁵ In the recent years, economic activity has strongly depended especially on whether the country’s main trade route, Douala-Bangui, is operational (World Bank, 2022).

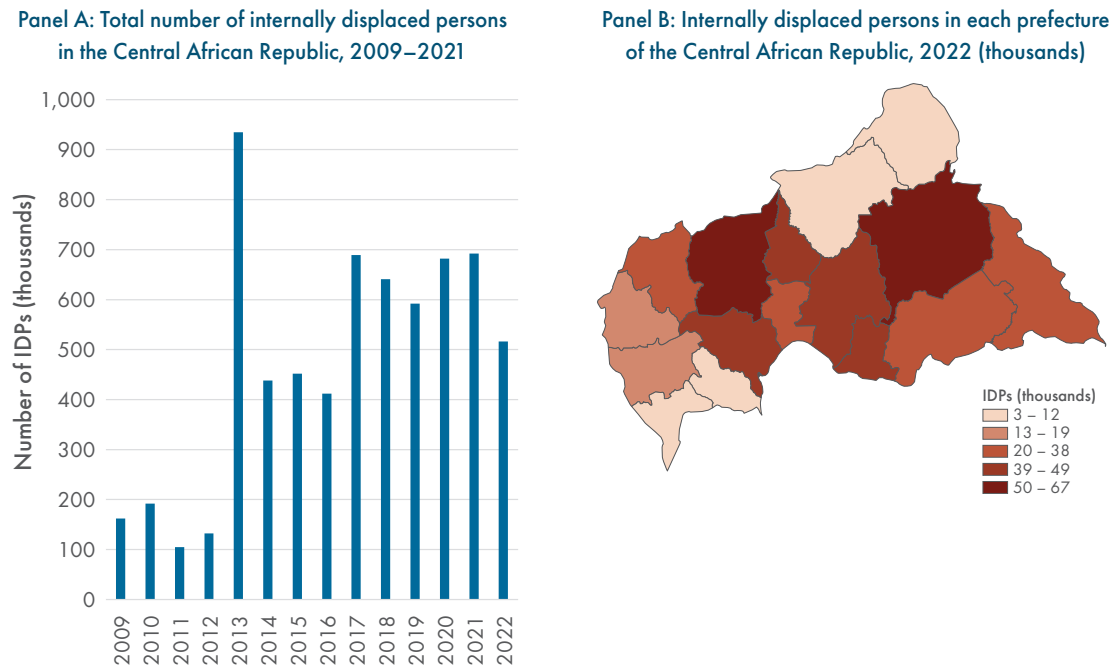
FIGURE 6. CONFLICT EVENTS IN THE CENTRAL AFRICAN REPUBLIC



Note: In Panel A, “All events” includes battles, explosions/remote violence, protests, riots, strategic developments, and violence against civilians. The chart counts the number of such events that took place in a given month. “Fatalities” counts the total number of deaths recorded in that month.
Source: Armed Conflict Location and Event Data Project (ACLED) and World Bank estimates.

Third, conflict has led to substantial displacement of Central Africans, some of whom have left the country and some of whom remain within CAR’s borders but are internally displaced. UNHCR estimates that there are currently around 700,000 refugees from CAR in other countries — especially in neighboring Cameroon, Chad, and the Democratic Republic of Congo — and around 500,000 people displaced internally within CAR itself (UNHCR, 2023). The International Organization for Migration also estimates that there are nearly 1.9 million returnees who used to be IDPs in CAR, and more than 400,000 returnees who had come back from abroad (IOM, 2022). There are currently as many as 87 official camps for internally displaced persons (IDPs) in CAR, but around 7 out of 10 IDPs live outside of camps in host households in typical communities.⁶ The number of displaced people in CAR peaked following the outbreak of political-military conflict in 2012, but numbers remain high (Figure 7). Evidence from other countries demonstrates the profound impact displacement can have on poverty and many other dimensions of household welfare (Pape & Sharma, 2019). This is likely to persist in CAR, despite significant multilateral efforts to protect displaced people, including through the Yaoundé Declaration (USCRI, 2022). This poverty assessment will use unique and unprecedented survey data from CAR in 2021 to assess the unique challenges that IDPs face. Conflict and displacement affect many of CAR’s neighbors, as the unfolding crisis in Sudan exemplifies, so policies seeking to reduce poverty and promote inclusive growth through international trade and cross-border coordination need to be carefully designed.

⁶ The UNHCR dashboard for CAR for December 2022 reports that 71.7 percent of IDPs live outside of camps in host households. In the household survey data used for this poverty assessment, the equivalent share is very close at 69.6 percent.

FIGURE 7. INTERNAL DISPLACEMENT IN THE CENTRAL AFRICAN REPUBLIC

Source: Internal Displacement Monitoring Centre (IDMC) and World Bank estimates for Panel A. United Nations High Commissioner for Refugees (UNHCR) and World Bank estimates for Panel B.

Fourth, CAR is endowed with extensive natural resources, but their mismanagement can feed conflict and many are exported before value can be added — and hence processing and manufacturing jobs created — in country. According to official trade statistics, almost 40 percent of CAR’s exports come from timber: in 2021, 31.1 percent of exports were in rough wood and a further 7.3 percent were in sawn wood (OEC, 2023).⁷ Precious metals and other minerals comprise an even larger share of exports, with 39.0 percent coming from gold and 13.4 percent coming from diamonds. Competition for these natural resources may drive conflict (World Bank, 2022). In turn, security challenges prevent CAR from making the most of its mining and extractives industries: the country was suspended from the Kimberley Process Certification Scheme⁸ (KPCS) and the Extractive Industries Transparency Initiative (EITI), causing mining operations to close, stifling investment in exploration, and limiting exports (World Bank, 2019). Moreover, primary products are rarely processed locally, limiting the value added before export and, in turn, constraining opportunities for creating productive jobs. For some of these products — especially gold — the prices can also vary dramatically, making CAR’s exports vulnerable to the ebb and flow of global demand, especially as regional trade integration remains shallow (World Bank, 2019).

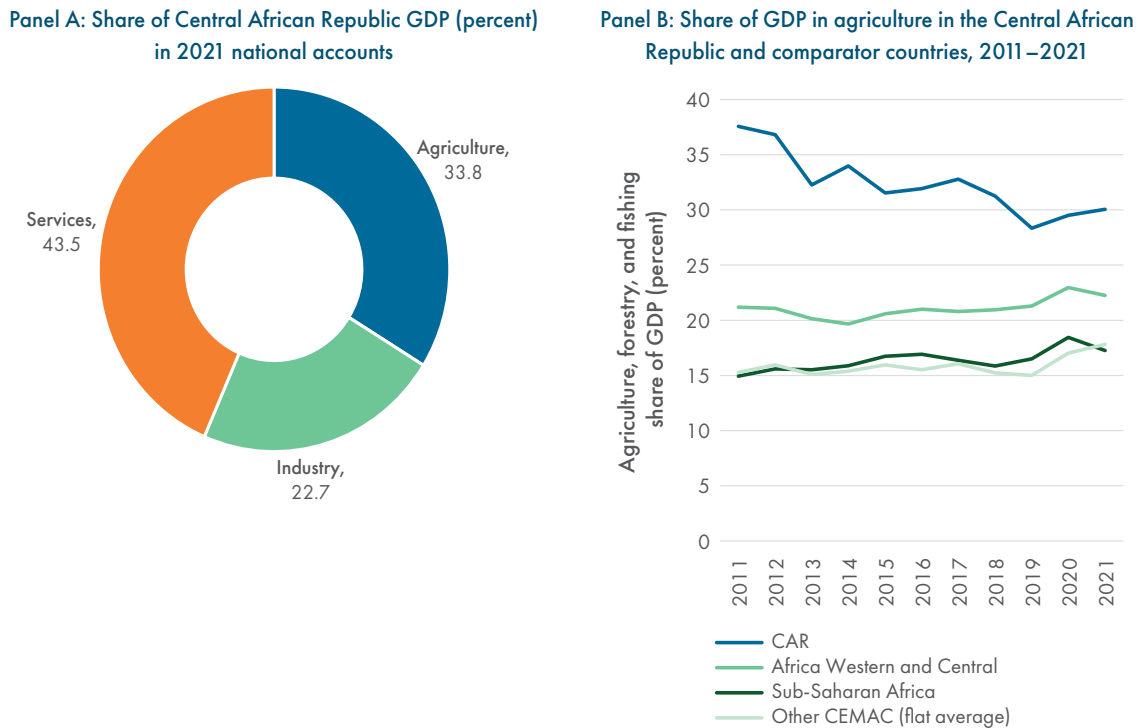
Fifth, the economy is highly dependent on agriculture, but agricultural productivity is weak. Around one-third of GDP is in the agricultural sector in CAR, despite some shift towards services and industry over the last decade (Figure 8). This is significantly higher than the averages for other CEMAC countries, Western and

7 This dependence on timber for exports also underlines the importance of carefully managing CAR’s natural capital.

8 KPCS is the process established to prevent so-called “conflict diamonds” from entering the mainstream rough diamond market.

Central Africa, and Sub-Saharan Africa as a whole. As Chapter 5 of this poverty assessment shows, an even higher share of workers – more than two-thirds – engage primarily in agriculture. Large scale structural transformation, where workers would be drawn into higher-productivity jobs in industry and services, therefore remains a long way off. In part these patterns are explained by agricultural productivity being stubbornly weak (World Bank, 2022).

FIGURE 8. COMPOSITION OF GDP IN THE CENTRAL AFRICAN REPUBLIC



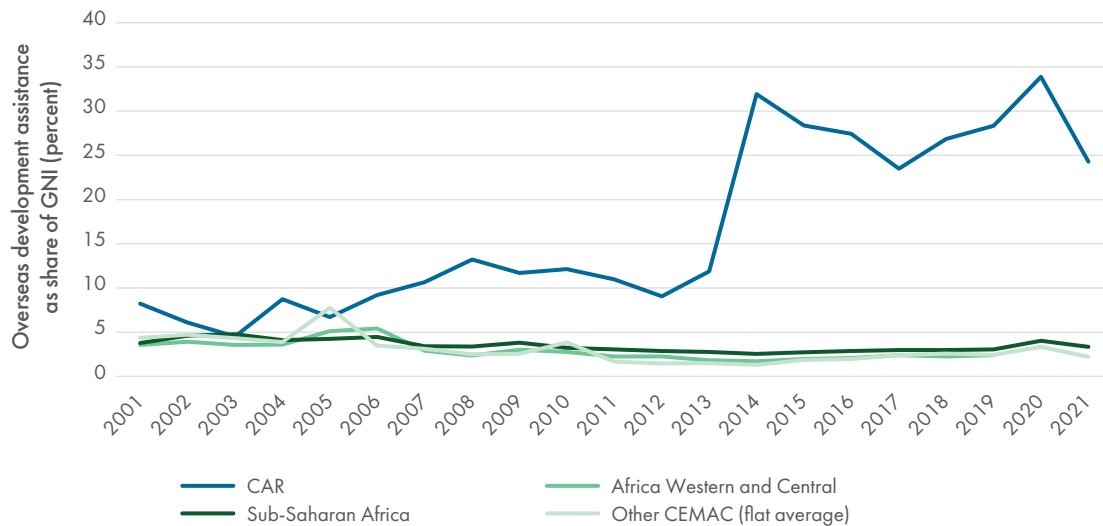
Note: CEMAC = *Communauté économique et monétaire de l'Afrique centrale* (Economic and Monetary Community of Central Africa). In Panel B, the flat average without population weights is taken over other CEMAC countries.

Source: CAR's national accounts and World Bank estimates for Panel A. WDIs and World Bank estimates for Panel B.

Sixth, CAR is fiscally constrained, with public spending being highly dependent on aid from other countries, which may fluctuate. In the 2023 budget, published in the *Loi de finances* (Finance Law), some 43.2 percent of the Central African government's budget comes from external sources, including through direct budget support and through project grants and loans (Ministère des finances et du budget, 2023). CAR is therefore reliant on the aid policies of donor countries, through both bilateral and multilateral structures. Overseas development assistance (ODA) as a share of Gross National Income (GNI) was increasing in CAR between 2017 and 2020, but then dropped in 2021 by almost one-third, as some international donors reacted to changes in CAR's internal security policies (Figure 9). Concurrently, public investment fell from 11.3 percent of GDP in 2020 to 7.4 percent of GDP in 2021 (World Bank, 2022). Despite some progress in the last decade, tax collection remains low given the tax system of exemptions, limited capacity for customs and tax administration, and a need to broaden the tax base – constraints on domestic resource mobilization explain why the government budget still depends on external sources (World Bank, Forthcoming).⁹

⁹ Despite these fiscal constraints, public debt is expected to remain sustainable (World Bank, 2023).

FIGURE 9. SHARE OF OVERSEAS DEVELOPMENT ASSISTANCE IN GNI IN THE CENTRAL AFRICAN REPUBLIC AND COMPARATOR COUNTRIES



Note: CEMAC = Communauté économique et monétaire de l'Afrique centrale (Economic and Monetary Community of Central Africa). The flat average without population weights is taken over CEMAC countries. Source: Development Assistance Committee of the Organisation for Economic Co-operation and Development, WDIs, and World Bank estimates.

Seventh, the institutional and regulatory framework could hinder growth, job creation, and poverty reduction.

A complete analysis of the regulatory framework in CAR is beyond the scope of this poverty assessment, and has been covered in detail elsewhere (see, for example, World Bank (2022)). Yet it is important to recognize how the distortionary effects of CAR's institutional landscape can trap people in poverty. The current regulatory framework is conducive to elite capture, curtailing market-based competition: for example, permits, licenses, and contracts may only go to those firms that are more connected to elites. This discourages investment and leads to misallocation of resources, constraining the productivity growth that CAR needs to create the jobs that can lift people out of poverty. It also disrupts social cohesion, further entrenching violence and political instability.

Eighth, investment in two fundamental engines of inclusive growth and poverty reduction – human capital and infrastructure – is low.

Human capital comprises the knowledge, skills, and health that people accumulate throughout their lives, which enable them to “realize their potential as productive members of society” (World Bank, 2018). According to the World Bank's Human Capital Index (HCI) – which assesses people's productive potential by combining information on infant mortality, expected years of schooling, learning, life expectancy, and stunting – CAR had the worst human capital outcomes in the world in 2020, underlining the challenge the country faces (World Bank, 2020). This reflects CAR's relatively low levels of human capital-related public spending, especially on education.¹⁰ Similarly, the extent of electrification, paved roads, and mobile cellular penetration remains insufficient to sustain inclusive growth and poverty reduction. These issues are explored in detail throughout the chapters in this poverty assessment.

¹⁰ Government spending on education in CAR was 1.7 percent of GDP on average over the period 2018–20, whereas the average for Sub-Saharan Africa was of 4.6 percent (World Bank, Forthcoming).

1.3. CLIMATE CHANGE, COVID-19, AND PRICE SHOCKS PRESENT NEW THREATS TO POVERTY REDUCTION

Climate shocks increasingly threaten livelihoods and welfare in CAR. The country's climate stretches from a tropical, humid equatorial climate in the south to a Sahelo-Sudanian climate in the north: this means Central Africans experience distinct dry and rainy seasons (World Bank, 2023). The timing and intensity of the rainy season is crucial, as livelihoods in CAR depend on rainfed agricultural activities (see Chapter 5). Yet climate change already appears to be disrupting rainfall in CAR, with extreme rainfall events becoming more common in the last 30 years: this resulted in severe floods around Bangui in 2012, Kouango in 2017, and Paoua in 2019 (GERICS, 2015). Extreme weather events are projected to become even more frequent and intense, even under relatively mild assumptions about the path of climate change (World Bank, 2021). Adaption strategies that could boost CAR's resilience to climate change also appear to be limited: The Notre Dame-Global Adaptation Index (ND-GAIN), which assess countries' vulnerability to and readiness to adapt to climate change, ranks CAR 181 out of 182 countries, with the country's score declining over the past three decades.¹¹ Therefore, the impact of climate shocks on poverty in CAR could worsen in the future, without corrective policies.

CAR was not spared of the effects of the COVID-19 crisis. As of April 2023, there had been a total of 15,367 confirmed COVID-19 cases in CAR and 113 deaths — in per capita terms these are comparable with neighboring countries (OurWorldInData, 2023). At the height of the pandemic, CAR implemented stringent containment measures, including mandatory wearing of masks, social distancing, community-based surveillance, and closing of international borders (World Bank, 2020). While crucial for reducing the health effects of the virus, such measures came with an economic cost. International demand also fell significantly during the COVID-19 pandemic, with severe impacts on CAR's exports (described above). As the arrival of the pandemic coincided with violence around the 2020 presidential election, real GDP growth dropped from 3.0 percent in 2019 to 1.0 percent in 2020 (World Bank, 2022).

Rampant inflation in the wake of the Russia-Ukraine conflict and severe fuel shortages have also hit the Central African economy in the last year. Overall inflation of the Consumer Price Index (CPI) reached 4.3 percent year-on-year in 2021 and is set to exceed 6 percent in 2022 and 2023. While these estimates are lower than in other countries in Western and Central Africa, they mask more significant price increases for food products which may be most relevant for poor Central African households (Ha, Kose, & Ohnsorge, 2021). For example, in 2021, escalating violence caused price inflation for key imported and locally-produced goods — including onions, palm oil, cassava, and beef — to reach double digits, while by 2022 when the conflict between Russia and Ukraine had begun to hamper global food markets, the price of maize was rising more than 40 percent year on year (World Bank, 2021; Andrée, 2021). Fuel shortages compounded inflation and further stifled economic activity in 2022 and early 2023 (IMF, 2023). Chapter 3 of this report will assess more precisely how such shocks impact household consumption and, in turn, poverty.

11 The ND-GAIN includes 45 indicators on food, water, health, ecosystem services, human habitat, infrastructure, economic readiness, governance readiness, and social readiness. For further details see Chen, et al. (2015).

1.4. NEW, UNPRECEDENTED MICRODATA CAN HELP DEVELOP STRATEGIES FOR POVERTY REDUCTION IN THE CENTRAL AFRICAN REPUBLIC

Given CAR's development challenges, macro-level data on the economy and on shocks are useful but they can only go so far; household-level microdata are needed to shape policies that can lift Central Africans out of poverty. Tracking the underlying health of the Central African economy helps to provide insights into strategies for igniting growth. Yet as global evidence demonstrates, even if the economy grows, there is no guarantee that any gains will reach the poorest and most vulnerable households.¹² This is especially pertinent for CAR because some households — be they displaced, located in certain parts of the country, or engaged in particular livelihoods — will feel the effects of conflict, climate, and price shocks more than others. Household-level data not only tell us *which* households are the most deprived and *where* they are, but also the specific constraints they face in trying to exit poverty. Understanding these mechanisms can help design, target, and implement poverty-reducing programs and policies more effectively.

Moreover, the need for policy action is too urgent in CAR to rely only on growth-led poverty reduction. As Chapter 2 demonstrates, poverty is widespread and deep in CAR. Energizing inclusive growth to lift people out of poverty is certainly essential in the medium and long run. However, such strategies take time. There are pressing humanitarian needs in CAR right now, especially in terms of averting food insecurity, which require immediate data-driven guidance. This poverty assessment aims to use microdata to provide humanitarian actors with key information to help reach CAR's most deprived people.

The poverty assessment comes at a critical juncture for the Central African government, towards the end of the *Plan de Relèvement et de Consolidation de la Paix en République centrafricaine (RCPCA)*. In October 2016, CAR adopted the RCPCA to coordinate development strategies for the period 2017–2021 (Ministère de l'Économie, du Plan, et de la Coopération Internationale, 2016). In September 2021, this plan was extended until 2023 (Ministère de l'Économie, du Plan, et de la Coopération Internationale, 2021). The plan encompasses three main pillars, namely: (1) supporting peace, security, and reconciliation; (2) renewing the social contract between the state and the population; and (3) promoting economic recovery and boosting productive sectors. The majority of the data used in this poverty assessment cover 2021, just as the RCPCA was being extended, and it is hoped the findings could support the Central African government in devising development strategies for after the RCPCA.

In 2021, the household data needed to measure and understand poverty were collected in CAR for the first time in more than a decade. The 2021 *Enquête Harmonisée sur les Conditions de Vie des Ménages* (EHCVM) was the first household survey suitable for poverty measurement collected in CAR since the 2008 *Enquête Centrafricaine pour le Suivi et Evaluation du Bien-être* (ECASEB). The 2021 EHCVM resulted from a concerted collaboration between CAR's national statistical office — *Institut Centrafricain des Statistiques et des Etudes Economiques et Sociales* (ICASEES) — and the World Bank. Significant effort was made to ensure the 2021 EHCVM data were of high quality, especially by using Computer-Assisted Personal Interviewing (CAPI) on tablets to facilitate extensive headquarter- and field-level monitoring of the fieldwork. Crucially, the 2021 EHCVM collected data on household consumption according to international best practices, making it possible to construct an accurate poverty

¹² Global evidence increasingly suggests that growth and poverty reduction may be delinked, as poverty becomes more and more concentrated in poor areas of large middle-income countries (Ravallion, 2012). This may be because labor markets are not sharing the proceeds of growth as effectively as they did in the past, while the COVID-19 pandemic may have weakened the democratic institutions that support redistribution (Pande & Enevoldsen, 2021).

estimate for CAR. Yet the 2021 EHCVM went beyond this, capturing vital information on other markers of welfare, including health, education, access to basic infrastructure, livelihoods (especially agriculture), and households' experience of shocks. Given its high data quality standards and the breadth of information that was collected, the 2021 EHCVM provides the foundations for this poverty assessment.

The 2021 EHCVM's sampling strategy makes it possible to conduct crucial analysis on key subpopulations within CAR, especially on IDPs. The 2021 EHCVM sample was designed to be representative of CAR's seven regions and of urban and rural areas: this, in itself, allows for some vital geographical disaggregation of the estimates in this poverty assessment and provides spatially sensitive policy insights. Yet even more importantly, the 2021 EHCVM included an explicit sample of IDPs selected from data on official camps provided by UNHCR. This gives an overall sample of 6,437 households, of which 496 were sampled from camps. As well as separating out those households living in camps, the EHCVM questionnaire also contains individual-level information on those who were displaced, even if they live in households in other communities, outside of camps. For the individual-level analysis in this poverty assessment, it is therefore possible to identify IDPs be they in or outside of camps. The report will therefore also distinguish between households outside of camps that do and do not have IDP members, to assess how hosting IDPs could affect household-level outcomes (see Chapter 2 for more details). Few other surveys have been able to provide this level of detail on displacement; understanding the deprivations and constraints that IDPs face is essential for the policy questions that CAR confronts.

Given the many improvements to the survey design and implementation, it is not possible to compare directly with previous surveys to construct poverty trends for CAR. The 2021 EHCVM poverty estimates cannot meaningfully be compared with those from the 2008 ECASEB. Therefore, rather than drawing erroneous trends, the poverty assessment will focus on understanding CAR's current poverty profile and constraints to poverty reduction. Nevertheless, the analysis in Chapter 4 will display some trends for non-monetary poverty indicators, drawing on the Multiple Indicator Cluster Survey (MICS) to assess how these indicators have changed over time.

The poverty assessment goes beyond traditional microdata to enhance its policy messages. In particular, the analysis deploys various geospatial data sources to construct more granular estimates of poverty and to understand better the links between access to services and markets, human capital, and poverty. This includes detailed information on the locations and characteristics of schools, health facilities, water points, and various other key elements of basic infrastructure collected through the CAR's ongoing cartographic census. These extend and enrich the analysis that is possible with the 2021 EHCVM.

1.5. STRUCTURE OF THE POVERTY ASSESSMENT

The poverty assessment is structured as follows. Chapter 2 reports CAR's headline poverty and inequality statistics and describes the profile of poverty in the country. Chapter 3 examines vulnerability, showing how shocks, stresses, and uncertainty may be trapping Central African households in poverty. Chapter 4 considers non-monetary dimensions of poverty, including constraints on human capital. Chapter 5 explores the livelihoods in which Central Africans are engaged, assessing how new jobs and income-generating strategies could lift people out of poverty. Chapter 6 deploys unique geospatial data to investigate how improving physical access to services and infrastructure could invigorate poverty reduction. Chapter 7 summarizes the poverty assessment's main policy messages, presenting the key and urgent priorities for lifting Central Africans out of poverty.

2. POVERTY IN THE CENTRAL AFRICAN REPUBLIC IS WIDESPREAD AND DEEP, LEAVING MANY WITHOUT ENOUGH FOOD TO EAT

CHAPTER 2 KEY MESSAGES

- ▶ In 2021, some 68.8 percent of Central Africans were living below the national poverty line; about 4.2 million people in a population of 6.1 million
- ▶ More than half of the population also lived below the food poverty line, implying that they lacked the resources needed to adequately feed themselves, even if they were to spend their entire household budget on food
- ▶ Overall poverty and food poverty are significantly lower in urban areas, especially Bangui
- ▶ Internally displaced people living in camps, making up about 4.1 percent of the population, are more likely to be in poverty
- ▶ As in other countries, Central Africans are more likely to be poor if they live in larger households whose heads are less educated and primarily engaged in agriculture
- ▶ Poverty is projected to remain high in the Central African Republic over the next five years, as — without miraculous changes — growth will be insufficient to lift households above the poverty line

This chapter of the poverty assessment presents CAR's headline statistics on poverty and inequality and profiles those households most likely to live below the poverty line. The chapter begins by explaining how welfare and poverty are measured in CAR, using data from the 2021 EHCVM, and presents the country's underlying consumption patterns. The chapter then shows the headline estimates of key poverty- and inequality-related statistics for CAR. Poverty is so widespread and deep in the country that it is also necessary to consider explicitly those who are "food poor", lacking the resources to feed themselves adequately. The chapter concludes by constructing "poverty profiles", examining the characteristics that are most associated with poverty. Here the chapter pays particular attention to IDPs, given the extent of conflict and displacement in CAR described in Chapter 1.

2.1. LEVERAGING NEW SURVEY DATA FOR WELFARE ANALYSIS IN THE CENTRAL AFRICAN REPUBLIC

High-quality data collected through the 2021 EHCVM enable estimates of poverty and welfare to be produced for CAR for the first time in more than a decade. The EHCVM data were collected by ICASEES in collaboration with the World Bank in two distinct waves: from April to June 2021 and from October to December 2021. The survey therefore captures information on Central African households at different points in the agricultural cycle, which is important because seasonality could affect income, consumption, and poverty. The survey was also implemented through CAPI, so the fieldwork could be monitored carefully to ensure high data quality. The questionnaire included detailed questions on household consumption, enabling welfare and poverty to be measured according to international best practices, but there were also questions on health, education, basic infrastructure, livelihoods, and many other correlates of poverty. Using these data, ICASEES launched official poverty statistics for CAR in February 2023; these were the country's first official poverty statistics since those based on the 2008 ECASEB, released more than a decade ago.

The 2021 EHCVM's sampling strategy allows for geographical disaggregation and ensures the results are representative of displaced people. The 2021 EHCVM sample covered 6,437 households and was designed to be representative of CAR's seven regions and of urban and rural areas (Table 1). To account for CAR's large displaced population, 496 of the 6,437 households were sampled explicitly from IDP camps, using data on the number of households in each camp from UNHCR. The remaining 5,941 non-displaced households were sampled from 500 enumeration areas taken from the last census completed in 2003. This means the results can be disaggregated according to whether or not households are living camps.

TABLE 1. 2021 EHCVM SAMPLE BY REGION, URBAN-RURAL, AND WHETHER OR NOT HOUSEHOLDS WERE SAMPLED FROM CAMPS

	Urban		Rural		TOTAL
	All households outside of camps	In camps	All households outside of camps	In camps	
1. Plateaux	287	0	660	0	947
2. Équateur	348	10	594	0	952
3. Yadé	144	171	935	0	1,250
4. Kagas	228	61	540	87	916
5. Fertit	108	68	275	0	451
6. Haut Oubangui	168	89	583	0	840
7. Bangui	1,071	10	0	0	1,081
TOTAL	2,354	409	3,587	87	6,437

Source: 2021 EHCVM and World Bank estimates.

The 2021 EHCVM also collected data on displaced persons within households living outside of camps, making it possible to isolate them in the analysis that follows. The specific questions on displaced persons were designed in accordance with guidance from the International Recommendations on IDP Statistics (IRIS). For analysis of individual-level outcomes — such as livelihoods (in Chapter 5) — the questions on forced displacement can be used directly to identify and isolate the results for IDPs. Specifically, the poverty assessment classifies anyone who has fled their normal residence due to violence or a natural or environmental disaster and who is not living at their normal residence as displaced. Yet it is also helpful to construct a definition of displacement at the household level for analysis of household-level outcomes — including poverty, food security, and access to basic infrastructure — based on the individual-level information captured by the questionnaire. To do this, the poverty assessment divides up households outside of camps according to whether they contain *any* IDPs or *no* IDPs. This means households can be separated into three groups: (1) “non-IDP households”, that is, households living outside of camps in which no IDPs reside; (2) “IDP out-of-camp households”, that is, households living outside of camps in which at least one IDP resides; and (3) “IDP in-camp households”, that is, those households that reside in camps.¹³

2.2. HOW POVERTY IS MEASURED IN THE CENTRAL AFRICAN REPUBLIC

Poverty measurement in CAR hinges on calculating how much households consume rather than on their incomes. Basing poverty measurement on consumption rather than income is typical in low-income country settings, because measuring income may be difficult when the labor market is dominated by informal jobs or subsistence activities and income may be more volatile if shocks are prevalent (Mancini & Vecchi, 2022). The EHCVM questionnaire contains detailed information on the food items that Central African households consume at home, coming from (1) purchases, (2) own production, (3) gifts, and (4) other sources, such as celebrations. The questionnaire also records the value of (5) meals consumed outside the home. Then, from other modules, the survey gathers information on the value of spending on (6) education, (7) health, (8) durable goods, (9) housing, and (10) other non-food items such as transport, clothing, and fuel.¹⁴ These 10 elements provide a detailed picture of what households consume. A small number of households (26) were dropped from the final analysis because they did not have sufficient information on the food consumed; this leaves a final sample for welfare and poverty analysis of 6,411 households.¹⁵

The measure of consumption is temporally and spatially deflated to facilitate comparisons between different households across CAR and to enable comparisons with a single, national poverty line. Given the price shocks described in Chapter 1 and the extent of seasonal variation, the prices that Central African households faced may have differed depending on when they were interviewed. To account for this, consumption was deflated temporally using monthly data from CAR’s CPI. Consumption was also deflated spatially to take account of prices varying across different parts of CAR by constructing a price index for each of the country’s

¹³ In the final, unweighted sample of households used for the poverty analysis, 78.4 percent of households are non-IDP households, 13.9 percent of households are IDP out-of-camp households, and 7.7 percent of households are IDP in-camp households.

¹⁴ The “use value” of durable goods is calculated using the purchase price, estimated depreciation, and estimated current sale price; the idea is to assess the value of the durable good to the household *in that year*. The value of housing is estimated as the amount paid in rent for those who are renting, but a measure of “imputed rent” based on household characteristics is constructed for those who are not renting. See Deaton and Zaidi (2002) for more details.

¹⁵ There were no data recorded in the main food consumption section of the questionnaire for 73 households. It is plausible that small households consume all of their food away from home, but 26 of these households either did not have any food consumption away from home or had more than two household members and were thus dropped from the construction of the consumption aggregate and the analysis of poverty. The remaining weights were adjusted at the enumeration area level.

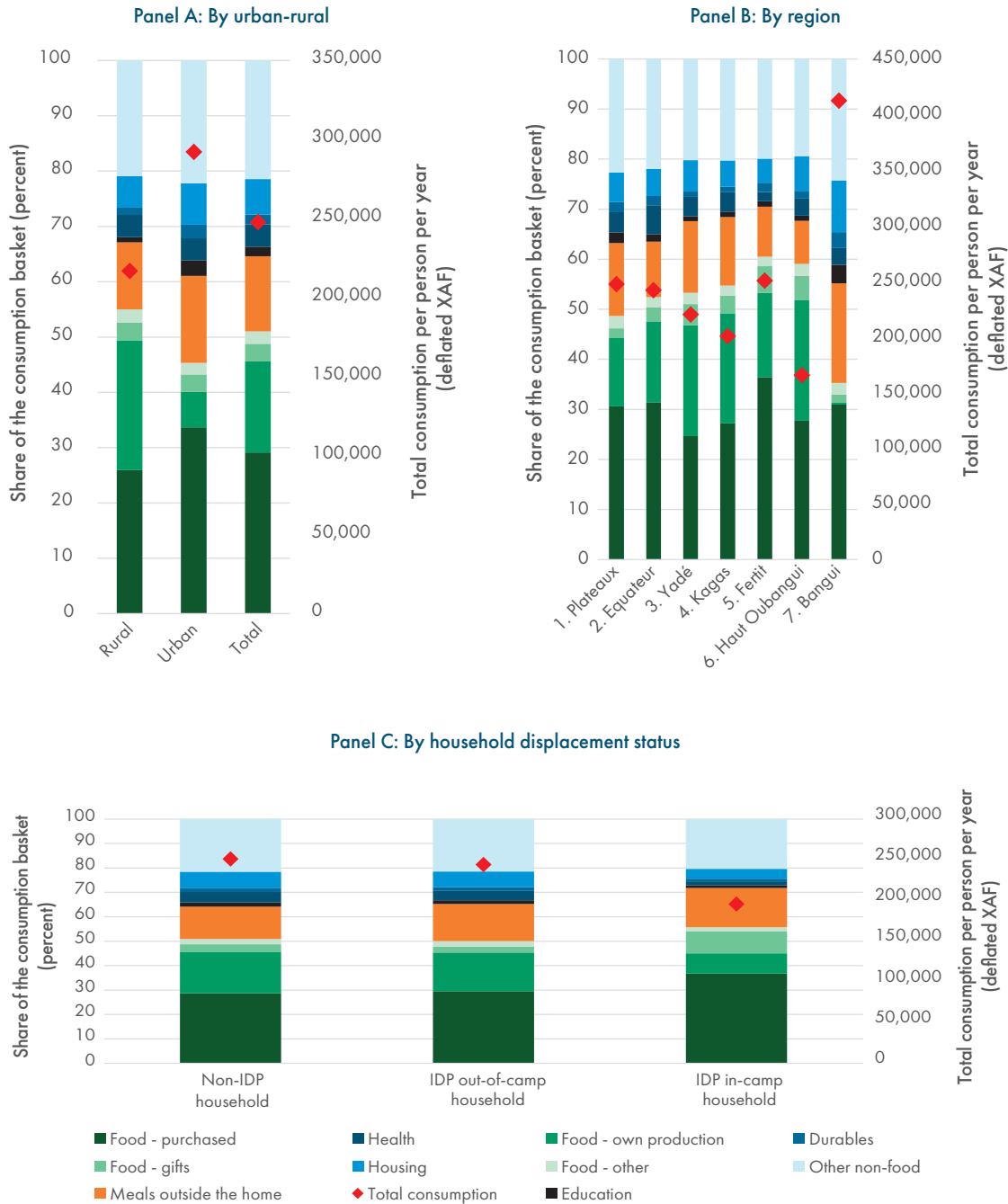
six “domains”. The domain divides each of the three agroecological zones – (1) *Guinéenne forestière*, (2) *Soudano-oubanguienne*, and (3) *Soudano-guinéenne* – into rural and urban areas creating six distinct areas.¹⁶ The price indices were calculated by creating a poverty line for each domain and dividing it by the national poverty; the method for creating these poverty line(s) is described below. By applying these temporal and spatial deflators, a measure of “deflated” or “real” consumption can be created, which can be compared across different households in the survey. Since some households are larger than others, the analysis also divides household consumption by household size to produce per capita values.

Real per capita consumption is higher and more concentrated in non-food items in urban areas, in Bangui, and for those households not in camps. Overall, Central Africans’ mean deflated consumption per person is just under 250,000 XAF each year.¹⁷ The average Central African devotes 64.6 percent of their consumption basket to food items, consumed either at or outside the home (Figure 10). Yet there are clear differences between rural and urban areas, between different regions, and between households depending on their displacement status. Mean deflated consumption is higher and the share of consumption devoted to food items is lower in urban areas, in Bangui, and for all those households outside of camps (that, is for non-IDP households and IDP out-of-camp households). These differences are statistically significant at the 5 percent level, tested using simple bivariate regressions clustered at the enumeration area level. The differences in the share of the consumption basket devoted to food consumption also remain if only food consumed at home is considered. Insofar as urban areas, Bangui, and all households living outside of camps are richer than others and they consume a higher share of food, these results are consistent with Engel’s Law (Anker, 2011).

¹⁶ Constructing price indices using the same method at the region or region-urban-rural level does not substantially alter the main results. The domain-level price indices are preferred because they enable the important urban-rural distinction to be captured without having to produce too many price indices.

¹⁷ This corresponds to 729 USD 2017 PPP per person per year.

FIGURE 10. CONSUMPTION PATTERNS IN THE CENTRAL AFRICAN REPUBLIC BY URBAN-RURAL, REGION, AND HOUSEHOLD DISPLACEMENT STATUS



Note: The "Food - other" category includes alcoholic beverages recorded in the non-food section of the questionnaire and food consumed at festivals and celebrations.

Source: 2021 EHCVM and World Bank estimates.

The poverty line is calculated according to a “cost of basic needs” approach, based on estimates of how much money Central Africans need to maintain a basic level of welfare. This approach relies on calculating how much it would cost to acquire the food to meet some basic nutritional standard then adds the cost of other essential non-food goods and services, such as clothing and housing (Haughton & Khandker, 2009; Datt & Lanjouw, 2023). In CAR, the basic nutritional standard is set at 2,300 calories per person per day.¹⁸ This approach produces an overall national poverty line of 263,485 XAF per person per year, or about 775 USD 2017 Purchasing Power Parity (PPP) per person per year. Further details of the application of the cost of basic needs approach in CAR are provided in Box 1.

BOX 1. APPLYING THE COST OF BASIC NEEDS APPROACH TO CONSTRUCT A POVERTY LINE FOR THE CENTRAL AFRICAN REPUBLIC

The national poverty line in CAR was created in two main steps; first, a “food poverty line” was created. This was done by working out the level of consumption needed for a relevant reference population to provide themselves with 2,300 calories per person per day. The reference population comprises those households between the 20th and 90th percentile of the temporally deflated per capita consumption distribution. For this reference population, a reference basket of 54 food items that covers at least 85 percent of their total consumption — in XAF terms — was constructed. This reference basket was converted into quantity terms using national prices and then calorie terms by using the calorie values associated with each food item. Initially, the reference basket was only 1,176 calories per person per day, so this had to be scaled up to 2,300. This yields a food poverty line of 197,990 XAF per person per year, or 582 USD 2017 PPP per person per year.

Second, a non-food component of the poverty line was constructed. This was done by estimating the mean non-food expenditure of those households whose total consumption (in temporally deflated, per person terms) was within 5 percent of the food poverty line. This produces a non-food component of 65,495 XAF per person per year, or 193 USD 2017 PPP per person per year.

Adding together the food and non-food components produces the overall national poverty line. The overall national poverty line is 263,485 XAF per person per year, or 775 USD 2017 PPP per person per year.

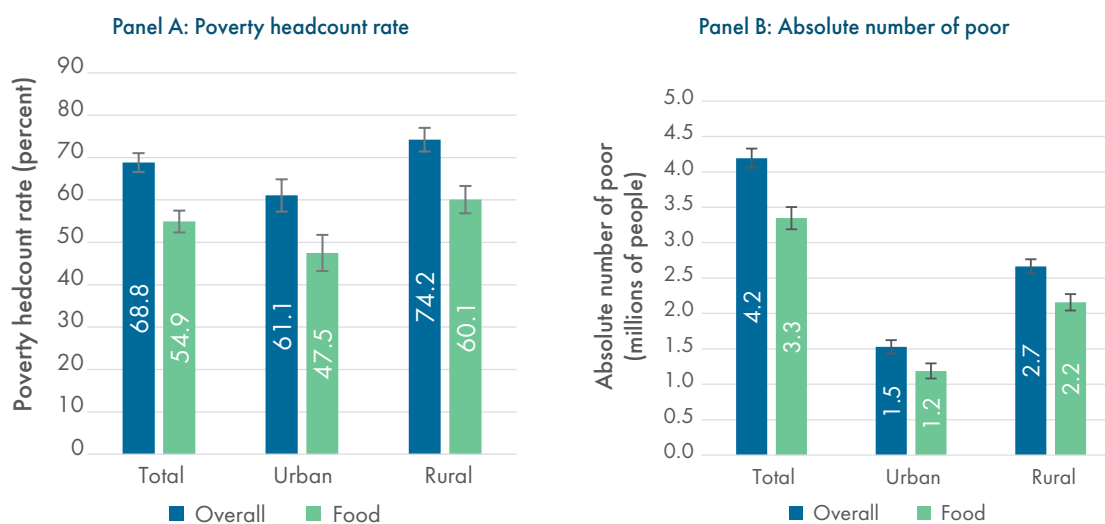
Poverty statistics are estimated using one poverty line for CAR. It is possible to compare consumption with one single poverty line, because consumption is temporally adjusted and spatially deflated using the domain-specific poverty lines described above. This makes comparisons of poverty for different households in different parts of the country more straightforward.

¹⁸ The value of 2,300 calories is applied across many other countries in the Western and Central Africa region. If the caloric requirements for active males of 3,000 calories per day — taken from the United States Department of Agriculture — are adjusted for the demographic composition of CAR using the caloric-demographic adjustment factors applied in Nigeria — the region’s largest country — the average caloric requirement would be 2,240 calories per day (USDA, 2011; NBS, 2020). This is close to the 2,300-calorie threshold applied in the analysis.

2.3. POVERTY IS WIDESPREAD AND DEEP IN THE CENTRAL AFRICAN REPUBLIC, LEAVING MORE THAN HALF OF THE POPULATION WITHOUT ENOUGH FOOD

More than two-thirds of Central Africans live in poverty and more than half live in food poverty. In 2021, 68.8 percent of Central Africans were living below the national poverty line of 263,485 XAF per person per year (Figure 11).¹⁹ This means that around 4.2 million people were poor in CAR. Yet the majority of Central Africans face even more extreme deprivation, having consumption so low that it would not allow them to meet their basic caloric requirements, even if all of their consumption was devoted to food. Indeed, some 54.9 percent of Central Africans had consumption levels below the food poverty line of 197,990 XAF per person per year.²⁰ This means that 3.3 million Central Africans were food poor. This begs questions around whether CAR's agricultural productivity is sufficient for feeding its people and whether the quality of infrastructure prevents food reaching the right places, which are discussed in Chapters 5 and 6.

FIGURE 11. POVERTY HEADCOUNT RATE AND ABSOLUTE NUMBER OF POOR IN THE CENTRAL AFRICAN REPUBLIC ACCORDING TO OVERALL POVERTY LINE AND FOOD POVERTY LINE BY URBAN-RURAL



Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Food poverty line is 197,990 XAF per person per year.

Source: 2021 EHCVM and World Bank estimates.

Both overall poverty and food poverty were significantly higher in rural areas compared with urban areas, but much of this difference comes from Bangui. The overall poverty rate is 74.2 percent in rural areas compared with 61.1 percent in urban areas. This means CAR has about 1.5 million urban poor and 2.7 million rural poor, so 63.6 percent of CAR's poor people are rural dwellers. This strong urban-rural difference in poverty rates demonstrates one element of spatial inequality in CAR. However, as the regional breakdown

¹⁹ This means the overall national poverty line corresponds to around 775 USD 2017 PPP per person per year.

²⁰ This means the food poverty line corresponds to around 582 USD 2017 PPP per person per year.

below demonstrates, much of this urban-rural divide is driven by Bangui. In fact, when Bangui is removed, the poverty rate for all other urban areas is 71.2 percent – still lower than in rural areas, but with a much smaller urban-rural gap.

Overall poverty and food poverty are highly correlated with other markers of food insecurity, emphasizing the level of deprivation that they capture. To verify that the poverty estimates are indeed capturing lack of access to food, it is helpful to check them against other metrics of food security. One such metric is the World Food Program’s (WFP’s) Food Consumption Score (FCS), which measures the frequency with which different food groups are consumed over the previous seven days (WFP, 2008).²¹ The 2021 EHCVM questionnaire contains the questions needed to estimate the FCS, so that households’ food security status can be compared with their poverty status. It turns out that the poor and food poor are significantly more likely to have “poor or borderline” food security according to the FCS: among those below the food poverty line, 58.8 percent of people had poor or borderline food security; among those between the food poverty line and the overall poverty line, 35.9 percent of people had poor or borderline food security; and among the non-poor, 25.8 percent had poor or borderline food insecurity. Poverty is therefore positively correlated with food insecurity. Yet clearly many non-poor households still suffer from food insecurity too, underlining how food access can be a problem for all Central Africans.

Policymakers can also benefit from knowing the depth of poverty as well as its prevalence. Looking at the poverty headcount rate does not reveal how far below the poverty line households are; considered on its own, the poverty headcount rate *can* give policymakers the incentive to focus on lifting those who are just below the poverty line above it, rather than helping those facing deeper deprivation. It is therefore helpful to calculate the poverty gap index, which measures the average difference between poor households’ consumption and the poverty line. It is also useful to calculate the squared poverty gap index, which considers inequality among the poor: it is improved with transfers from those just below the poverty line to those a long way below it.²²

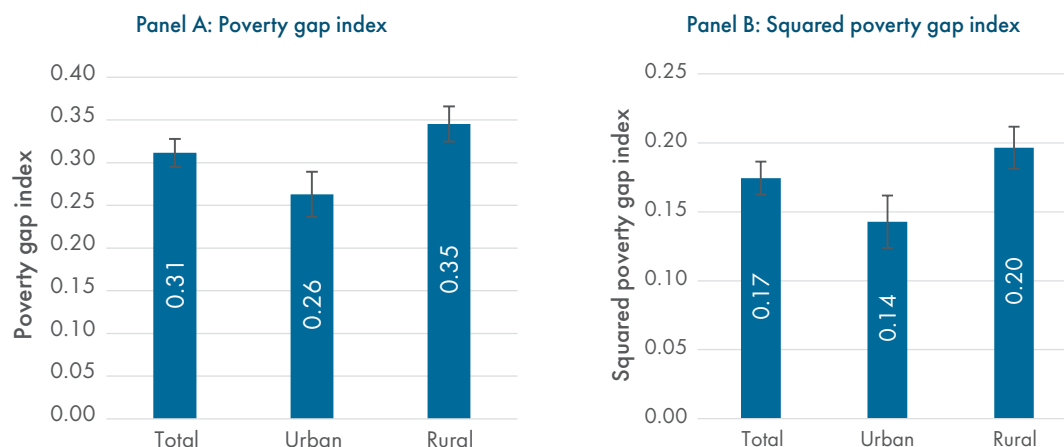
Poverty is deep in CAR, so substantial resources would be needed to eliminate it. The poverty gap index for CAR is 0.31 (Figure 12). Multiplying this by the poverty line and CAR’s population yields the theoretical cost of eradicating poverty, if assistance could be perfectly targeted and transferred to the poor: this amount would be 500 billion XAF per year, or 1.5 billion USD in 2017 PPP terms.²³ Additionally, poverty is not only more widespread in rural areas, but it is also deeper, with the poverty gap index and squared poverty gap index respectively being 0.26 and 0.14 for urban areas and 0.35 and 0.20 for rural areas. That poverty is so deep in CAR is unsurprising given the large share of the population that not only live below the overall poverty line, but also below the food poverty line, suggesting that they face particularly extreme forms of deprivation.

21 Specifically, the FCS is the weighted sum of the number of days (out of the last seven) that foods from the following eight food groups are consumed: starchy staples (weight=2); pulses (weight=3); vegetables (weight=1); fruits (weight=1); meat and fish (weight=4); milk and other dairy (weight=4); sugar (weight=0.5); and fats and oils (weight=0.5). The FCS therefore runs from 0 to 112. Those with “poor or borderline” food security have FCSs of 42 or less.

22 The poverty headcount rate is given by: $FGT_0 = \frac{H}{N}$, where H is the number of poor and N is the total population. The poverty gap index is given by $FGT_1 = \frac{1}{N} \sum_{i=1}^H \left(\frac{z - y_i}{z} \right)$, where z is the poverty line and y_i is the consumption level of individual i . The squared poverty gap index is given by $FGT_2 = \frac{1}{N} \sum_{i=1}^H \left(\frac{z - y_i}{z} \right)^2$.

23 In reality, the cost would be much higher as it would be impossible to target those below the poverty line perfectly and there would be at least some administrative and other costs in effecting these types of social transfers.

FIGURE 12. POVERTY GAP INDEX AND SQUARED POVERTY GAP INDEX IN THE CENTRAL AFRICAN REPUBLIC BY URBAN-RURAL



Note: Consumption is temporally and spatially deflated to compare with the overall national poverty line of 263,485 XAF per person per year.
Source: 2021 EHCVM and World Bank estimates.

2.4. THE CENTRAL AFRICAN REPUBLIC HAS ONE OF THE HIGHEST POVERTY RATES IN THE WORLD

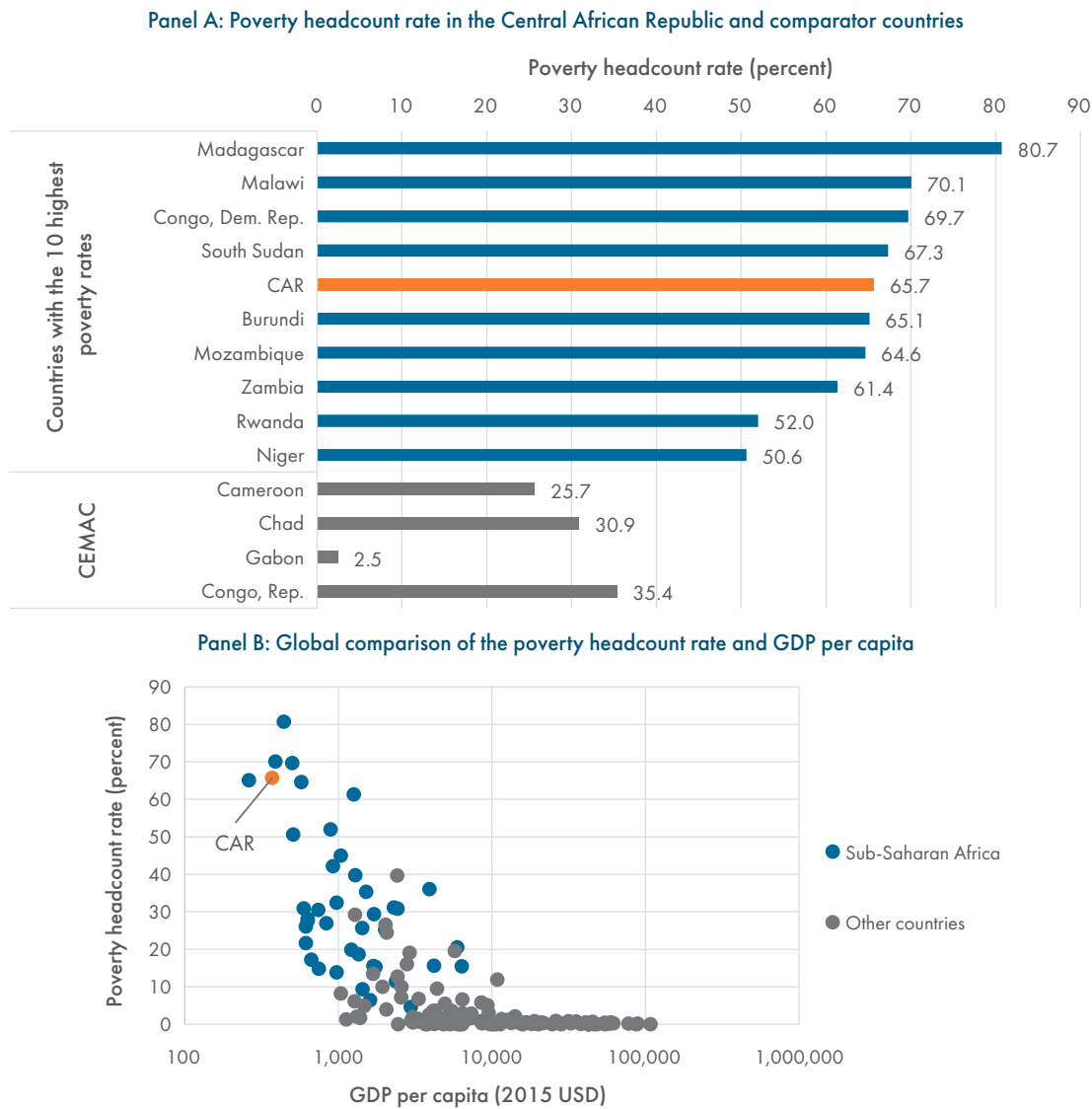
The 2021 EHCVM data can also be used to calculate poverty using international poverty lines to allow for cross-country comparisons. For international poverty estimates, only the temporal adjustments using CPI data are applied to the nominal consumption aggregate coming from survey; the spatial deflation is not applied. The temporally-deflated consumption measure can then be adjusted to USD 2017 PPP terms, by using estimates for CPI to account for inflation and by using the PPP conversion factors to account for different costs of living in different countries. Interestingly, when the poverty line is adjusted to USD 2017 PPP terms in this way, it is equivalent to 2.12 USD 2017 PPP per person per day, or just three cents lower than the extreme international poverty line of 2.15 USD 2017 PPP per person per day. This means that much of the difference between the national and international poverty estimates arises from the fact that the former use both a temporally and spatially deflated consumption aggregate while the latter use a consumption aggregate that has only been temporally deflated. That this additional type of spatial adjustment is applied is one key reason why this poverty assessment focuses on the methodology behind the national poverty estimates – it is only when trying to compare with other countries that the methodology behind the international poverty is invoked.

Applying the international poverty methodology, CAR is among the 10 poorest countries in the world. Some 65.7 percent of Central Africans live below the international poverty line of 2.15 USD 2017 PPP per person per day (Figure 13).²⁴ This means CAR has the highest poverty rate in CEMAC and only four countries – all in Sub-Saharan

²⁴ The CPI estimates used to calculate the international poverty numbers were improved since ICASEES' report that launched CAR's poverty estimates in February 2023 (ICASEES, 2023). This explains the slight difference compared with that report. All calculations using the national poverty line are unchanged.

Africa — have higher poverty rates. This is entirely consistent with the global relationship between poverty and GDP per capita: the former is high while the latter is low in CAR. Focusing closely on countries like CAR is therefore essential for reducing poverty regionally and globally.

FIGURE 13. INTERNATIONAL COMPARISONS OF THE POVERTY HEADCOUNT RATE AT THE INTERNATIONAL POVERTY LINE AND GDP PER CAPITA ESTIMATES

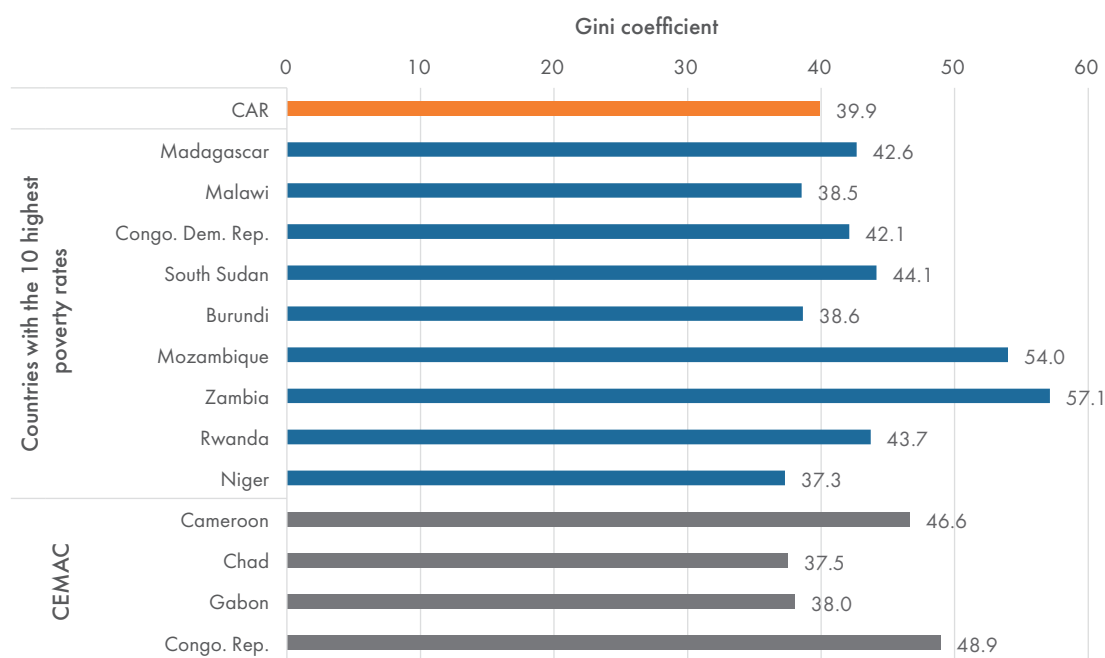


Note: CEMAC = *Communauté économique et monétaire de l’Afrique centrale* (Economic and Monetary Community of Central Africa). Consumption is temporally deflated and compared with the international poverty line of 2.15 USD 2017 PPP per person per day. Poverty estimates shown are from the latest available survey year for each country in the World Bank Poverty and Inequality Platform. In Panel A, the oldest data shown are for the Republic of Congo, which come from 2011. Uzbekistan would have one of the highest poverty rates were it included, but its latest poverty estimates come from 2003 so it is excluded. GDP per capita estimates are from 2021 and are shown with a logarithmic scale.
Source: 2021 EHCVM, World Bank Poverty and Inequality Platform, WDIs, and World Bank estimates.

2.5. OVERALL INEQUALITY IS MODERATE IN THE CENTRAL AFRICAN REPUBLIC, BUT THIS BELIES LARGE DIFFERENCES BETWEEN DIFFERENT TYPES OF HOUSEHOLDS

The Gini coefficient for CAR – which measures overall inequality – is about average for CEMAC countries, but this masks important differences between different types of households. When calculated using the temporally and spatially deflated consumption aggregate, CAR’s Gini coefficient is 39.9 (Figure 14). This places CAR in the middle of CEMAC countries, with Cameroon and the Republic of Congo having higher Gini coefficients and Chad and Gabon having lower Gini coefficients. Within CEMAC, similar patterns emerge when comparing the quantile share ratios, an alternative measure of inequality.²⁵ The breadth of poverty entails relatively small differences between households across CAR’s consumption distribution. Nevertheless, the next part of this poverty assessment considers the poverty profile, which emphasizes how different types of households – with different demographics, different household head characteristics, living in different parts of the country, with different displacement statuses – are more or less susceptible to poverty in CAR.

FIGURE 14. GINI COEFFICIENT FOR THE CENTRAL AFRICAN REPUBLIC AND COMPARATOR COUNTRIES



Note: CEMAC = *Communauté économique et monétaire de l'Afrique centrale* (Economic and Monetary Community of Central Africa). Gini coefficient for CAR calculated with temporally and spatially deflated consumption. Uzbekistan would have one of the highest poverty rates were it included, but its latest poverty estimates come from 2003 so it is excluded.

Source: 2021 EHCVM, World Bank Poverty and Inequality Platform, and World Bank estimates.

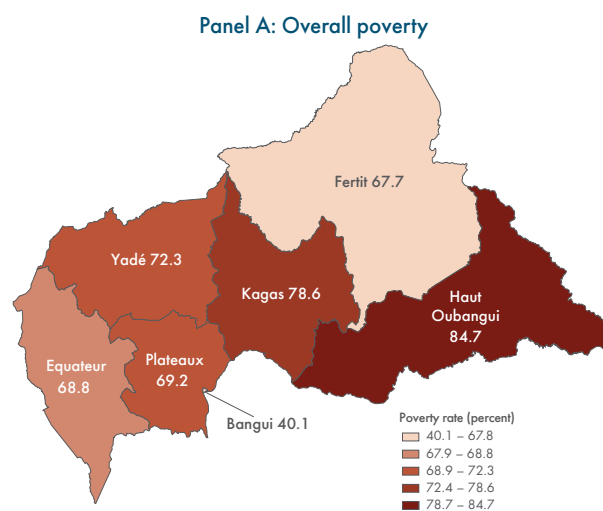
²⁵ The ratio between the share of consumption for the top 20 percent of the distribution compared with the bottom 20 is 7.6 for CAR, compared to 11.5 for Cameroon, 6.4 for Chad, 7.3 for Gabon, and 12.8 for the Republic of Congo.

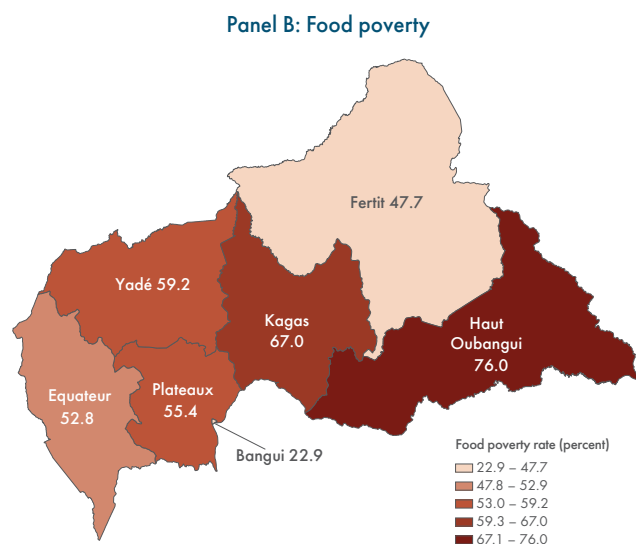
2.6. PROFILING THE POOR IN THE CENTRAL AFRICAN REPUBLIC

Knowing which households are most likely to be poor — the so called “poverty profile” — can provide important guidance for policymakers. Typically, the poverty profile could form the basis of a targeting system for picking out the poorest households for government — or other supporting agencies’ — support. Yet poverty is so widespread in CAR that complex and detailed targeting methods may not be required or appropriate. Nevertheless, it is important to know which households face particularly extreme forms of deprivation to provide overall direction to countervailing policies and programs. The analysis that follows therefore constructs distinct profiles for the overall poor and the food poor. The analysis begins by considering the simple correlation between poverty and a host of geographical, household, and individual characteristics. Then, simple regressions of poverty on these characteristics reveal the partial correlations.

There are large differences in the poverty rate between CAR’s different regions, with poverty being significantly lower in Bangui than the rest of the country. Since consumption is both temporally and spatially deflated, it is possible to compare the poverty rate in different regions using a single national poverty line. Using this approach, it emerges that the poverty rate in Bangui, at 40.1 percent, is much lower than the average for all other regions combined, at 73.3 percent (Figure 15). Indeed, Bangui’s poverty rate is less than half of the poverty rate in CAR’s poorest region, Haut Oubangui, where the poverty rate is 84.7 percent. These regional patterns strongly drive the urban-rural divide noted above, as Bangui is the country’s main urban center. Similar patterns emerge for food poverty: the share of people living below the food poverty line is 22.9 percent in Bangui, less than one-third of the share in the most food poor region, also Haut Oubangui, where food poverty is 76.0 percent. These results underscore a key cleavage of inequality in CAR, which is obscured by looking at the Gini coefficient alone. They also provide key information for policymakers wishing to use geographical criteria to design and target poverty-reducing policies and give key guidance on questions around decentralization of government functions.

FIGURE 15. POVERTY HEADCOUNT RATE AT THE OVERALL NATIONAL POVERTY LINE AND FOOD POVERTY LINE IN THE CENTRAL AFRICAN REPUBLIC’S SEVEN REGIONS



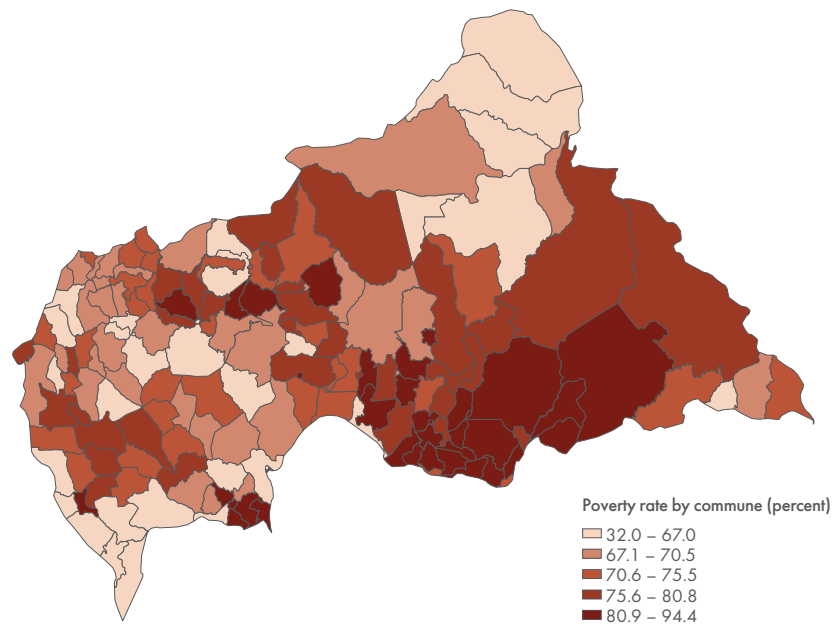


Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Food poverty line is 197,990 XAF per person per year.

Source: 2021 EHCVM and World Bank estimates.

Specialized small area estimation techniques reveal that pockets of poverty exist even within regions with lower poverty rates. Using detailed geospatial data in combination with the EHCVM data and machine learning techniques – specifically the Extreme Gradient Boosting (XGBoost) method – it is possible to produce estimates of poverty that can: (1) be disaggregated to a lower administrative level than the region, the lowest level of representativity for the EHCVM and (2) cover areas of the country that were not covered by the survey. This approach makes it possible to construct estimates of poverty for CAR’s prefectures (Administrative 1 level), sub-prefectures (Administrative 2 level), and communes (Administrative 3 level). The details of the method used to produce this poverty map are provided in Annex 2.1. Many of the communes where poverty is most highly concentrated are situated in the Haut Oubangui region, which also has the highest poverty rate (Figure 16). Yet there are also clusters of communes where poverty is very high in regions for which the poverty rate is middling relative to the rest of CAR, including in the south of Plateaux region and in the center of Yadé. Poverty is widespread across CAR but finding and reaching these pockets of poverty – at levels below the region and even the prefecture – could be one way of targeting those most at risk of extreme deprivation.

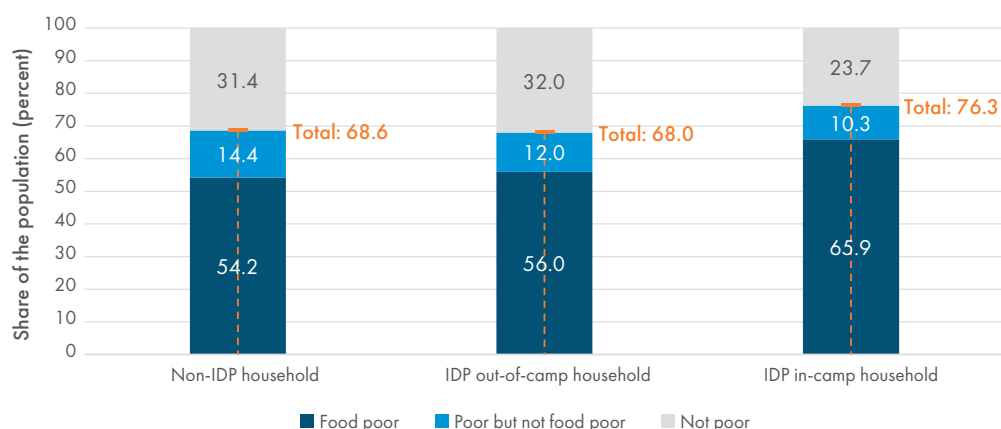
FIGURE 16. COMMUNE-LEVEL POVERTY HEADCOUNT RATE AT THE OVERALL NATIONAL POVERTY LINE



Note: Consumption is temporally and spatially deflated to compare with the overall national poverty line of 263,485 XAF per person per year.
Source: Landsat 8-C2-SR 2022, 2021 EHCVM, and World Bank estimates.

Using the 2021 EHCVM's unique sample of IDP households demonstrates that those households residing in camps are at significantly higher risk of poverty. The poverty rate for those displaced Central Africans living in camps is 76.3 percent; higher than both types of households that live outside of camps, that is non-IDP households (68.6 percent) and IDP out-of-camp households (68.0 percent) (Figure 17). This is consistent with the lower human capital outcomes (Chapter 4) and more limited livelihood opportunities (Chapter 5) of those living in camps, as well as the losses to assets and income that may have been incurred when they were displaced. There is, however, virtually no difference in the monetary poverty rate between non-IDP households and IDP out-of-camp households.

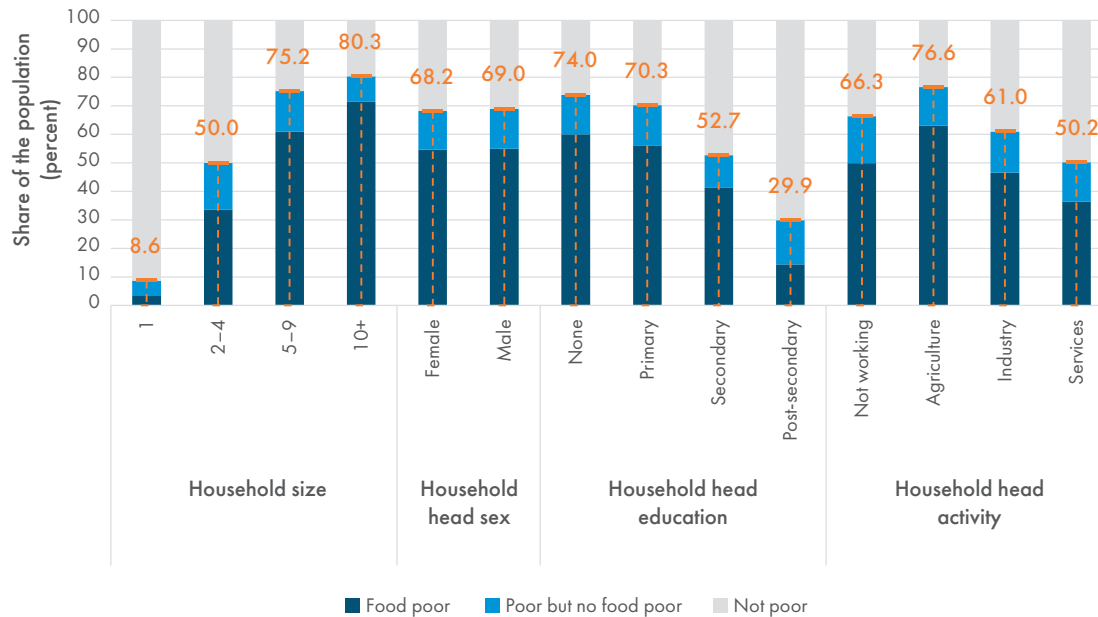
FIGURE 17. POVERTY IN THE CENTRAL AFRICAN REPUBLIC SPLIT BY HOUSEHOLD DISPLACEMENT STATUS



Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Food poverty line is 197,990 XAF per person per year.
Source: 2021 EHCVM and World Bank estimates.

As in many other countries, Central Africans are more likely to be poor if they live in larger households whose heads are less educated and primarily engaged in agriculture. Households having more members may be associated with higher fertility or polygamy, both of which are often correlated with poverty (see, for example, similar statistics for Chad (World Bank, 2021)). Indeed, as the individual-level statistics below demonstrate, polygamy appears to be associated with higher poverty in CAR too. Moreover, while the direction of the differences according to the education and sector of work of the household head are expected, the sizes of some of these differences are striking. In particular, Central Africans living in households whose heads have secondary education are 17.6 percentage points less likely to live in poverty than those living in households whose heads have primary education (Figure 18). Similarly, Central Africans living in households whose heads primarily engage in agriculture are 26.3 percentage points more likely to live in poverty than those living in households whose heads primarily engage in services. These foreshadow the close relationships between poverty and human capital (discussed in Chapter 4) and livelihoods (discussed in Chapter 5).

FIGURE 18. POVERTY IN THE CENTRAL AFRICAN REPUBLIC SPLIT BY HOUSEHOLD SIZE AND HOUSEHOLD HEAD CHARACTERISTICS

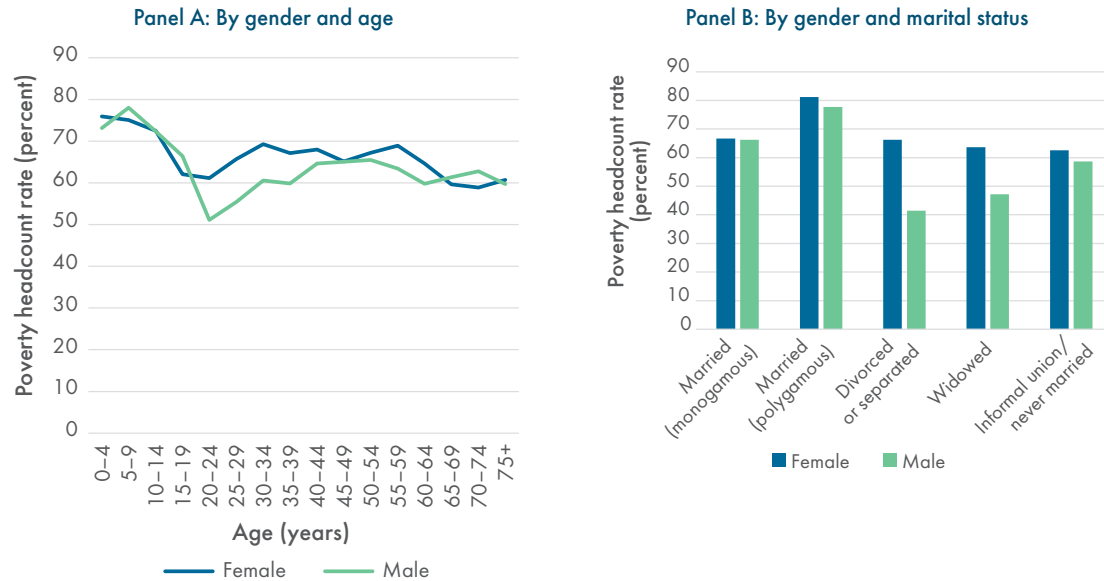


Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Food poverty line is 197,990 XAF per person per year.

Source: 2021 EHCVM and World Bank estimates.

Disaggregating the results according to individual-level characteristics suggests little difference between the poverty levels of women and girls and men and boys, but there are key gender differences when the sample is further split by age group and marital status. Breaking down the poverty rate according to individual-level characteristics should be treated with some caution because the 2021 EHCVM data only allow poverty to be estimated at the household level and not for each individual within each household; it is impossible to know the intra-household distribution of consumption. As such, it is unsurprising that the poverty rate is about the same for females (69.7 percent) and males (67.9 percent). However, pushing this disaggregation further reveals two important patterns. First, women do appear to be at significantly higher risk of poverty when they are of the age at which having and raising children is most likely – responsibilities which could limit women’s opportunities for income-generating activities (Figure 19). Second, among those who are divorced or separated or widowed, women are more likely than men to be living in poverty. It may be that such women continue to bear the responsibility of caring for children and other dependents but have lost the assets or spousal income to support them.

FIGURE 19. POVERTY IN THE CENTRAL AFRICAN REPUBLIC BROKEN DOWN BY INDIVIDUAL-LEVEL CHARACTERISTICS: GENDER, AGE, AND MARITAL STATUS



Note: Charts report poverty using the overall national poverty line of 263,485 XAF per person per year. Consumption is temporally and spatially deflated to compare with the national poverty line. Statistics on marital status focus on those aged 15 years or more.
Source: 2021 EHCVM and World Bank estimates.

Many of the household characteristics considered above are correlated with each other, so it is important to check whether their relationship with poverty is still strong when jointly considering all of the characteristics.

This can be done by regressing poverty status on all of these potential correlates of poverty at the same time, as well as other control variables such as location characteristics and the non-monetary deprivations considered in Chapter 4 (Table 2). This regression has a binary variable taking 1 if the household is below the overall national poverty line and 0 otherwise on the left-hand-side. It is therefore a linear probability model so the coefficients can be read directly as marginal effects.^{26,27}

26 The standard errors are clustered at the enumeration area level to minimize the impact of heteroskedasticity. The results are qualitatively similar if a probit model is estimated and the marginal effects at the mean are calculated.

27 A regression with the log of deflated per capita consumption as the dependent variable is reported in Table 4 in Annex 2.2. The results are qualitatively similar to the main poverty profile reported in Table 2. The only key difference is that, with log of deflated per capita consumption as the dependent variable, there is a clear partial correlation with the gender of the household head. This indicates that gender of the household head matters for the consumption levels of households that are in different parts of the distribution, away from the poverty line.

TABLE 2. REGRESSION OF POVERTY STATUS ON HOUSEHOLD CHARACTERISTICS

	Main variables only	Adding location controls	Adding non-monetary deprivations
IDP in-camp household	0.0784* (0.0447)	0.0362 (0.0537)	0.0267 (0.0555)
IDP out-of-camp household	-0.0204 (0.0230)	-0.0384* (0.0226)	-0.0319 (0.0217)
Household size	0.0387*** (0.0031)	0.0380*** (0.0030)	0.0369*** (0.0030)
Household head male	-0.0078 (0.0182)	-0.0240 (0.0177)	-0.0169 (0.0170)
Household head has primary education	-0.0299* (0.0165)	-0.0241 (0.0160)	-0.0157 (0.0223)
Household head has secondary education	-0.1599*** (0.0324)	-0.1270*** (0.0309)	-0.0838** (0.0325)
Household head has post-secondary education	-0.3215*** (0.0629)	-0.2443*** (0.0545)	-0.1489** (0.0625)
Household head primarily works in agriculture	0.0906*** (0.0314)	0.0295 (0.0310)	0.0078 (0.0287)
Household head primarily works in industry	-0.0458 (0.0418)	-0.0518 (0.0404)	-0.0453 (0.0389)
Household head primarily works in services	-0.1272*** (0.0298)	-0.1250*** (0.0293)	-0.0909*** (0.0272)
Constant	0.4572*** (0.0355)	0.5189*** (0.0479)	0.1766*** (0.0590)
N	6,411	6,411	6,411
R-squared	0.1344	0.1592	0.2063

Note: Dependent variable is a binary variable taking 1 if the household is below the overall national poverty line and 0 otherwise. This is a linear probability model so the coefficients can be read directly as marginal effects. Standard errors clustered at the enumeration area level are in parentheses.

* $p < 0,10$, ** $p < 0,05$, *** $p < 0,01$.

Source: 2021 EHCVM and World Bank estimates.

The findings that larger households, with heads who have at least secondary education and who work in services are less likely to be poor appear to be especially robust, highlighting some key pathways out of poverty. Some variables — including household size, the household head having secondary or post-secondary education, and the household head working in services — remain statistically significant in the poverty profile regressions, even when included alongside other variables. These results underline how Central Africans might be able to exit poverty. First, the fact that Central Africans in larger households are more likely to be poor echoes the relationship between fertility and poverty observed in other countries — with fewer children, households can invest more in each child’s human capital (Ainsworth, Beegle, & Nyamete, 1996; Beegle & Christiaensen, 2019). Second, the sizeable and robust coefficient on household heads having secondary and post-secondary education demonstrates the association between human capital and poverty. It appears people

have to enroll *and stay* in school to enjoy the full effects of education. Third, since households whose heads work in services are about 9.1 percentage points less likely to be poor than those whose heads work in agriculture (or who do not work), structural transformation — with workers being drawn out of agriculture — could play an important role in poverty reduction. Yet currently, the benefits of structural transformation seem a long way off for most Central Africans: while the services sector contributes 43.5 percent of GDP compared with 33.8 percent for agriculture (see Chapter 1), just 21.6 percent of Central African households have a head working in services and 62.9 percent have a head working in agriculture. This indicates that value added is much higher in services. Therefore, addressing poverty will at least partly hinge on helping workers into more productive sectors, or boosting the productivity of the sector — namely agriculture — in which they are currently concentrated. The relationship between livelihoods and poverty is discussed in more detail in Chapter 5.

Having information on a small subset of geographical and household characteristics can help to identify which Central African households are more likely to be poor or food poor. Even if there is some raw correlation between many of the variables considered in the previous sections and poverty, only a handful of the variables remain statistically significant when included in the poverty profile regressions. These indicators could be particularly useful for policymakers wishing to identify which households to prioritize for anti-poverty interventions. Yet in practice, it may be better to use variables that are simpler to collect and analyze for targeting purposes. This is especially true when poverty — and food poverty — are so widespread.

2.7. POVERTY REDUCTION IS SET TO REMAIN MUTED

Simple projections can forecast how poverty may evolve in CAR in the next five years, as well as estimating how it may have evolved in the last five years. Specifically, real sectoral GDP per capita growth projections — for forward-looking forecasts — and previous real sectoral GDP per capita growth estimates — for backward-looking backcasts — can be mapped to the 2021 EHCVM data according to the primary activity of the household head, be it agriculture, industry, or services.²⁸ Then the entire consumption distribution can be projected for previous or subsequent years and compared with the poverty line, assuming real sectoral GDP growth affects consumption growth according to some pass-through rate.²⁹ For the projections, a baseline forecast and a more pessimistic scenario is provided, the latter capturing what could happen if conflict and other challenges intensify.³⁰ Further details on the approach and its application for another country in Western and Central Africa (Nigeria) are provided in World Bank (2020).

CAR's poverty rate is unlikely to have changed significantly in the last five years and is not projected to drop significantly in the next five — it could even increase. Applying the approach described above and starting with the backcasts, it appears poverty fell very slightly since 2017, but only by around 1 percentage point at best (Figure 20). The policy environment of recent years has not been enough to lift Central Africans out of poverty. Turning to the forecasts, CAR's poverty headcount rate at the overall national poverty line is set to remain above 68 percent until 2025. Real GDP growth was estimated to have stagnated entirely in 2022, being outstripped by population growth and causing an uptick in poverty. In fact, growth in 2022 was

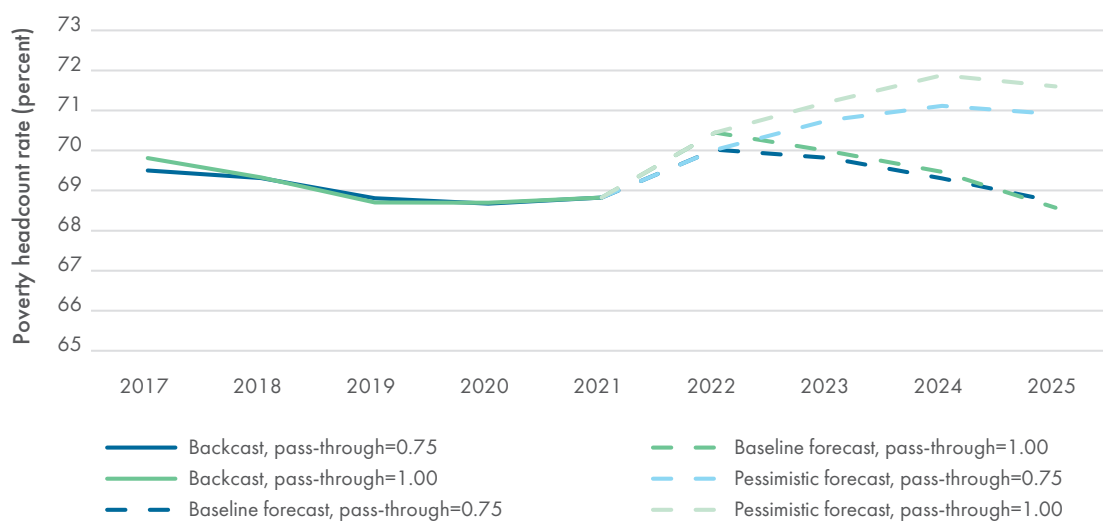
28 The growth estimates have already been deflated according to the GDP deflator, so no further price adjustments are applied. Those households whose head is not working use the weighted average of real GDP growth from agriculture, industry, and services.

29 The pass-through rates are set at 1 and 0.75. The latter reflects a World Bank estimate of pass-through for Sub-Saharan African countries (World Bank, 2018).

30 The growth estimates and forecasts used for the poverty projections are provided in Table 5 in Annex 2.3.

estimated to be negative in agriculture (-2.4 percent), which engages the most households, and in industry (-5.6 percent), with only services experiencing an increase in output (4.9 percent). Under the baseline scenario, improving growth prospects for 2023, 2024, and 2025 would subsequently bring poverty back down. Under more pessimistic growth scenarios — where violence and other factors constrain growth — poverty could go even higher. Avoiding these curbs to growth is therefore a key priority. Yet it will also be important to provide the mix of policies to promote more inclusive growth and accelerate poverty reduction — such policies are discussed in more detail in Chapter 7.

FIGURE 20. POVERTY BACKCASTS AND FORECASTS FOR THE CENTRAL AFRICAN REPUBLIC



Note: Dashed lines represent forecasts and solid lines represent backcasts. Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year.

Source: MFMOD (for macroeconomic estimates and forecasts), 2021 EHCVM, and World Bank estimates.

2.8. CONSIDERING POVERTY AND VULNERABILITY DYNAMICS

Taking a snapshot of poverty provides helpful policy guidance, but policymakers also need to know the dynamics of poverty, vulnerability, and shocks. By showing the extent of monetary poverty and its profile, this chapter reveals the scale of the poverty-reduction challenge that CAR faces and provides information on which households are most deprived as well as the broad channels — be they through interventions focused on fertility, human capital, or livelihoods — that could lift people out of poverty. Yet poverty is not a static issue. Many non-poor households are only one shock away from falling into poverty, while those who are already poor could feel deeper into poverty if shocks hit, especially as poverty is so widespread. Policymakers could therefore benefit from information on vulnerability to poverty or more extreme deprivation. These are the issues to which the poverty assessment now turns in Chapter 3.

ANNEX 2.1. PRODUCING A POVERTY MAP FOR THE CENTRAL AFRICAN REPUBLIC

Producing a poverty map for CAR relies on using machine learning methods to link granular geospatial data with welfare and poverty estimates from the 2021 EHCVM. The basic idea of this poverty mapping approach is to estimate a model for the relationship between geospatial data — which cover the entire country and which are representative within small areas — and estimates of welfare and poverty from the 2021 EHCVM. Using this model, it is possible to impute estimates for welfare and poverty at administrative levels — including prefectures (Administrative 1 level), sub-prefectures (Administrative 2 level), and communes (Administrative 3 level) — below the level of representativity (the region) that is possible with the 2021 EHCVM alone. It is also possible to provide estimates for the sub-prefectures and communes that are not directly covered by the EHCVM. The Extreme Gradient Boosting (XGBoost) algorithm, which represents a specific class of machine learning techniques, was used to estimate this relationship having proved successful in other similar small-area estimation exercises (Corral, Henderson, & Segovia, 2023).

The geospatial data used to create the poverty map cover a wide range of different geographical features at the settlement level. The geospatial data that underpin the poverty map are taken from Landsat 8-C2-SR 2022, which provides information on features related to urbanization, vegetation, and presence of water, and other variables that could potentially be linked to welfare and poverty. The list of features and their relative importance for the model at each administrative level are shown in Table 3. To ensure these data cover areas where people actually live, they were extracted at the settlement level and the geolocation of these settlements was used to link to the EHCVM data. The settlement locations were created using high-resolution imagery showing building footprints, area, and density (GRID3, 2021). There are 70,238 settlements that cover all the 17 prefectures, 72 subprefectures, and 171 communes. This means that the results can be aggregated up to the desired administrative level, without any gaps. The only place where this is not possible is in Bangui, where there are too few distinct settlements to adequately distinguish between the communes (known in Bangui as arrondissements). Therefore, for Bangui, using the direct estimates coming from the EHCVM is a more tenable approach.

TABLE 3. LIST OF GEOSPATIAL FEATURES USED TO CONSTRUCT A POVERTY MAP FOR THE CENTRAL AFRICAN REPUBLIC

Feature	Definition	Feature importance for each model			
		Region	Admin 1	Admin 2	Admin 3
MNDWI	Modified Normalized Difference Water Index	24.71	2.08	1.57	2.24
BRBA	Band Ratio for Built-up Area	15.03	3.51	1.99	4.85
NBAI	Normalized Built-up Area Index	19.87	14.36	4.19	5.34
NDSI	Normalized Difference Snow Index	0.00	2.82	3.28	5.22
VARI	Visible Atmospherically Resistant Index	22.01	12.12	7.50	7.10
SAVI	Soil Adjusted Vegetation Index	16.12	10.93	12.54	11.37

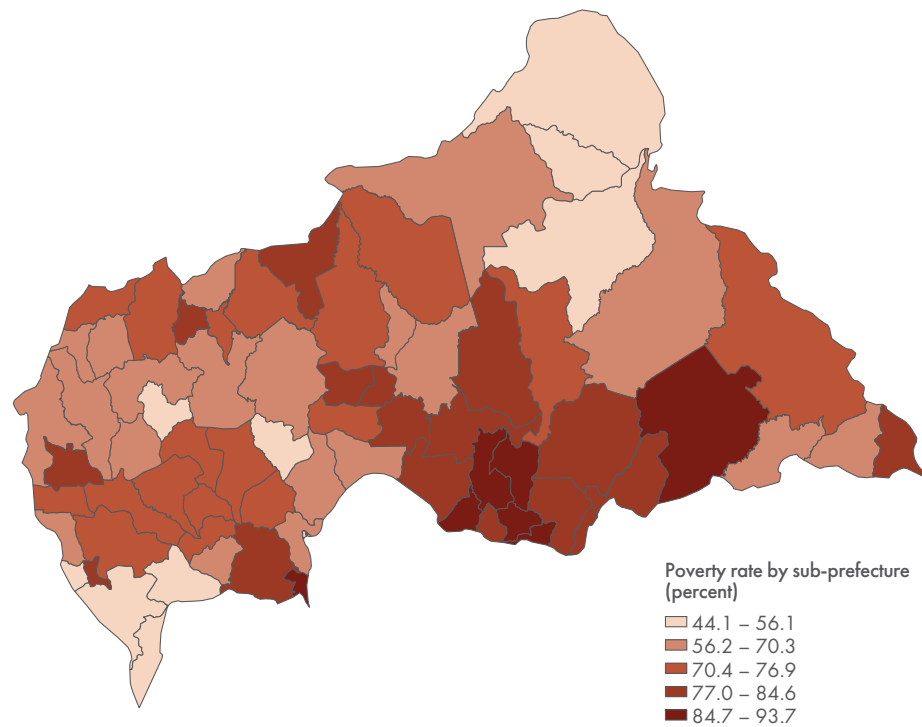
Feature	Definition	Feature importance for each model			
		Region	Admin 1	Admin 2	Admin 3
OSAVI	Optimized Soil Adjusted Vegetation Index	1.08	6.00	8.13	12.39
NDMI	Normalized Difference Moisture Index	0.00	11.15	9.43	7.31
EVI	Enhanced Vegetation Index	0.00	14.39	9.88	5.73
NDVI	Normalized Difference Vegetation Index	0.00	0.00	5.68	8.60
NDBI	Normalized Difference Built-up Index	0.00	13.70	10.83	7.09
SR	Simple Ratio	0.00	0.00	4.52	4.85
ARVI	Atmospherically Resistant Vegetation Index	1.17	7.20	8.34	8.53
UI	Urban Index	0.00	1.75	12.11	9.37

Note: Feature importance results are all percentages.

Source: Landsat 8-C2-SR 2022.

The results suggest that there is considerable variation within regions and within prefectures. The key value added of constructing granular poverty maps is that they can reveal variation in the concentration of poverty *within* the larger geographical areas at which the initial household survey is already representative. It is not possible to test formally the differences between these lower administrative levels (that is, between sub-prefectures and communes) within higher-level areas (such as regions and prefectures), as there is no clear way of calculating the standard errors that would permit this. Yet there do appear to be large differences in the point estimates for the poverty rates between sub-prefectures (see Figure 21) and communes (see Figure 16) within prefectures and regions.

FIGURE 21. SUB-PREFECTURE-LEVEL POVERTY HEADCOUNT RATE AT THE OVERALL NATIONAL POVERTY LINE



Note: Consumption is temporally and spatially deflated to compare with the overall national poverty line of 263,485 XAF per person per year.
Source: Landsat 8-C2-SR 2022, 2021 EHCVM, and World Bank estimates.

Two checks support the validity of the small-area poverty estimates produced for CAR using XGBoost. First, even though direct estimates of poverty at the prefecture, sub-prefecture, and commune level are not technically representative, it is still common to compare the estimates of poverty from XGBoost with such direct estimates (see, for example, Chi, Fang, Chatterjee, and Blumenstock (2022)). Doing this by regressing the direct poverty estimates from the communes where they are available on the corresponding XGBoost estimates produces a R-squared and of 0.810. The R-squared values are even higher for the sub-prefecture- (0.858), prefecture- (0.982), and region-level (0.997) models. This means the proportion of the direct poverty estimates that can be explained by the XGBoost estimates is relatively high and, at least for the sub-prefecture level and above, is in line with other similar models estimated for Sub-Saharan Africa (Lee & Braithwaite, 2022). Second, turning to the prediction errors, the model residuals are relatively well aligned to the theoretical quantiles of a normal distribution, despite the presence of some outliers. The supports the functional form assumptions that underpin the model.

ANNEX 2.2. ADDITIONAL POVERTY PROFILE REGRESSION**TABLE 4.** REGRESSION OF LOG OF CONSUMPTION ON HOUSEHOLD CHARACTERISTICS

	Main variables only	Adding location controls	Adding non-monetary deprivations
IDP in-camp household	-0.2465*** (0.0777)	-0.1696* (0.0885)	-0.1520* (0.0871)
IDP out-of-camp household	-0.0264 (0.0435)	0.0085 (0.0444)	-0.0036 (0.0420)
Household size	-0.0794*** (0.0049)	-0.0778*** (0.0045)	-0.0746*** (0.0045)
Household head male	0.0920*** (0.0276)	0.1197*** (0.0259)	0.1086*** (0.0244)
Household head has primary education	0.0520* (0.0273)	0.0380 (0.0255)	-0.0004 (0.0318)
Household head has secondary education	0.2475*** (0.0470)	0.1840*** (0.0437)	0.0826* (0.0466)
Household head has post-secondary education	0.6115*** (0.0775)	0.4669*** (0.0638)	0.2787*** (0.0724)
Household head primarily works in agriculture	-0.1893*** (0.0502)	-0.0767 (0.0490)	-0.0384 (0.0456)
Household head primarily works in industry	0.1019 (0.0635)	0.1048* (0.0591)	0.0980* (0.0547)
Household head primarily works in services	0.2289*** (0.0500)	0.2219*** (0.0474)	0.1649*** (0.0440)
Constant	12.6008*** (0.0577)	12.5201*** (0.0688)	13.1242*** (0.0714)
N	6,411	6,411	6,411
R-squared	0.2227	0.2653	0.3301

Note: Dependent variable is the log of deflated per capita consumption. Standard errors clustered at the enumeration area level are in parentheses.

* p<0,10, ** p<0,05, *** p<0,01.

Source: 2021 EHCVM and World Bank estimates.

ANNEX 2.3. GROWTH ESTIMATES AND FORECASTS USED FOR POVERTY PROJECTIONS

TABLE 5. GROWTH ESTIMATES AND FORECASTS USED FOR POVERTY PROJECTIONS

Year	Baseline				Pessimistic				Population growth
	Overall	Agriculture	Industry	Services	Overall	Agriculture	Industry	Services	
2018	3.8	0.6	4.7	5.9	3.8	0.6	4.7	5.9	2.0
2019	3.0	4.5	3.5	1.6	3.0	4.5	3.5	1.6	2.2
2020	1.0	5.0	0.6	-1.9	1.0	5.0	0.6	-1.9	2.6
2021	1.0	2.9	-0.4	0.1	1.0	2.9	-0.4	0.1	2.1
2022e	0.0	-2.4	-5.6	4.9	0.0	-2.4	-5.6	4.9	2.2
2023f	3.0	3.2	0.1	4.1	0.0	1.3	-1.7	-0.2	2.2
2024f	3.8	3.3	0.3	5.8	0.5	1.1	-1.8	1.1	2.3
2025f	3.8	3.4	0.7	5.5	3.0	2.8	0.0	4.4	2.3

Note: e=estimate, f=forecast.

Source: World Bank Macro-Fiscal Model and World Bank estimates.

3. ALMOST ALL CENTRAL AFRICANS ARE ONE SHOCK AWAY FROM FALLING INTO POVERTY

CHAPTER 3 KEY MESSAGES

- ▶ Around 9 in 10 Central Africans are vulnerable to falling into poverty — or deeper into poverty, for those who are already poor — meaning that they have a 50 percent chance of being below the national poverty line in the next two years
- ▶ Moreover, more than three-quarters of Central Africans are vulnerable to falling below the food poverty line, demonstrating their exposure to more extreme forms of deprivation
- ▶ Virtually all displaced Central Africans living in camps are vulnerable to falling below the food poverty line
- ▶ Shocks are prevalent in the Central African Republic, especially those related to security and especially for those living in camps; almost 6 in 10 Central Africans experienced a security shock in the previous three years
- ▶ Many Central Africans adopt negative coping strategies in response to shocks — including reducing food consumption — which could further trap them in poverty
- ▶ Social safety nets are too scarce and are not well targeted enough for meeting the needs of the Central African Republic's vast poor and vulnerable population

This chapter assesses Central African households' vulnerability to falling into — or deeper into — poverty when negative shocks hit. As discussed in Chapter 1, CAR faces various crises related to conflict, climate, and rising prices, which could feed through to households' incomes and livelihoods. These shocks could drag those households who are just above the poverty line below it. Yet, perhaps more importantly for CAR given the prevalence of poverty shown in Chapter 2, shocks can also push households that are already poor towards more extreme forms of deprivation, including pushing them below the food poverty line. To explore these issues, this chapter first considers the size and profile of CAR's vulnerable population — examining vulnerability to both overall poverty and food poverty — by analyzing the variance of consumption. Second, the chapter assesses the types of negative shocks suffered by Central African households, demonstrating that conflict-related shocks are especially widespread. Third, the chapter investigates the coping strategies that households deploy to cope with shocks, showing how these could have longer-term consequences on Central Africans' prospects for escaping poverty. Finally, the chapter considers the safety nets and other support programs that households may receive, showing that coverage is low and that expansion would be warranted.

3.1. USING THE VARIANCE OF CONSUMPTION TO ASSESS VULNERABILITY

Identifying households that are vulnerable to falling into poverty – or into more extreme forms of deprivation – is especially important in contexts like CAR where shocks, stresses, and uncertainty are common. Some of the overall shocks that CAR confronts – including those related to conflict, displacement, climate, and rising prices – are explained in Chapter 1. This chapter uses the EHCVM data to explore vulnerability to the shocks that households themselves report facing. Whereas households' poverty status characterizes their current consumption levels with respect to the poverty line, vulnerability to poverty measures households' likelihood of falling below the poverty line in the future. A household may be vulnerable to poverty but if, leading up to the survey, the household has a good year – such as good rains resulting in a bountiful harvest – their consumption may be above the poverty line when they are interviewed. Yet the same household may be below the poverty line were a drought or another negative shock to have occurred in the period leading up to the survey. Therefore, while the poverty status gives a good snapshot of the population's welfare, it may give an incomplete depiction of the likelihood of being in poverty in the future.

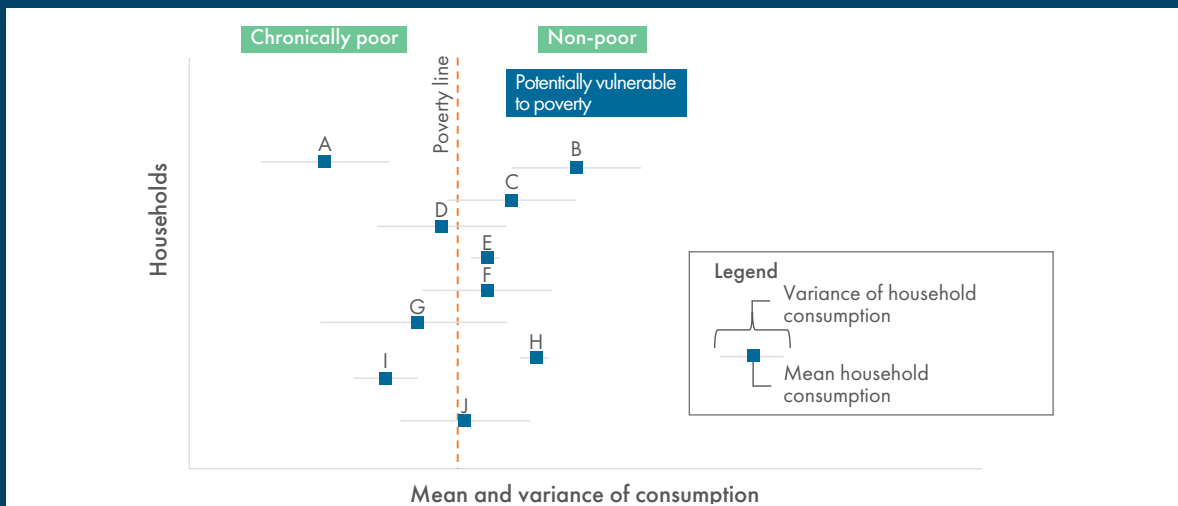
To identify which households are vulnerable, this chapter examines the variance of household consumption; households that have a 50 percent chance of being in poverty in the next two years are classified as vulnerable. Specifically, the chapter applies the method presented by Günter and Harttgen (2009), which models the household- and community-level factors that drive variance in consumption – the technical details of the approach are provided in their paper and in Annex 3.1.³¹ Households below the poverty line are usually classed as vulnerable by construction – they are already poor. Yet for those households above the poverty line, their chances of falling into poverty depend on how much their consumption varies. If the variance is high, then they may have a sufficient chance of falling into poverty in the future to be classified as vulnerable. To anchor the approach, households are classified as vulnerable if the variation in their consumption means that they have at least a 50 percent chance of falling into poverty in the next two years (Pritchett, Suryahadi, & Sumarto, 2000). This approach is illustrated in more detail in Box 2, while Box 3 explains how the approach applied in this chapter differs from other methods for assessing vulnerability, including the method applied in the report that accompanied ICASEES's launch of CAR's official poverty estimates (ICASEES, 2023).

31 The Günter and Harttgen (2009) paper builds on previous work by Chaudhuri (2002) and Christiaensen and Subbaro (2005). Gao, Vinha, and Skoufias (2021) provide a tool for implementing the approach.

BOX 2. USING VARIABILITY IN CONSUMPTION TO EXAMINE VULNERABILITY

Households' vulnerability depends on the level of their expected consumption relative to the poverty line and its variance. This is best illustrated by considering a simple example with a population of 10 households (Figure 22). The average per capita consumption of each household is shown by the blue squares, while the horizontal lines show the variance. Depending on precisely when a household survey was collected, the poverty rate could range anywhere from 20 percent (Households A, and I) to 70 percent (Households, A, C, D, F, G, I, and J). Households A and I are always below the poverty line, but households C, D, F, G, and J only fall below the poverty line under certain conditions, including whether those households experienced shocks. Households B, E, and H are not expected to fall below the poverty line, regardless of any shocks. As such, knowing the current or even the expected consumption is not sufficient for determining whether a household is vulnerable. While Households E and F have similar expected consumption levels, the variance differs such that Household F is vulnerable to poverty whereas Household E is not. In the example shown, the vulnerability rate — which combines those whose expected consumption level is below the poverty line with those at risk of falling into poverty — is 70 percent.

FIGURE 22. ILLUSTRATION OF HOW TO USE VARIANCE IN CONSUMPTION TO DEFINE VULNERABILITY



Source: Vinha (2023).

Data on household consumption and household- and community-level characteristics are used to estimate the variance in household consumption, making it possible to classify which households are vulnerable. Specifically, a full “random coefficient” model, can be estimated (as explained in Annex 3.1), from which the household-level — or idiosyncratic — variance, community-level — or covariate — variance, and total variance in household consumption can be extracted. This estimate for the variance can then be used to calculate the probability of being below the poverty line in a given year. Households are classified as vulnerable if they have at least a 50 percent chance of being in poverty in the next two years.

BOX 3. ALTERNATIVE METHODS FOR EXAMINING VULNERABILITY

A simpler, alternative method for measuring vulnerability would involve setting a static higher threshold — or “vulnerability line” — some distance above the poverty line. This hinges on the assumption that those just above the poverty line are most vulnerable to falling below it, notwithstanding the variance in their consumption. In some countries, this is grounded in the use of panel data, which show that households between the poverty line and the vulnerability line have a certain chance of falling into poverty. For example, in Indonesia, panel data from the Indonesian Family Life Survey (IFLS) demonstrated that households between 1 and 1.5 times the poverty line had a 10 percent chance of falling back into poverty each year, so the vulnerability line was defined at 1.5 times the poverty line accordingly (World Bank, 2019).

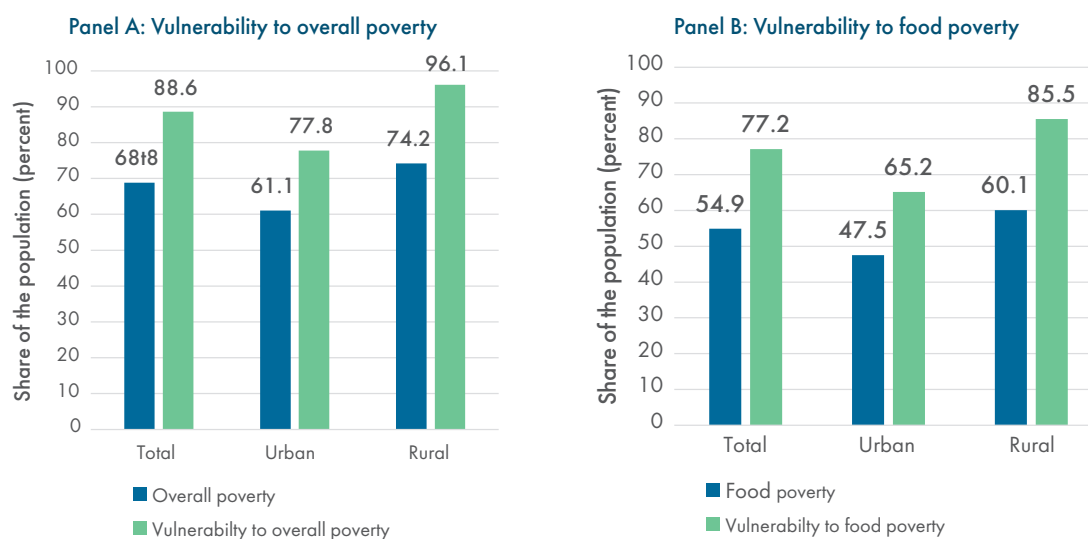
ICASEES’s launch of CAR’s official poverty numbers in 2023 also included statistics on vulnerability measured according to a vulnerability line. In particular, the report accompanying the launch of CAR’s poverty numbers presented the share of Central Africans living between 1 and 1.5 times the poverty line, classifying these households as vulnerable.

While these simpler, alternative approaches are often useful, this poverty assessment uses an approach based on households’ expected consumption and its variance. This is because the observed level of consumption at a single point in time in a survey like the EHCVM is a static measure (of poverty), which may be misleading if household consumption is highly variable due to exposure to different shocks. In a particular survey there will be households that are below the poverty line because they had a very bad year but also many households that had a good year and who are therefore above the poverty line, but under slightly different conditions would fall below it. The approach adopted in this poverty assessment allows explicitly for this, by considering and decomposing the variance of consumption.

3.2. VIRTUALLY ALL CENTRAL AFRICANS ARE VULNERABLE TO OVERALL POVERTY, AND MORE THAN THREE-QUARTERS ARE VULNERABLE TO FOOD POVERTY

Using the variance of consumption to assess vulnerability suggests that almost 9 in 10 Central Africans are either poor already or are vulnerable to falling into poverty. While 68.8 percent of Central Africans live below the national poverty line, some 88.6 percent can be classed as being vulnerable to poverty — meaning that they have at least a 50 percent chance of being in poverty in the next two years (Figure 23). As with poverty, vulnerability is especially widespread in rural areas. Some 96.1 percent of rural dwellers are vulnerable to poverty at the overall national poverty line, compared with 77.8 percent of urban dwellers. These results underline the point from Chapter 2 that complex and detailed methods for targeting government or humanitarian assistance may be less relevant for CAR than other countries. Most people are poor, and almost everyone is vulnerable to poverty. This further motivates considering vulnerability to more extreme forms of deprivation, including food poverty; that is, the household having insufficient resources to feed its members, even if the entire household budget were devoted to food.

FIGURE 23. VULNERABILITY TO OVERALL POVERTY AND FOOD POVERTY IN THE CENTRAL AFRICAN REPUBLIC BY URBAN-RURAL



Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Food poverty line is 197,990 XAF per person per year. Vulnerability calculated according to method presented by Günter and Harttgen (2009).
Source: 2021 EHCVM and World Bank estimates.

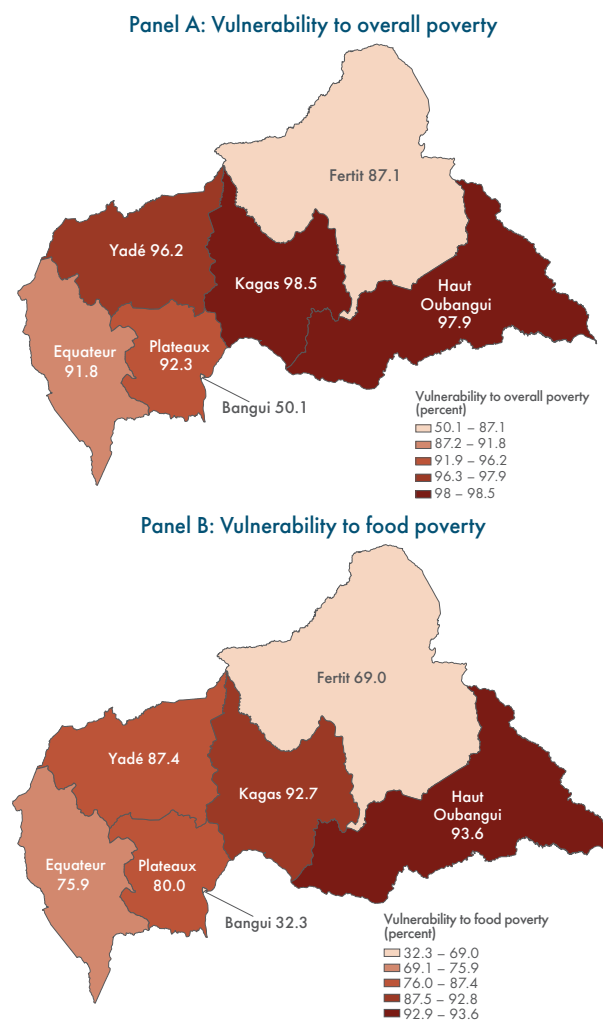
More than three-quarters of Central Africans are also vulnerable to food poverty, demonstrating their exposure to very extreme forms of deprivation. Around 54.9 percent of Central Africans are food poor, meaning that they would lack the resources to adequately feed themselves, even if they spent all of their money on food – this represents an even more severe form of deprivation. Variation in consumption is such that about 77.2 percent of Central Africans are vulnerable to food poverty – they have a 50 percent chance of being food poor in the next two years. As such, finding ways to select and target individuals who are vulnerable to food poverty is also difficult since so many Central Africans are already below the food poverty line or are at risk of falling below it when shocks hit.

Vulnerability is mainly a product of people already being poor. One feature of the approach for assessing vulnerability applied in this chapter is that it is possible to identify those who are “structurally” or “transitorily” vulnerable to poverty. Structural vulnerability (or “poverty-induced vulnerability”) captures those whose assets and human capital are so low that under almost all states of the world – regardless of shocks – they will be below the poverty line. Transitory vulnerability (or “risk-induced vulnerability”) captures those individuals whose assets and human capital are high enough to keep them above the poverty line during an average year, but who could be pushed below the poverty line by a shock – like a bad harvest, illness, or conflict. Unsurprisingly, most vulnerability in CAR is structural, as poverty is so high. At the overall poverty line, just 84.8 percent of vulnerability is structural, while at the food poverty line 71.0 percent of vulnerability is structural. This is a natural consequence of poverty and food poverty already being so prevalent.

3.3. THE VULNERABILITY PROFILE MIRRORS THE POVERTY PROFILE

As is the case with poverty, vulnerability at both the overall and food poverty lines is significantly lower in Bangui than the rest of CAR. Vulnerability to poverty measured at the overall poverty line is 50.1 percent in Bangui, significantly lower than the average for all the other regions combined of 94.5 percent (Figure 24). Moreover, vulnerability to food poverty is 32.2 percent in Bangui, compared to 84.1 percent for the rest of country. Outside the nation's capital, virtually everyone is not only vulnerable to poverty – the overwhelming majority are vulnerable to more extreme deprivation too. Taking into account the regions' populations, these results mean that the Plateaux and Yadé regions are home to the highest numbers of vulnerable people: about 1.1 million vulnerable people live in Plateaux and 1.2 million live in Yadé.

FIGURE 24. VULNERABILITY TO OVERALL POVERTY AND FOOD POVERTY IN THE CENTRAL AFRICAN REPUBLIC BY REGION

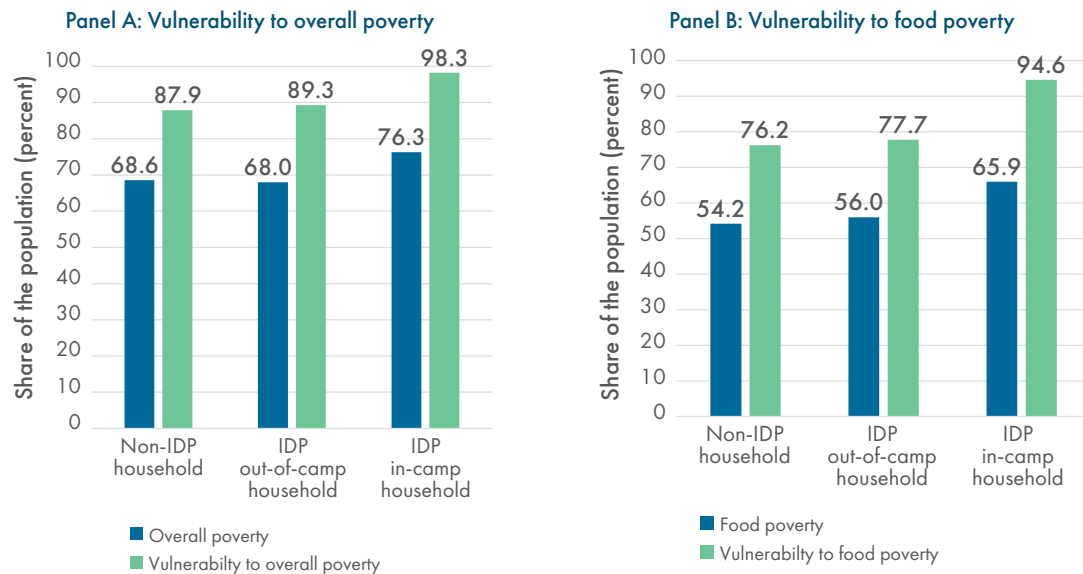


Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Food poverty line is 197,990 XAF per person per year. Vulnerability calculated according to method presented by Günter and Harttgen (2009).

Source: 2021 EHCVM and World Bank estimates.

Vulnerability to food poverty is almost universal for displaced Central Africans living in camps. Some 98.3 percent of IDPs living in camps are vulnerable to falling below the overall national poverty line, while 94.6 percent are also vulnerable to falling below the food poverty line (Figure 25). This is significantly higher than the vulnerability rates for non-IDP households and IDP out-of-camp households. The results underline the highly precarious situation of those living in camps. Not only are almost all displaced people living in camps just one shock away from poverty, but they are also only one shock away from the extreme deprivation associated with being food poor too.

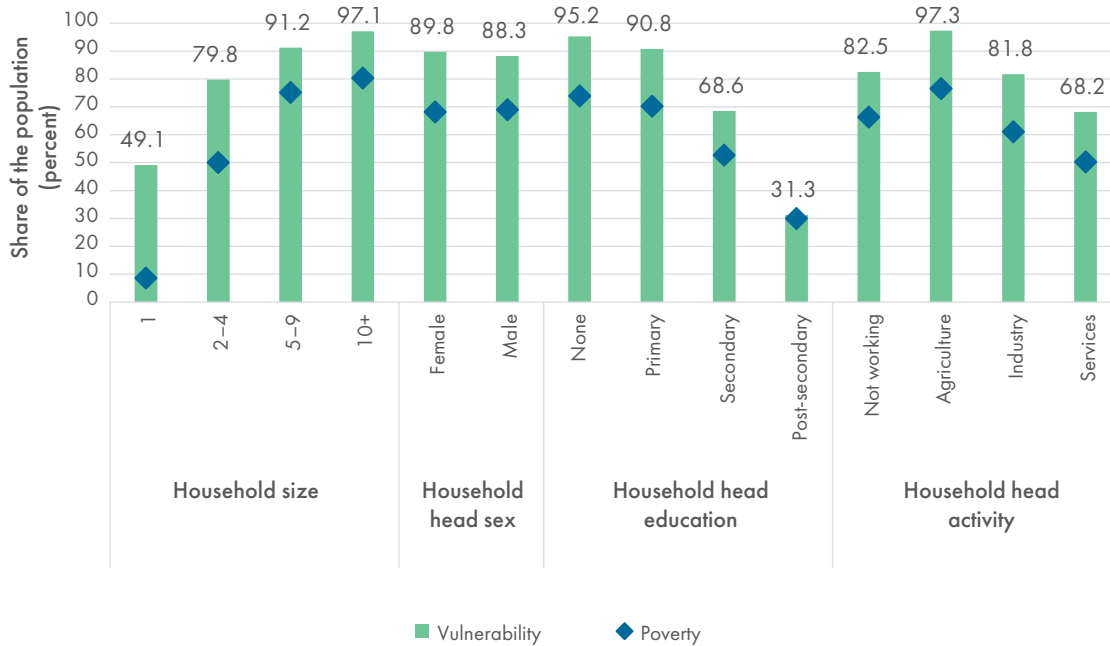
FIGURE 25. VULNERABILITY TO OVERALL POVERTY AND FOOD POVERTY IN THE CENTRAL AFRICAN REPUBLIC BY HOUSEHOLD DISPLACEMENT STATUS



Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Food poverty line is 197,990 XAF per person per year. Vulnerability calculated according to method presented by Günter and Harttgen (2009). Source: 2021 EHCVM and World Bank estimates.

Vulnerability is more common in large households whose heads are less educated and primarily engaged in agriculture. This entirely echoes the results of the poverty profile presented in Chapter 2, although vulnerability is – by construction – more widespread than poverty across all types of households (Figure 26). Therefore, policy interventions built around fertility, human capital, and livelihoods are likely to support vulnerability reduction as well as poverty reduction.

FIGURE 26. VULNERABILITY TO OVERALL POVERTY IN THE CENTRAL AFRICAN REPUBLIC SPLIT BY HOUSEHOLD SIZE AND HOUSEHOLD HEAD CHARACTERISTICS



Note: Data labels refer to vulnerability rate. Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Vulnerability calculated according to method presented by Günter and Harttgen (2009).
Source: 2021 EHCVM and World Bank estimates.

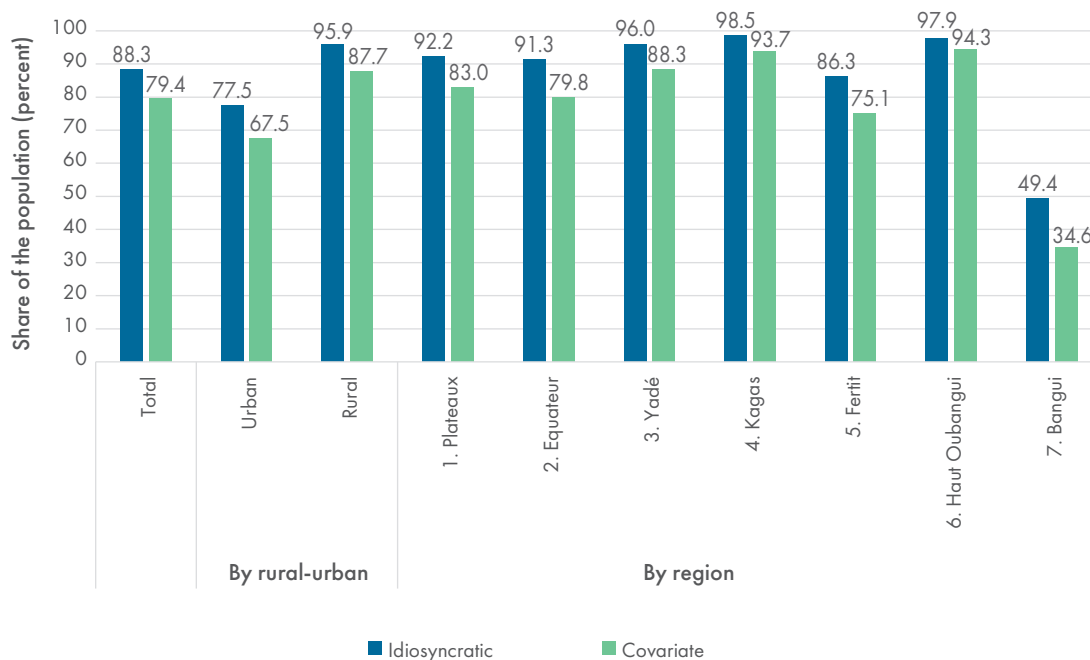
3.4. VULNERABILITY TO HOUSEHOLD-SPECIFIC SHOCKS IS HIGHER THAN VULNERABILITY TO SHOCKS THAT AFFECT THE WHOLE COMMUNITY

Central Africans are more susceptible to being pushed into poverty by household-specific shocks than those shocks that affect the whole community. By decomposing the variance in consumption according to household- and community-level characteristics, the methodology applied above can be used to isolate vulnerability to idiosyncratic shocks and vulnerability to covariate shocks. The technicalities of this exercise are described in more detail in Günter and Harttgen's (2009) paper and in Annex 3.1. Vulnerability to idiosyncratic shocks appears to be higher than vulnerability to covariate shocks across urban and rural areas and across CAR's seven regions (Figure 27).^{32,33} The relative importance of vulnerability to idiosyncratic shocks appears to be higher in Bangui than in CAR's other regions. These results provide a sketch of the types of shocks against which policymakers may wish to try and build households' resilience. However, these findings are built only on decomposing the variance of consumption — this is not the same as looking at the actual shocks that households faced. The analysis can therefore be pushed further by looking at the specific shocks that households in the EHCVM sample themselves report experiencing. This is the focus of the next section.

³² The same is true across households with different displacement statuses.

³³ This finding holds for vulnerability to both overall poverty and food poverty.

FIGURE 27. VULNERABILITY TO OVERALL POVERTY IN THE CENTRAL AFRICAN REPUBLIC DUE TO IDIOSYNCRATIC AND COVARIATE SHOCKS BY URBAN-RURAL AND REGION



Note: Consumption is temporally and spatially deflated to compare with national poverty lines. Overall poverty line is 263,485 XAF per person per year. Vulnerability calculated according to method presented by Günter and Harttgen (2009).
Source: 2021 EHCVM and World Bank estimates.

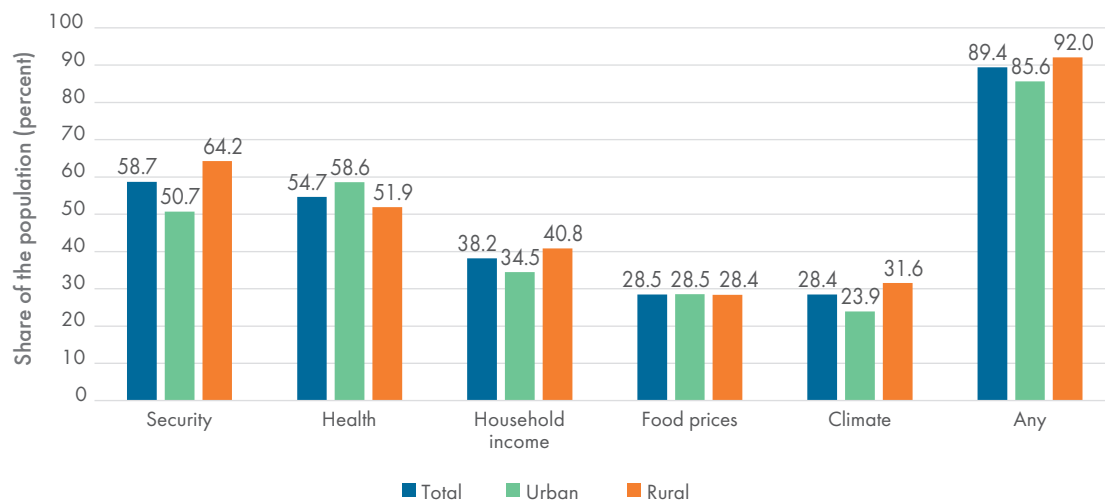
3.5. SHOCKS ARE PREVALENT IN THE CENTRAL AFRICAN REPUBLIC, ESPECIALLY THOSE RELATED TO CONFLICT

The EHCVM data provide direct information on the shocks experienced by households in CAR. Given the conflict-, climate-, and price-related crises described in Chapter 1, it would seem likely that shocks — defined as adverse events that lead to a loss of household income, a reduction in consumption, or a loss of productive assets — would be common in CAR (Dercon, Hoddinott, & Woldehanna, 2005). The 2021 EHCVM collected rich data on the shocks that households experienced in the three years prior to the survey, providing information not only on the specific types of shocks but also the characteristics of the households that experienced them, including their poverty status. This entails looking at what actually happened to households in the past, rather than relying on examining the variance of consumption to assess vulnerability, as in the previous section. Understanding the profile of shocks matters because, as the previous sections show, so many Central African households are only one shock away from poverty and even food poverty.

Almost 9 in 10 Central Africans suffered some kind of shock in the past three years, with security shocks being the most prevalent. Taking all the types of shocks recorded in the EHCVM together — including those related to conflict, health, household incomes, food prices, and climate — some 89.4 percent of the population lived in

a household that had experienced a shock in the three years prior to the survey (Figure 28).³⁴ The typology of shocks applied here does not map into the distinction between idiosyncratic and covariate shocks applied in the previous section.³⁵ With shocks, stresses, and uncertainty being so common, even non-poor Central African households could soon find themselves below the poverty line, given the rates of vulnerability presented in the previous sections. Security shocks were the most widespread, affecting 58.7 percent of the population. Even though this category of shocks includes crime, the vast majority of security shocks that households reported experiencing were related to armed conflict. Indeed, about half (48.0 percent) of the population had reported facing the effects of armed conflict in the three years prior to the survey. Security shocks can have both direct and indirect effect on livelihoods. Attacks by armed groups are often associated with the destruction of household and community property. Assets, including livestock and household goods, could be lost. As people are displaced, social capital — meaning the networks and trust that help society function — may also be eroded (Quetulio-Navarra, Niehof, & van der Vaart, 2013). As such, security shocks can have profound implications for people’s income-generating activities and their chances of escaping poverty in the future.

FIGURE 28. SHOCKS EXPERIENCED IN THE CENTRAL AFRICAN REPUBLIC BY URBAN-RURAL



Note: Shocks reported for the three years prior to the EHCVM interview.
Source: 2021 EHCVM and World Bank estimates.

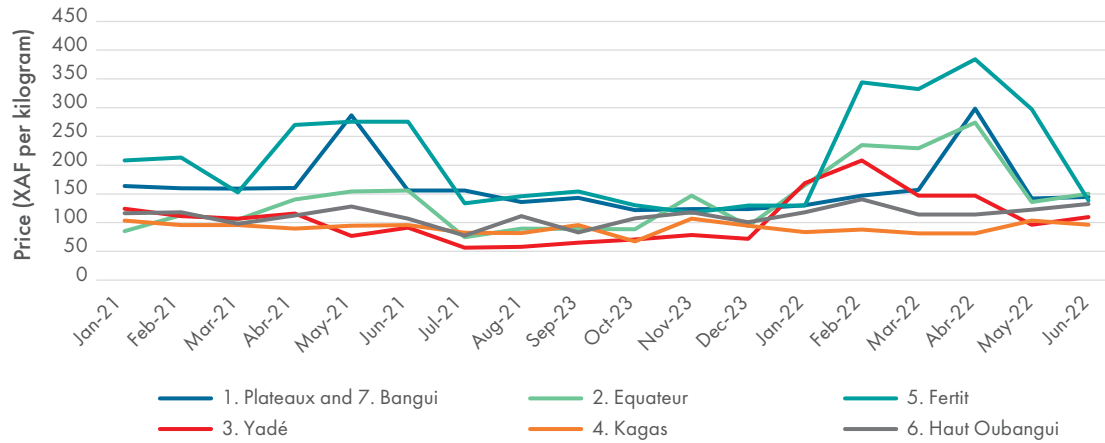
While less common than other shocks, almost one-third of Central Africans lived in households experiencing rising food prices, echoing CAR’s price data. Specifically, 28.5 percent of the population lived in a household that had experienced a food price shock in the three years prior to the EHCVM. As discussed in Chapter 1, CAR’s overall inflation rate, which is — and is projected to remain — in single digits, masks more significant variation in key staple goods. For example, prices of cassava — one of the most important staple foods in the consumption basket — vary significantly, even between consecutive months (Figure 29). Moreover, these

³⁴ For parsimony, different types of shocks in the EHCVM data were grouped. Security shocks include: theft of money, assets, harvest, or animals; farmer-herder conflict; and armed conflict, violence, or insecurity. Health shocks include: serious illness or accident; death of a household member; and COVID-19. Household income shocks include: increased rate of crop disease; increased rate of animal disease; attacks by locusts or other pests; drop in price of agricultural products; increase in price of agricultural inputs; end of regular transfers from other households; loss of non-agricultural income; bankruptcy of a non-agricultural business; loss of salary; and loss of salaried job. Climate shocks include: droughts or irregular rains; floods; fires; and landslides.

³⁵ For example, security shocks could affect an entire community in the case of a large battle but only a single household in the case of violent crime.

increases appear to affect some regions more than others, which could suggest that CAR's markets are not well integrated. The quality of CAR's underlying infrastructure that could underpin market integration – namely roads – is discussed in more detail in Chapter 6.

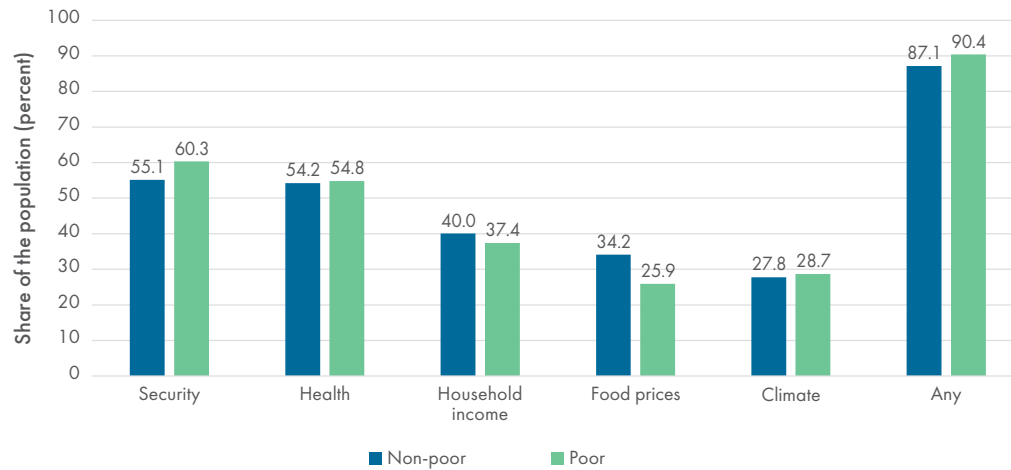
FIGURE 29. CHANGING CASSAVA PRICES IN THE CENTRAL AFRICAN REPUBLIC'S REGIONS



Source: ICASEES and World Bank estimates.

Both poor and non-poor households experience shocks. Around 90.4 percent of people living in poor households had experienced a shock in the three previous prior to the EHCVM compared with 87.1 percent of people living in non-poor households (Figure 30). Given the vulnerability analysis in the previous sections, this means shocks can both push vulnerable, non-poor households below the poverty line and deepen the deprivation of those who are already poor. Poor households were more likely experience security and health shocks while food-price shocks were more common for non-poor households, but these differences were slight.³⁶

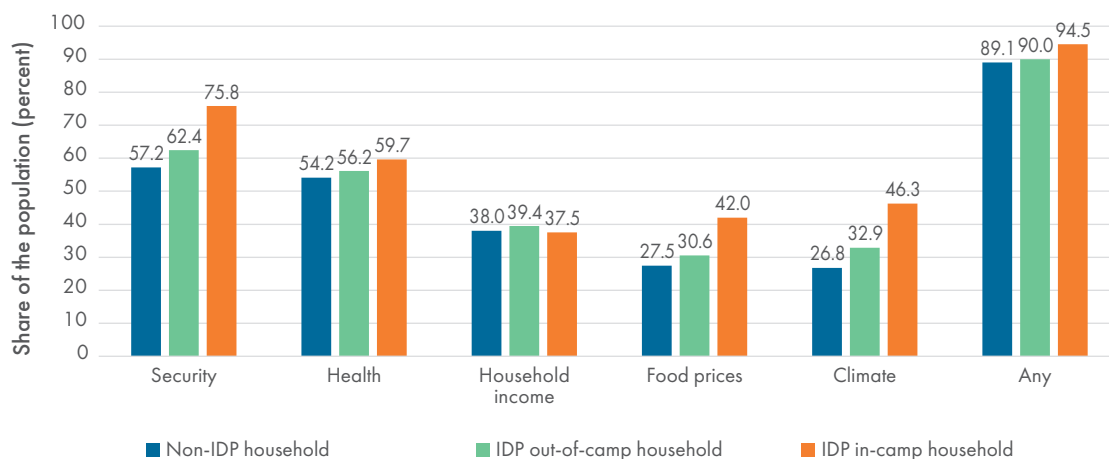
³⁶ To test the relationship between conflict and poverty, the poverty profile from Chapter 2 was extended to include conflict, measured as the number of fatalities happening within the commune where the household was sampled according to ACLED data. While there was a positive correlation between poverty and conflict in these regressions, the relationship was not statistically significant when household- and location-level controls were added.

FIGURE 30. SHOCKS EXPERIENCED IN THE CENTRAL AFRICAN REPUBLIC BY POVERTY STATUS

Note: Shocks reported for the three years prior to the EHCVM interview. Consumption is temporally and spatially deflated to compare with the overall national poverty line of 263,485 XAF per person per year.

Source: 2021 EHCVM and World Bank estimates.

Displaced people, especially those living in camps, were most likely to have experienced shocks, especially security shocks. In the three years prior to the survey, 94.5 percent of IDPs living in camps had experienced some kind of shock, compared with 90.0 percent of people in IDP out-of-camp households and 89.1 percent of those in non-IDP households (Figure 31). The differences between IDP in-camp households, IDP out-of-camp households, and non-IDP households were largest for shocks related to security and to climate. While it is not possible to isolate the precise timing of the shocks and when the households or individuals were displaced, these results still likely manifest the close relationship between conflict and displacement. Since IDPs in camps were also more likely to be poor and vulnerable, the results also emphasize the especially precarious situation of CAR's displaced population.

FIGURE 31. SHOCKS EXPERIENCED IN THE CENTRAL AFRICAN REPUBLIC BY HOUSEHOLD DISPLACEMENT STATUS

Note: Shocks reported for the three years prior to the EHCVM interview.

Source: 2021 EHCVM and World Bank estimates.

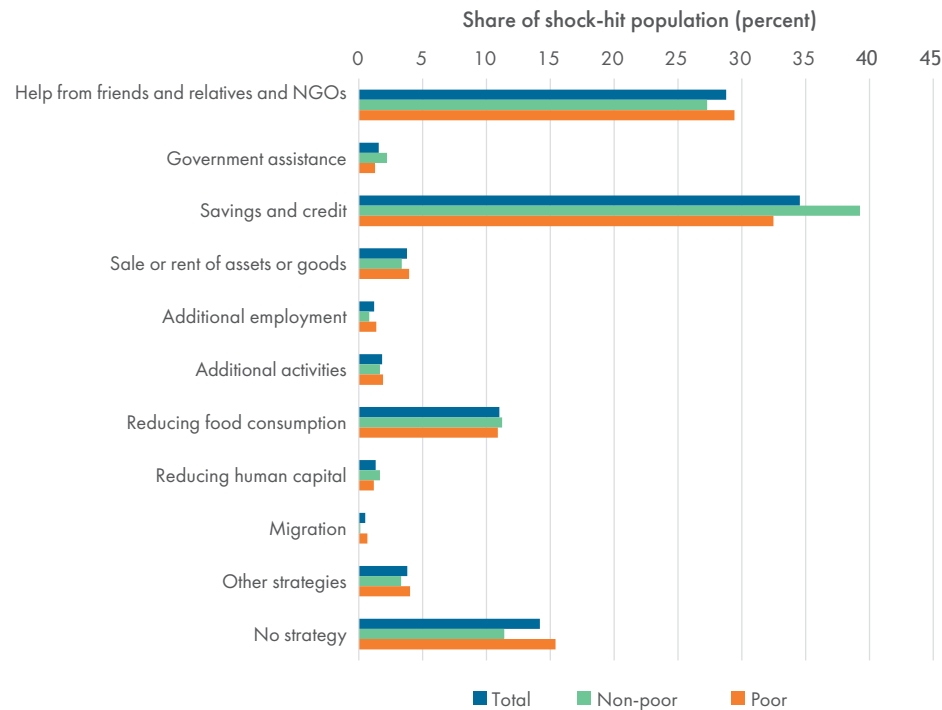
3.6. THE STRATEGIES THAT CENTRAL AFRICANS USE TO COPE WITH SHOCKS COULD TRAP THEM IN POVERTY

Central African households often need to find strategies to cope with the shocks they confront, suggesting that ex ante risk management strategies are insufficient. Households may try to manage the impact of the shocks they face in advance by — for example — diversifying their livelihoods, building buffer stocks of food, or having some members migrate to and remit from elsewhere (Dercon, 2002). Yet these risk management strategies may not be possible or may not be enough. In these situations, households may effect reactive coping strategies after shocks hit, some of which could have harmful implications for their long-term welfare (WFP, 2021). The EHCVM data recorded the main three coping strategies deployed in response to the three most severe shocks that shock-hit households faced.³⁷ To simplify the analysis, the statistics that follow focus on the primary coping strategy that was deployed for the single most severe shock — this paints a picture of the most common coping strategies on which Central Africans rely.

Drawing on savings and credit and reducing food consumption are two of the most common coping strategies that Central Africans deploy, both of which could have longer-term consequences. First, about 34.5 percent of shock-hit Central Africans' primary coping strategy for their most severe shock was to draw down savings or borrow to preserve household income — this makes savings and credit the most common coping strategy in CAR (Figure 32). This was true for both poor and non-poor households. This may not be a negative coping strategy if the savings can later be replenished or if the credit is relatively low interest, but it could place households on weaker financial footing going forward, potentially reducing their investments in physical and human capital and lowering their future incomes. Second, around 11.0 percent of shock-hit Central Africans reduced their food consumption as the main response to their most severe shock. This not only entails a welfare loss today, but could also lead to stunting and malnutrition and have knock-on effects on learning, curtailing human capital development (World Bank, 2018).

37 The severity of the shocks was rated by the respondents themselves during data collection.

FIGURE 32. COPING STRATEGIES DEPLOYED IN THE CENTRAL AFRICAN REPUBLIC BY POVERTY STATUS

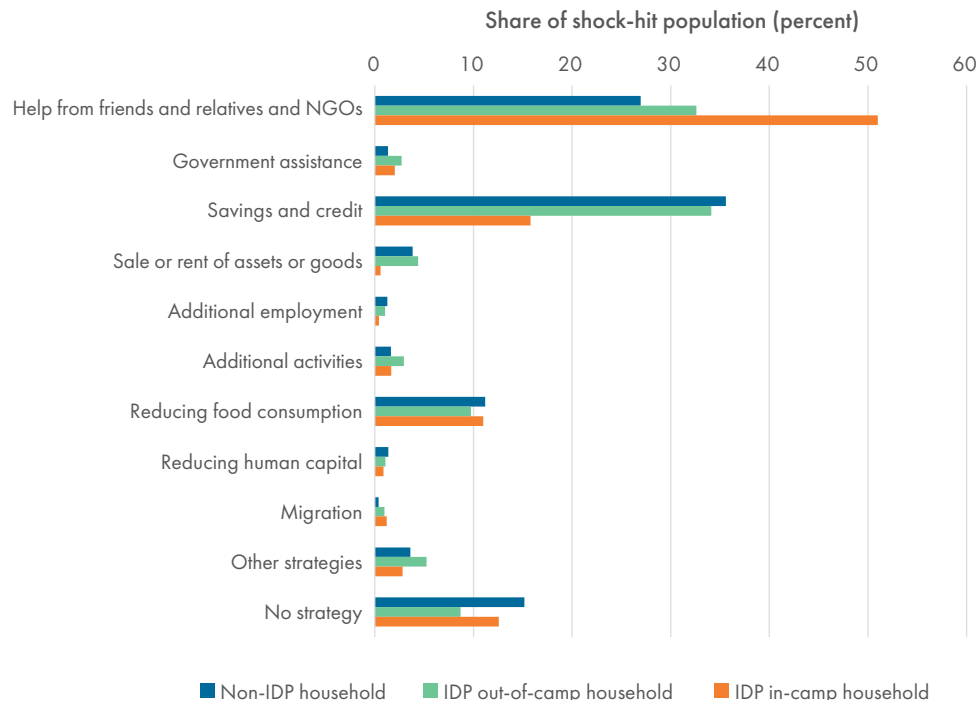


Note: Estimates focus on the primary coping strategy deployed in response to the most severe shock the household suffered. NGOs = non-governmental organizations, including religious organizations. Consumption is temporally and spatially deflated to compare with the overall national poverty line of 263,485 XAF per person per year. *Source:* 2021 EHCVM and World Bank estimates.

Many Central Africans also reported relying on support from friends, family, and non-governmental organizations (NGOs). About 28.8 percent of shock-hit Central Africans were supported by friends, families, and non-governmental organizations — including religious organizations — as their primary response to the most severe shock they suffered. Disaggregating the survey data further, this mainly appears to reflect the support of friends and family. Therefore, despite the widespread poverty and vulnerability that persists across CAR — and the impacts of conflict and displacement on social capital — Central Africans try to help each other in difficult times.

Displaced people in camps are more likely to rely on support from NGOs but less likely to respond to shocks by drawing down savings and taking out loans. For some 51.0 percent of shock-hit people in IDP in-camp households, help from friends, relatives, or NGOs was the main coping strategy for their most severe shock — significantly more than non-IDP households and IDP out-of-camp households (Figure 33). The disaggregated data demonstrate this is mainly because NGO support is a more prevalent coping strategy for those in camps. Yet resorting to drawing down savings or taking out loans was far less common among displaced people in camps, potentially reflecting their lower levels of financial inclusion.

FIGURE 33. COPING STRATEGIES DEPLOYED IN THE CENTRAL AFRICAN REPUBLIC BY HOUSEHOLD DISPLACEMENT STATUS



Note: Estimates focus on the primary coping strategy deployed in response to the most severe shock the household suffered. NGOs = non-governmental organizations, including religious organizations.

Source: 2021 EHCVM and World Bank estimates.

3.7. GIVEN WIDESPREAD POVERTY AND VULNERABILITY, SAFETY NETS NEED TO BE ENHANCED

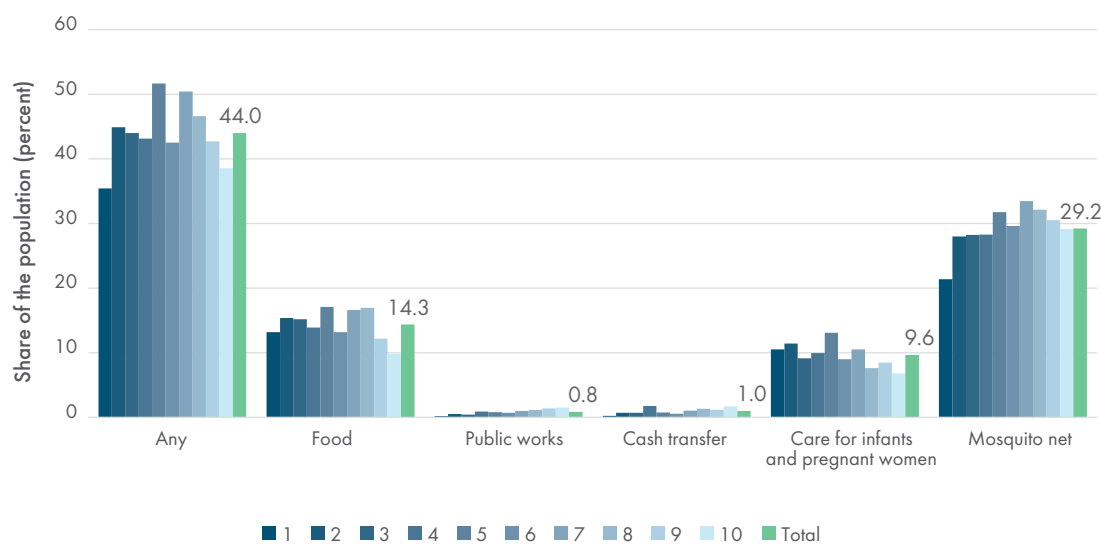
With almost all Central Africans being vulnerable to poverty, shocks being common, and some households responding with negative coping strategies, it is important to understand the extent of support from the government and NGOs. In some countries, social protection measures can help households weather the impact of shocks without resorting to coping strategies that could blight their long-term prospects for escaping poverty. This begs the question about the extent to which such measures are currently in effect in CAR. The EHCVM data capture this directly, asking households to report the types of support they received — be that food aid, public works, cash transfers, infant or maternal healthcare, or mosquito nets — in the 12 months prior to the survey.

While many Central Africans reported receiving some kind of safety net or support program, this was mainly in the form of mosquito nets. About 44.0 percent of the population lived in a household that had benefited from at least one support program in the 12 months prior to the survey. However, much of this support came in the form of distributing mosquito nets, an activity undertaken by various humanitarian actors operating in CAR (Figure 34).³⁸ Around 29.2 percent of Central Africans lived in a household that had received a mosquito net. Provision of food and healthcare for infants and pregnant women were the next most common types of

38 See, for example, work undertaken by World Vision, the Global Fund, and the Central African Republic's health ministry (World Vision, 2019).

program, reaching 14.3 percent and 9.6 percent of the population respectively. Just 0.8 percent of the population lived in a household receiving support from public works programs – including the Londö program – and 1.0 percent lived in a household that had received government cash transfers – including *Projet d'Appui aux Communautés Affectées par le Déplacement* (PACAD).³⁹ As such, when distribution of mosquito nets is taken out of equation, the coverage of support for Central Africans is far less than the prevalence of poverty and vulnerability.⁴⁰

FIGURE 34. RECEIPTS OF SOCIAL SAFETY NETS AND OTHER SUPPORT PROGRAMS IN THE CENTRAL AFRICAN REPUBLIC BY CONSUMPTION DECILE



Note: Bars represent the decile of the real consumption distribution. "Food" category includes donations of cereals, flour or semolina, food for school children, food for work, and nutritional supplements for malnourished children.

Source: 2021 EHCVM and World Bank estimates.

Support programs do not appear to focus on the very poorest Central African households. For all types of programs captured in the EHCVM data, those in lower deciles of the consumption distribution are no more likely to receive support than those in higher deciles. Therefore, the programs do not appear to be targeting those who are most deprived.

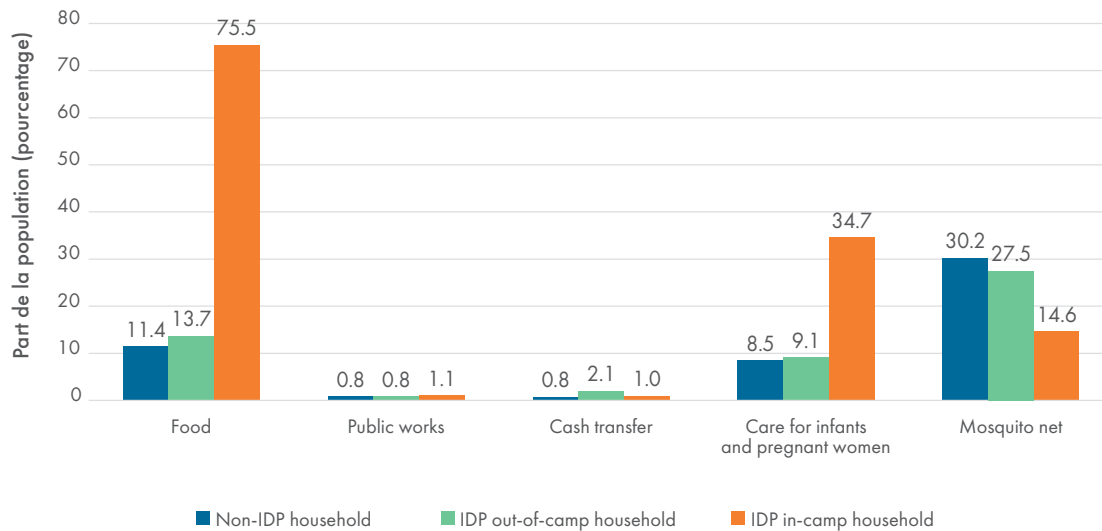
Displaced people living in camps are more likely to receive support in terms of food and healthcare for infants and pregnant women. Around 75.5 percent of IDPs living in camps received food aid compared with 13.7 percent of those living in IDP out-of-camp households and 11.4 percent of those in non-IDP households (Figure 35). Similarly, the share of people in IDP in-camp households receiving healthcare support for infants

³⁹ These findings are roughly comparable with the administrative data from PACAD. The project sought to reach about 78,000 individual beneficiaries from about 16,000 households in 2020 (World Bank, Forthcoming). This corresponds to about 1.3 percent of a population of 6.1 million people.

⁴⁰ While important for protecting against malaria and other mosquito-borne diseases, which could have long-term consequences for human capital development, mosquito nets do not directly address Central Africans' immediate lack of food and other goods, which means they are poor today.

and pregnant women was more than three times higher compared with IDP out-of-camp households and non-IDP households. The fact that in-camp households receive this support and are still susceptible to poverty, and even food poverty, further underlines the depth of their deprivation.

FIGURE 35. RECEIPTS OF SOCIAL SAFETY NETS OR SUPPORT PROGRAMS IN THE CENTRAL AFRICAN REPUBLIC BY HOUSEHOLD DISPLACEMENT STATUS



Note: "Food" category includes donations of cereals, flour or semolina, food for school children, food for work, and nutritional supplements for malnourished children. Source: 2021 EHCVM and World Bank estimates.

3.8. CONSIDERING NON-MONETARY INDICATORS TO BREAK POVERTY AND VULNERABILITY TRAPS

This chapter highlights the urgent need to expand support for poor and vulnerable Central Africans, but such policies need to be designed with a view to building the foundations of sustainable poverty reduction.

By considering the variance in households' consumption and the shocks they face, this chapter demonstrates that exposure to poverty and to food poverty – even among those who are not poor or food poor now – is almost universal in CAR. Risk-related poverty traps could prevent households escaping poverty, as they adopt coping strategies that may weaken their financial, physical, or human capital. These negative coping strategies are necessitated by relatively low coverage of cash and in-kind support. This makes expanding and focusing social protection and direct support for households a key policy priority, as discussed in Chapter 7. However, designing policies that can help break poverty traps sustainably relies on understanding potential drivers of monetary poverty, including human capital and basic infrastructure. As such, the next chapter explores the extent of non-monetary poverty and its overlap with monetary poverty in CAR.

ANNEX 3.1. USING THE VARIANCE IN CONSUMPTION TO IDENTIFY VULNERABILITY – THE MULTI-LEVEL (OR TWO-LEVEL HIERARCHICAL) APPROACH

Günther and Harttgen (2009) proposed a method to analyze the prevalence and sources of vulnerability to poverty based on cross-sectional data or short panel data. The method builds upon the papers by Chaudhuri (2002) and Christiaensen and Subbarao (2005). It employs a two-level hierarchical model that allows the decomposition of the prevalence of the vulnerability to poverty into poverty-induced and risk-induced vulnerability. Furthermore, this methodology allows assessing the extent to which vulnerability to poverty is associated with idiosyncratic and covariate shocks.

In line with the characterization of vulnerability to poverty in terms of the mean and variance of household consumption, consumption at any point in time is modelled as being determined by household-level and community-level characteristics and their potential interaction, as well as an error term that consists of two (unobserved) components: a household-specific (idiosyncratic) component that varies across households, and a community-specific (covariate) component that is common for all households within the same community. Along similar lines, the variance of the idiosyncratic and covariate components of the consumption error term is modelled as a function of household-level and community-level characteristics and their interaction as well.

Specifically, let $i = 1, \dots, N$ denote households at level one and $j = 1, \dots, J$ denote communities at level two, with households being nested within communities. Consumption of household i in community j is specified as:

$$Inc_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + e_{ij} \quad (1)$$

The coefficients (both the constant term and slopes) of each community are assumed to be affected by community observed (Z) and unobserved factors denoted by u_{0j} and u_{1j} :

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Z_j + u_{0j} \quad (2)$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}Z_j + u_{1j} \quad (3)$$

Substituting Equations (2) and (3) into equation (1) yields the regression equation:

$$Inc_{ij} = \gamma_{00} + \gamma_{01}Z_j + (\gamma_{10} + \gamma_{11}Z_j)X_{ij} + u_{0j} + u_{1j}X_{ij} + e_{ij} \quad (4)$$

Thus, there are three errors terms to be estimated: u_{0j} , u_{1j} , and e_{ij} . The term e_{ij} summarizes the idiosyncratic shocks while u_{0j} and $u_{1j}X_{ij}$ capture the covariate shocks. Specifically, u_{0j} captures the direct effect of covariate shocks affecting the intercept of each community (β_{0j}) and thus all households in the same community in the same manner, while $u_{1j}X_{ij}$ captures the indirect effect of covariate shocks on each household.

Equation (4) may be rewritten as Equation (4a) below whereby the term $u_{1j}X_{ij}$ the indirect effect of covariate shocks, introduces a random component (varying by j) to the coefficient of X_{ij} :

$$Inc_{ij} = \gamma_{00} + \gamma_{01}Z_j + (\gamma_{10} + u_{1j})X_{ij} + \gamma_{11}Z_jX_{ij} + u_{0j} + e_{ij} \quad (4a)$$

The specification in Equations (2) and (3), which includes the random components u_{0j} and u_{1j} gives rise to a “random coefficient” model (Equation 4 or 4a) meaning that not only the constant term γ_{00} is shifted up or down by the community level shock u_{0j} but also the coefficients of observed household characteristics γ_{10} vary up or down by a random component u_{1j} that varies only across communities.

It is useful to note that if Equation (3) were to be specified without the random error u_{1j} then Equation (4) would reduce to a simple “random intercept” or “random effect” specification of household consumption, meaning that Equation (4) would reduce to Equation (4b):

$$lnc_{ij} = \gamma_{00} + \gamma_{01}Z_j + (\gamma_{10} + \gamma_{11}Z_j)X_{ij} + u_{0j} + e_{ij} \quad (4b)$$

The simple random-intercept specification is clearly more restrictive than the full random-coefficient specification adopted here. However, it is useful to bear in mind, that the random effect specification could serve as a last resort option in the case that serious convergence problems are encountered in applying the full random-coefficient specification.

In the first stage, Equation (4 or 4a) above may be estimated using mixed-effects maximum likelihood regression. In the second stage, the squared residuals e_{ij}^2 and u_{0j}^2 and their squared sum $(u_{0j} + e_{ij})^2$ from Equation (4) may be regressed on X_{ij} and Z_j :

$$e_{ij}^2 = \theta_0 + \theta_1 Z_j + \theta_3 X_{ij} Z_j \quad (5)$$

$$u_{0j}^2 = \tau_0 + \tau_1 Z_j \quad (6)$$

$$(u_{0j} + e_{ij})^2 = \pi_0 + \pi_1 Z_j + \pi_3 X_{ij} Z_j \quad (7)$$

The estimated coefficients of Equations (4a), (5) (6) and (7) may then be used to estimate the expected mean and the expected idiosyncratic $\sigma_{e_{ij}}^2$, covariate $\sigma_{u_{0j}}^2$, and total $\sigma_{u_{0j}+e_{ij}}^2$ variance of a household’s consumption, based on the household’s and the community’s observed characteristics.

The probability of consumption falling below the poverty line z (vulnerability to poverty) may be estimated by assuming that consumption is log-normally distributed, that is:

$$\widehat{v}_{ij} = P(lnc_{ij} < \ln z | X, Z) = \phi \left(\frac{\ln z - \widehat{lnc}_{ij}}{\sqrt{\widehat{\sigma}_{u_{0j}+e_{ij}}^2}} \right) \quad (8)$$

Expression (8) can be used to derive an estimate of the vulnerability to poverty from covariate or community-level shocks by replacing $\widehat{\sigma}_{u_{0j}+e_{ij}}^2$ in the denominator, by $\widehat{\sigma}_{u_{0j}}^2$ while an estimate of the vulnerability to poverty from idiosyncratic shocks by using $\widehat{\sigma}_{e_{ij}}^2$ in place of $\widehat{\sigma}_{u_{0j}+e_{ij}}^2$.

The above steps are not sufficient to identify a vulnerable household, since all households have a non-zero probability of falling below the poverty line. The identification of vulnerable households requires setting a threshold for the probability of being vulnerable to poverty and a specific time horizon. In the empirical literature, it is standard for a household to be classified as vulnerable if it has a likelihood of falling below the poverty line greater than or equal to 0.5 and the time horizon is $t+2$ years. This is equivalent to saying that the household can fall below the poverty line at least once in the next two years,⁴¹ or that a household is considered vulnerable if the probability of falling below the poverty line in any given year is at least 0.29.⁴² Ultimately the choice of the threshold has an impact on who is considered vulnerable. As the threshold increases (decreases), and the required probability of falling under the poverty line increases (decreases), fewer (more) households are going to be identified as vulnerable.

For the CAR estimates, the household variables used are: number of children 0 to 4, number of children 5 to 14, number of adults, disability status of the household head, gender of household head, educational attainment of household head, share of household members in labor force who are in agriculture, access to internet, share of adults with mobile phones, type of flooring, access to electricity, household ownership of TV, access to sanitation, and household IDP status.

The community level variables, all derived from the household-level questionnaire, are: share of households in the community with members who can read and write, share of households with access to potable water during dry season, average household size, presence of IDP camp, whether a rural community, and the region.

The variables used for the CAR analysis are similar to other applications of the Günther and Haarttgen (2009) model.

41 The 0.5 probability threshold is justified in the following arguments provided by Pritchett, Suryahadi, and Sumarto (2000, p. 5): “First, this is the point where the expected consumption coincides with the poverty line. Second, it is intuitive to say a household is “vulnerable” if it faces at least 0.5 probability of falling into poverty. Third, if a household is just at the poverty line and faces a mean zero shock, then this household has a one period ahead vulnerability of 0.5. This implies that, in the limit, as the time horizon goes to zero, then being *in current poverty* and being *currently vulnerable to poverty* coincide.”

42 Let $P = Prob(\ln c_{ij} > \ln z)$ denote the probability of being above the poverty line in any given year. Assuming the poverty status of a household is independent over time, the probability of being vulnerable to poverty at least once in the next 2 years, (i.e. using the 0.5 threshold), is then given by $v_{ij,t+2} = 1 - P^2 \geq 0.5$. Solving this for P yields $P = 0.71$ which implies that the probability of falling below the poverty line in any given year is 0.29 (= 1-0.71).

4. MONETARY AND NON-MONETARY POVERTY OVERLAP FOR MANY CENTRAL AFRICANS, DEEPENING THEIR DEPRIVATION

CHAPTER 4 KEY MESSAGES

- ▶ There are many key dimensions of welfare that money cannot buy
- ▶ Some non-monetary deprivations — especially in terms of electricity and sanitation — are even more widespread than monetary poverty, deepening Central Africans' overall deprivation
- ▶ While internally displaced people living in camps are worse off across most poverty metrics, they have better access to sanitation and water
- ▶ The overlap between different dimensions of poverty is sizeable across the Central African Republic, so countervailing interventions should try to address different constraints on human capital, basic infrastructure, and monetary poverty simultaneously
- ▶ Access to electricity and sanitation are correlated especially strongly with monetary poverty — they could be potential priorities for poverty reduction
- ▶ Progress on non-monetary welfare measures has been mixed, with access to water and sanitation declining between 2006 and 2018, and Bangui diverging further from the rest of the country

This chapter of the poverty assessment examines the dimensions of welfare in CAR that money cannot buy. While monetary consumption provides the most direct way of assessing poverty, it is increasingly being recognized that non-monetary indicators also matter intrinsically for welfare. Moreover, analyzing the interactions between monetary and non-monetary dimensions of poverty can help better understand constraints on poverty reduction and what can be done to alleviate them. This chapter first explores the key non-monetary indicators used to construct the World Bank's Multidimensional Poverty Measure (MPM) one by one, comparing different types of households living in different areas in CAR. Second, the chapter considers how different elements of monetary and non-monetary poverty overlap, giving direct guidance on potential channels for poverty-reducing policies. The chapter then concludes by exploiting the fact that some indicators of non-monetary poverty have been measured by other surveys in CAR — especially the MICS — to try and track how welfare has changed over time.

4.1. NON-MONETARY WELFARE INDICATORS CAN PROVIDE A MORE COMPLETE PICTURE OF POVERTY IN THE CENTRAL AFRICAN REPUBLIC

Poverty is more and more being understood and measured as a multidimensional concept. Households who are not monetarily poor may lack access to education, health, basic infrastructure, or other intrinsic elements of welfare. Conversely, monetarily poor households may have unusually good access. This arises because not all elements of welfare can be purchased directly in the market, so regardless of income, the household may not have access (Bourguignon & Chakravarty, 2003). Many of these goods have the properties of “public goods”, which are often provided by the government. This resonates with global evidence showing that poor households themselves report that non-monetary factors – including food security, housing, health, education, and security – matter directly for their wellbeing (see, for example, Moreno (2017)). It is therefore unsurprising that multidimensional poverty indicators – and sometimes indices that combine these indicators – are increasingly being used among researchers and policymakers. Indeed, in 2022 as many as 111 countries were covered by the United Nations Development Programme’s (UNDP’s) and the Oxford Poverty and Human Development Initiative’s (OPHI’s) Multidimensional Poverty Index (MPI) (UNDP and OPHI, 2022).

The majority of this chapter uses the World Bank’s MPM, which considers deprivation in terms of basic infrastructure and education alongside monetary poverty. The key advantage of using the World Bank’s MPM is that, unlike most other multidimensional poverty frameworks, it marries information on monetary and non-monetary poverty. Two indicators capture deprivation in terms of education. First, for educational enrolment households are counted as deprived if they have at least one school-age child (aged 6-13 years) not enrolled in school.⁴³ Second, for educational attainment households are counted as deprived if they do not contain at least one individual of school grade nine age or above (aged 14+) who has completed primary education. Three indicators are used to capture deprivation in terms of basic infrastructure, based on whether or not the household lacks access to: (1) at least limited-standard drinking water; (2) at least limited-standard sanitation; and (3) electricity. For the monetary poverty indicator, the analysis sticks to the national poverty line and the temporally and spatially deflated consumption aggregate to better allow for comparisons between different types of households within CAR. The international poverty measurement approach is not as well equipped to do this, because it does not incorporate spatial deflation within the country.⁴⁴

Non-monetary poverty and human capital are closely related. Human capital comprises the knowledge, skills, and health that people accumulate throughout their lives, which enable them to “realize their potential as productive members of society” (World Bank, 2018). According to the World Bank’s Human Capital Index (HCI) – which assesses people’s productive potential by combining information on infant mortality, expected years of schooling, learning, life expectancy, and stunting – CAR had the worst human capital outcomes in the world in 2020, underlining the challenge the country faces (World Bank, 2020). Box 4 also provides some background statistics on health outcomes in CAR, which further emphasize the scale of the country’s human capital crisis.⁴⁵ The indicators in the MPM are strongly linked to human capital. Educational enrolment

43 The educational enrolment indicator is missing for households lacking school-age children. When the overall multidimensional poverty index is created, this means the education dimension is entirely decided by the educational attainment indicator. See the World Bank’s 2022 Poverty and Shared Prosperity Report for details (World Bank, 2022).

44 In CAR the national and international poverty lines are only around three cents apart in USD 2017 PPP person per day terms.

45 The EHCVM was not designed to capture detailed health indicators and these fall outside the MPM. This motivates the focus on education and basic infrastructure as a way of considering non-monetary poverty and human capital.

captures the development opportunities that are currently available to CAR's children. Similarly, the quality of water and sanitation to which people have access influences people's health outcomes. By influencing future productive potential, both non-monetary poverty and human capital can have long-term, intergenerational implications for poverty reduction.

BOX 4. HEALTH INDICATORS IN THE CENTRAL AFRICAN REPUBLIC

CAR lags many of its neighbors in terms of key health outcomes. While the EHCVM was not designed to capture health indicators, harmonized cross-country data can provide a picture of the health challenges that CAR confronts. CAR's levels of life expectancy, infant mortality, stunting, skilled birth attendance, vaccination rates, and malaria deaths are among the worst across the CEMAC region (Table 6). As such, building human capital relies on improving health outcomes too. Rates of fertility — a potential correlate of poverty, as shown in Chapter 2 — are also relatively high in CAR. Access to health services is also considered explicitly in Chapter 6.

TABLE 6. SELECTED HEALTH AND DEMOGRAPHY INDICATORS IN THE CENTRAL AFRICAN REPUBLIC AND COMPARATOR COUNTRIES

	CAR	Cameroon	Chad	Gabon	Congo, Rep.
Life expectancy at birth (years)	55	61	53	67	64
Infant mortality (deaths per 1,000 live births)	75	47	66	29	32
Stunting (percent among under 5s)	40	29	31	17	21
Skilled birth attendance (percent of births)	40	69	39	87	91
Vaccination DTP3 (percent of children aged 12-23 months)	42	69	52	63	73
Number of deaths from malaria (deaths per 100,000 people)	86	105	49	48	49
Total fertility rate (births per woman)	6.0	4.5	6.3	3.5	4.2

Note: DTP3 refers to the third dose of the diphtheria, tetanus, and polio vaccine. Information taken from global databases to maintain international comparability, but some indicators are also available for CAR from the 2018/19 MICS.

Source: WDIs (for life expectancy, infant mortality, stunting, skilled birth attendance, and total fertility rate), UNICEF (for vaccination DTP3 rates), OurWorldInData (for malaria deaths), and World Bank estimates.

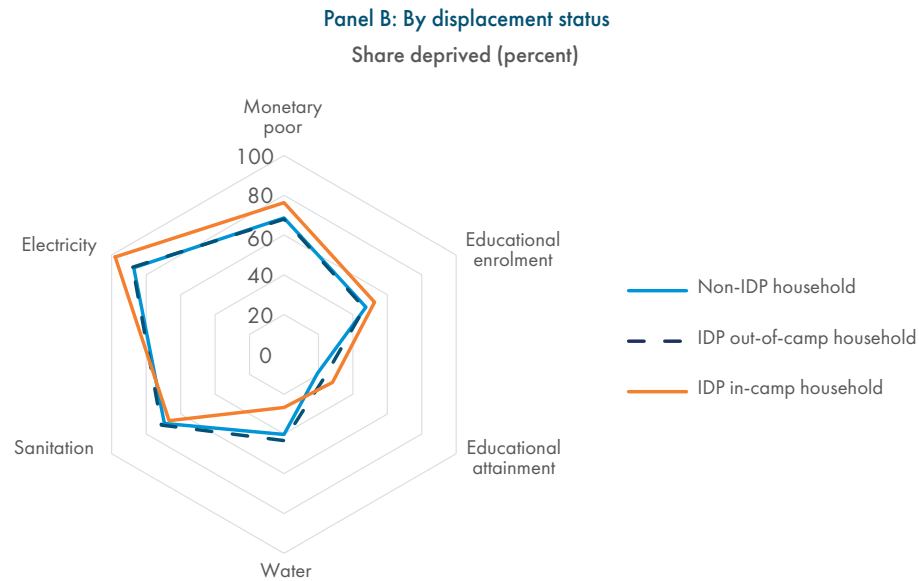
4.2. NON-MONETARY DEPRIVATION IS WIDESPREAD IN THE CENTRAL AFRICAN REPUBLIC, ESPECIALLY IN RURAL AREAS

Non-monetary poverty is prevalent in CAR, with deprivation in terms of sanitation and electricity afflicting even more households than monetary poverty. While 68.8 percent of Central Africans live below the national monetary poverty line, around 69.6 percent live without at least limited-standard sanitation and as many as 87.7 percent live without access to electricity. Deprivation in terms of education and water are still present but are less common than monetary poverty.

Non-monetary deprivations are all more widespread in rural areas than urban areas. For some non-monetary poverty indicators, the gap between rural and urban areas is even larger than for monetary poverty (Figure 36). For example, for educational enrolment, 57.2 percent of rural dwellers were deprived compared with 34.6 percent of urban dwellers. For sanitation, as many as 81.5 percent of people were deprived in rural areas compared with 52.4 percent for urban areas. As with monetary poverty, the non-monetary indicators also show dramatic differences between Bangui, which is significantly less deprived, and the rest of CAR.

FIGURE 36. INDICATEURS DE PAUVRETÉ NON MONÉTAIRE EN RÉPUBLIQUE CENTRAFRICAINE, PAR ZONE URBAINE OU RURALE ET PAR STATUT DE DÉPLACEMENT





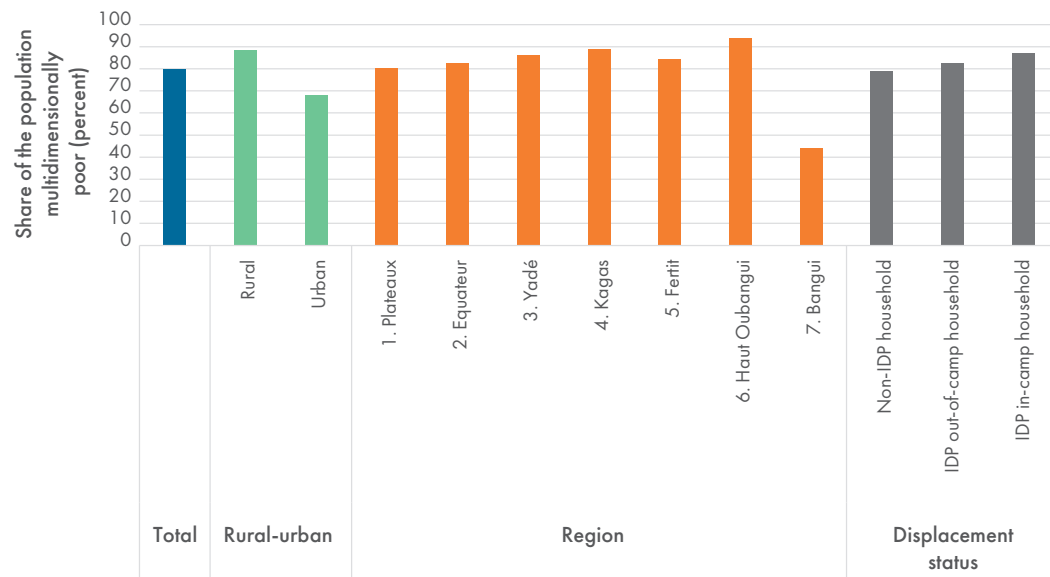
Note: Monetary poverty calculated by comparing the temporally and spatially deflated consumption aggregate with the national poverty line of 263,485 XAF per person per year. Non-monetary poverty deprivations defined according to 2022 World Bank Poverty and Shared Prosperity Report.
Source: 2021 EHCVM and World Bank estimates.

While households residing in camps are more deprived in terms of education and electricity access, it appears they may have better access to water and sanitation. Echoing the statistics on monetary poverty presented in Chapter 2, the shares of people living in camps who are deprived in terms of educational enrolment, educational attainment, and electricity access are respectively about 5.1 percentage points higher, 8.2 percentage points higher, and 10.7 percentage points higher compared all those living outside of camps (taking non-IDP households and IDP out-of-camp households together). Yet the opposite is true for water and sanitation, for which the shares who are deprived are about 14.1 percentage points and 3.0 percentage points *lower* among those living in camps. This demonstrates that, while living in camps is generally associated with higher poverty — including both monetary and non-monetary indicators — there are certain services that can be more easily and directly supplied there. Meanwhile, the differences between IDP out-of-camp households and non-IDP households are far smaller, with no clear pattern of one of these two groups being more deprived than the other.

4.3. AROUND 8 IN 10 CENTRAL AFRICANS ARE MULTIDimensionALLY POOR

The World Bank MPM, which can be used to aggregate across indicators and produce a single composite index, suggests 8 in 10 Central Africans are multidimensionally poor. Households are considered multidimensionally poor if they are deprived in a sufficient number of the indicators included in the MPM — this is described in detail in Box 5. Nationally, some 80.0 percent of Central Africans are multidimensionally poor according to the MPM: multidimensional poverty outstrips monetary poverty by construction because monetary poverty is one of the MPM's dimensions (Figure 37). These results imply that 11.1 percent of Central Africans are multidimensionally poor but not monetarily poor. Despite being non-poor in terms of consumption, this group lacks access to education or basic infrastructure or both.

FIGURE 37. MULTIDIMENSIONAL POVERTY RATE IN THE CENTRAL AFRICAN REPUBLIC ACCORDING TO THE WORLD BANK MULTIDIMENSIONAL POVERTY MEASURE, BY URBAN-RURAL, REGION, AND DISPLACEMENT STATUS



Note: Monetary poverty calculated by comparing the temporally and spatially deflated consumption aggregate with the national poverty line of 263,485 XAF per person per year. Multidimensional poverty defined according to 2022 World Bank Poverty and Shared Prosperity Report.

Source: 2021 EHCVM and World Bank estimates.

BOX 5. ESTIMATING MULTIDIMENSIONAL POVERTY USING THE WORLD BANK MULTIDIMENSIONAL POVERTY MEASURE

The MPM is composed of six indicators organized under three dimensions. The six indicators are related to monetary poverty, educational enrollment, educational attainment, drinking water, sanitation, and electricity. These indicators are mapped into three dimensions of well-being, namely, monetary poverty, education, and basic infrastructure. These indicators can be adapted to reflect the Central African context.

The MPM aggregates information across these dimensions, then applies a specific threshold that determines whether a household is multidimensionally poor. When aggregating across indicators, the MPM first gives equal weight (one-third) to each of the dimensions — monetary poverty, education, and basic infrastructure — and then equal weight to each indicator within those dimensions (Table 7). Households are considered multidimensionally poor if they are deprived in indicators whose weight adds up to one-third or more. Since the monetary poverty dimension is measured using only one indicator, anyone who is monetarily poor is automatically also multidimensionally poor.

TABLE 7. DIMENSIONS, INDICATORS, AND WEIGHTS USED TO CALCULATE THE WORLD BANK MULTIDIMENSIONAL POVERTY MEASURE IN THE CENTRAL AFRICAN REPUBLIC

Dimension	Indicator	Weight
Monetary	Monetary poverty at the national line	1/3
Education	At least one school-age child (aged 6-13 years) not enrolled in school	1/6
	Household does not contain at least one individual of school grade nine age or above (aged 14+) who has completed primary education	1/6
Basic infrastructure	Household lacks access to at least limited-standard drinking water	1/9
	Household lacks access to at least limited-standard sanitation	1/9
	Household has no electricity access	1/9

Source: World Bank (2018).

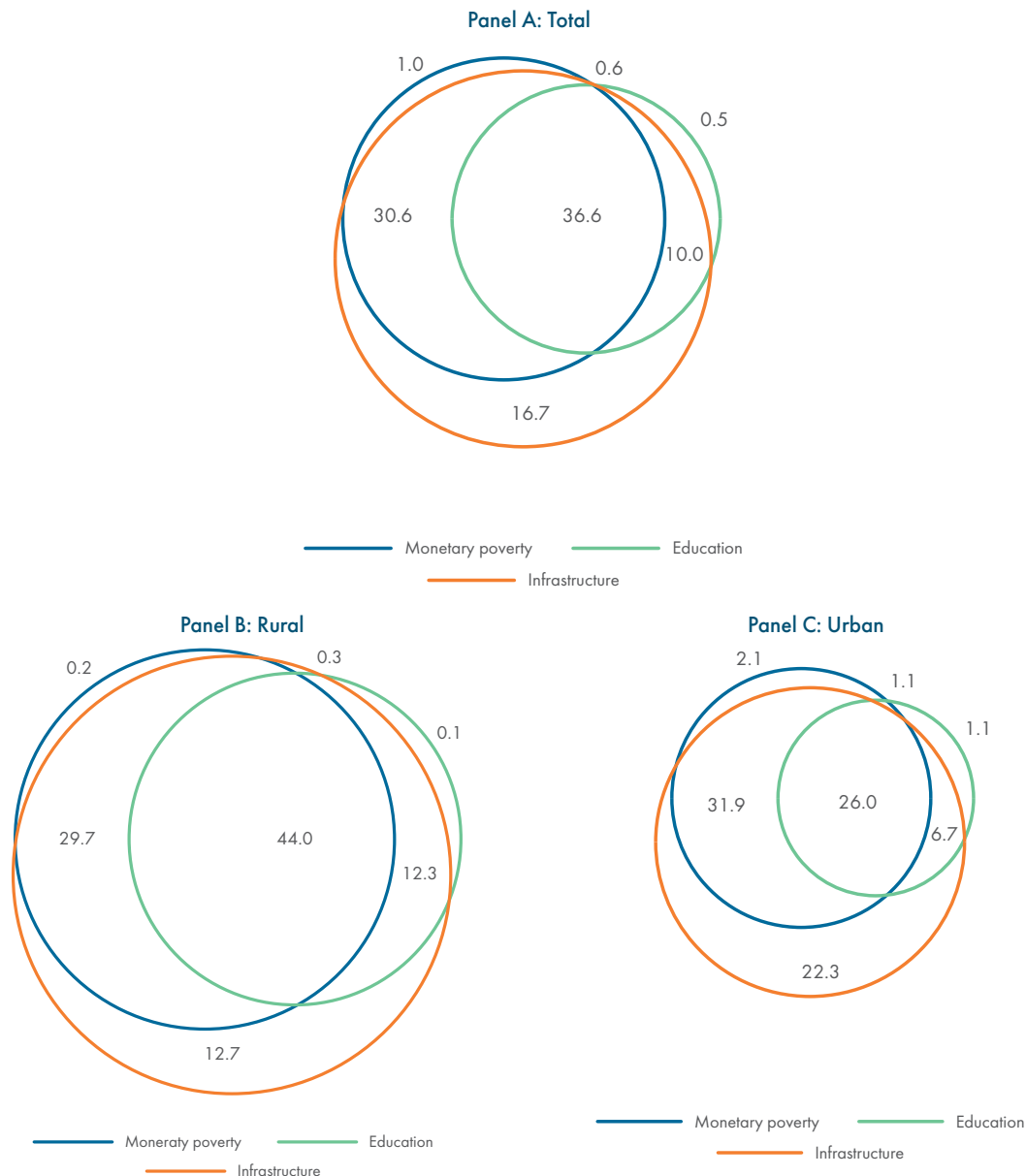
Multidimensional poverty is most prevalent in rural areas, among those living outside Bangui, and among households living in camps. These patterns largely follow those presented for monetary poverty. Towns and cities clearly have lower multidimensional poverty, with 67.9 percent of urban dwellers being multidimensionally poor compared with 88.4 percent of rural dwellers. Similarly, Bangui has by far the lowest multidimensional poverty rate of any region, at 44.1 percent, with the average for all other regions being 85.5 percent. The multidimensional poverty rate for people residing in camps is about 87.0 percent, making them more likely to be multidimensionally poor than all those residing outside of camps (in both non-IDP households and IDP out-of-camp households), despite their better access to water and sanitation. Also, unlike for monetary poverty, those living in IDP out-of-camp households are more likely to be multidimensionally poor than non-IDP households, with the multidimensional poverty rate for the former being 82.6 percent and for the latter being 79.2 percent. The slight differences across the non-monetary poverty indicators reported above add up to create this gap.⁴⁶

4.4. THE OVERLAP BETWEEN DIFFERENT DIMENSIONS OF POVERTY IS SIZEABLE ACROSS THE CENTRAL AFRICAN REPUBLIC

Different dimensions of poverty — monetary poverty, education, and basic infrastructure — pile up for many households in CAR, deepening their deprivation. To assess how much overlap there is between different dimensions of poverty, it is first helpful to construct a measure of deprivation at the dimension level. To do this, the analysis presented below considers a household deprived in a particular dimension if they are deprived in at least one of the indicators within that dimension. So, for example, a household is classified as education deprived if they are deprived in terms of enrolment or attainment (or both). The overlap between different dimensions is sizeable in CAR. Nationally, some 36.6 percent of Central Africans are deprived across all three dimensions, and a further 41.2 percent are deprived across two dimensions (Figure 38).⁴⁷

⁴⁶ This difference is only statistically significant at the 10 percent level in a linear probability model with multidimensional poverty status as the dependent variable and dummies for household displacement status as the regressors.

⁴⁷ The Venn diagrams shown in Figure 38 differ slightly from what is presented in the World Bank 2022 Poverty and Shared Prosperity Report (World Bank, 2022). There, the Venn diagrams only focus on those households who are multidimensionally poor, so the numbers add up to the multidimensional poverty rate. That restriction is not applied in Figure 38.

FIGURE 38. OVERLAP BETWEEN DIFFERENT DIMENSIONS OF POVERTY, BY URBAN-RURAL

Note: Numbers correspond to the share of the population in each cell (in percent). Size of circles in Venn diagrams not perfectly to scale. Deprivation in a given dimension means that household is deprived in at least one indicator within that dimension. Monetary poverty calculated by comparing the temporally and spatially deflated consumption aggregate with the national poverty line of 263,485 XAF per person per year. Non-monetary poverty calculated according to 2022 World Bank Poverty and Shared Prosperity Report.

Source: 2021 EHCVM and World Bank estimates.

While the overlap between different dimensions of poverty is substantial across CAR, it is larger in rural areas than urban areas. As many as 44.0 percent of rural dwellers are deprived in all three dimensions compared with 26.0 percent of urban dwellers. This means there is a larger share of urban dwellers deprived in just one dimension: for example, 22.3 percent of those living in urban areas are deprived only in terms of basic infrastructure, compared with 12.7 percent of those living in rural areas. The overlap between monetary

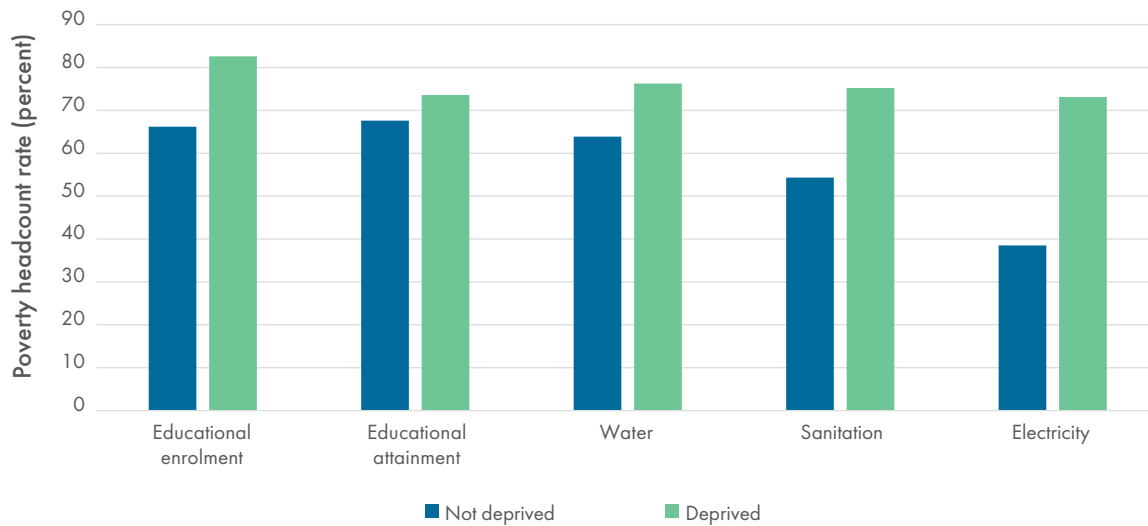
and non-monetary poverty also engenders a strong link between monetary poverty and human capital. This, in turn, reinforces the notion that Central African households, especially those living in rural areas, could be trapped in poverty – with low human capital outcomes, their productive potential is lower, reducing any opportunities for future upward mobility.

The substantial overlap between different dimensions of poverty implies that interventions could be “bundled up” to try and address multiple constraints on poverty reduction simultaneously, helping households break out of poverty traps. When overlaps between different dimensions are small, different interventions – for addressing monetary poverty, low education, or infrastructure deficits – are needed for different groups of people. Yet in CAR, especially in rural parts of the country, overlaps are large so interventions addressing different poverty dimensions can be combined and targeted to the same people. For example, direct support for education and health – through targeted investments in schools and health facilities or by providing nutrients, medication, or training to household members - could be “bundled up” with cash or other in-kind transfers disbursed through social safety nets. Alternatively, school feeding programs could simultaneously address enrolment, learning, and nutrition. This simplifies questions around targeting, but it also underlines the scale and depth of multidimensional poverty in CAR. Addressing constraints on human capital development as well as monetary poverty could help households build future productive potential, allowing them to escape the trap of poverty.

4.5. THE INTERACTION BETWEEN MONETARY POVERTY AND NON-MONETARY POVERTY PROVIDES USEFUL GUIDANCE FOR POLICYMAKERS

The relationship between monetary poverty and indicators of non-monetary poverty can help to gauge what the binding constraints on monetary poverty reduction may be. The analysis below first looks at basic raw correlations, using simple cross-tabulations, then partial correlations, by extending the poverty profile regressions presented in Chapter 2. These results cannot be given a causal interpretation per se, but – when combined with global evidence – they can help policymakers in trying to prioritize interventions that may help Central Africans exit monetary poverty.

Basic correlations suggest that monetary poverty is most strongly associated with deprivation in terms of electricity and sanitation. Electricity access is very limited in CAR, but the monetary poverty rate is 34.6 percentage points lower for those with electricity access compared to those without it (Figure 39). Similarly, the monetary poverty rate is 20.8 percentage points lower for Central Africans with access to improved sanitation compared to those without it. For the education dimension, the enrolment deprivation appears to be more strongly associated with current poverty levels than the attainment deprivation. This partly foreshadows the evidence in Chapter 5, which suggests that there are very few livelihood opportunities to reward educational attainment – or at least primary educational attainment – available in CAR.

FIGURE 39. MONETARY POVERTY HEADCOUNT RATE BY INDICATORS OF NON-MONETARY POVERTY

Note: Monetary poverty calculated by comparing the temporally and spatially deflated consumption aggregate with the national poverty line of 263,485 XAF per person per year. Non-monetary poverty calculated according to 2022 World Bank Poverty and Shared Prosperity Report.
Source: 2021 EHCVM and World Bank estimates.

Simple regressions confirm the strong association between monetary poverty and electricity and sanitation, implying that these could be important factors on which policymakers could focus. These strong associations emerge even when controlling for the household characteristics and location controls considered in the poverty profile in Chapter 2 (see Column 4 of Table 8). The results imply that, for two Central Africans living in households with otherwise similar characteristics, those with electricity access are about 22.0 percentage points less likely to be monetarily poor than those without electricity access. This is consistent with causal evidence from other countries demonstrating how electrification expands livelihood opportunities and increases assets (Ratledge, Cadamuro, de la Cuesta, Stigler, & Burke, 2022). Similarly, those with access to improved sanitation are 10.9 percentage points less likely to be monetarily poor than those without it.⁴⁸ This also chimes with global evidence on the impact of water, sanitation, and hygiene (WASH) on human capital development: for example, diarrheal disease — almost 90 percent of which can be attributed to suboptimal WASH — has been shown to be the largest cause of morbidity and mortality for children aged less than five (Ramesh, Blanchet, Ensink, & Roberts, 2015). Alleviating these constraints on basic infrastructure offers policymakers actionable ways of reducing monetary poverty.

⁴⁸ These differences — or marginal effects — can be read directly from the coefficients in Table 8 because it is a Linear Probability Model.

TABLE 8. REGRESSION OF POVERTY STATUS ON NON-MONETARY DEPRIVATIONS

	No controls	Basic controls	Location controls	All controls
Educational enrolment deprivation	0.1776*** (0.0153)	0.0963*** (0.0170)	0.1662*** (0.0150)	0.0955*** (0.0164)
Educational attainment deprivation	-0.0044 (0.0173)	0.0118 (0.0237)	-0.0116 (0.0167)	0.0122 (0.0239)
Electricity deprivation	0.2533*** (0.0258)	0.2264*** (0.0263)	0.2246*** (0.0252)	0.2201*** (0.0260)
Drinking water deprivation	0.0777*** (0.0175)	0.0658*** (0.0171)	0.0512*** (0.0179)	0.0461*** (0.0174)
Sanitation deprivation	0.1323*** (0.0182)	0.1187*** (0.0191)	0.1099*** (0.0184)	0.1086*** (0.0184)
Constant	0.2786*** (0.0243)	0.1337*** (0.0430)	0.3295*** (0.0396)	0.1766*** (0.0590)
N	6,411	6,411	6,411	6,411
R-squared	0.1236	0.1937	0.1451	0.2063

Note: : Dependent variable is a binary variable taking 1 if the household is below the overall national poverty line and 0 otherwise. Basic controls include household's displacement status, household size, and the gender, education, and primary activity of the household head. Location controls include dummy variables for urban areas and each region. Standard errors clustered at the enumeration area level are in parentheses.

* p<0,10, ** p<0,05, *** p<0,01.

Source: 2021 EHCVM and World Bank estimates.

4.6. PROGRESS ON NON-MONETARY POVERTY HAS BEEN MIXED, AND THE CENTRAL AFRICAN REPUBLIC'S REGIONS ARE DIVERGING

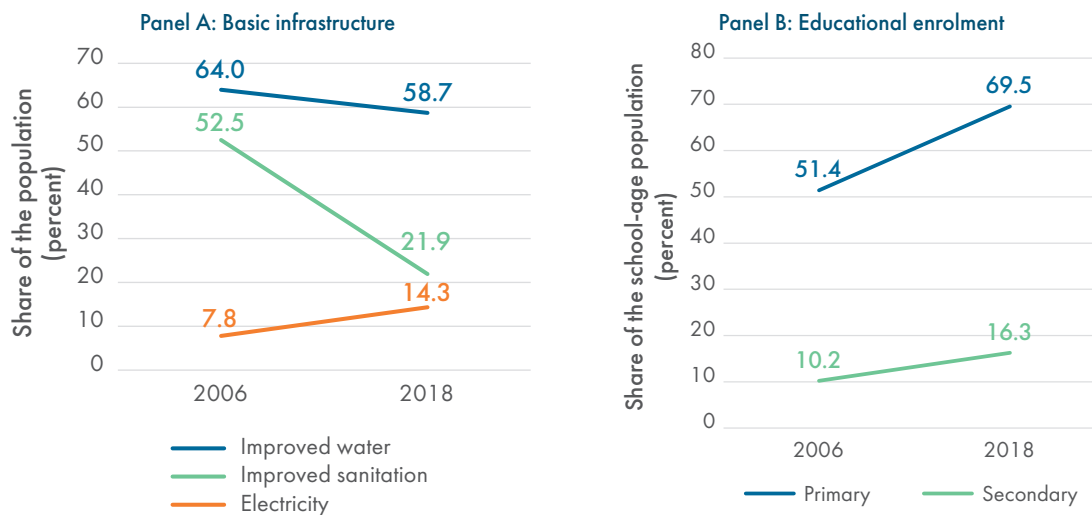
Data on certain non-monetary welfare indicators can be tracked over time. While data from the 2021 EHCVM cannot directly be compared with data from the 2008 ECASEB, the MICs from 2006 and 2018 can be used to assess how access to basic infrastructure and educational enrolment have evolved in recent years.⁴⁹ These trends can be considered at the national, urban-rural, and region level to explore whether different areas of CAR have converged or diverged over time. As discussed in Chapter 1, the 2006–2018 period was especially eventful for CAR, given the outbreak of political-military conflict in 2012 and various other crises.

While access to electricity showed slight improvements between 2006 and 2018, access to improved water and sanitation appears to have worsened. The share of people with electricity access nearly doubled between 2006 and 2018, but still remained extremely low at just 14.3 percent of the population. Over the same period, access to improved water fell slightly while access to improved sanitation more than halved (Figure 40). Looking at the specific categories of toilets used, this is largely because the share of the population using

49 A MICS was also conducted in 2010, but this is not used in the analysis because the level of analysis for that survey was changed to prefecture and urban-rural, while for the 2006 and 2018 MICs the level of analysis was at region and urban-rural-level. The analysis does not try to construct a trend from 2018 to 2021, because of key differences in the way that educational enrolment is captured by the 2018 MICS and the 2021 EHCVM. These differences include the treatment of children who had attended schools at a different level earlier in the school year and children attending a school level that did not correspond with the correct level for their age group.

covered latrines was lower in 2018 than 2006 but also because the share of the population not having any toilet facility increased dramatically. These results demonstrate a mixed picture, at best, for the evolution of basic infrastructure between 2006 and 2018.

FIGURE 40. TRENDS FOR INDICATORS OF BASIC INFRASTRUCTURE AND EDUCATIONAL ENROLMENT IN THE CENTRAL AFRICAN REPUBLIC, 2006–2018

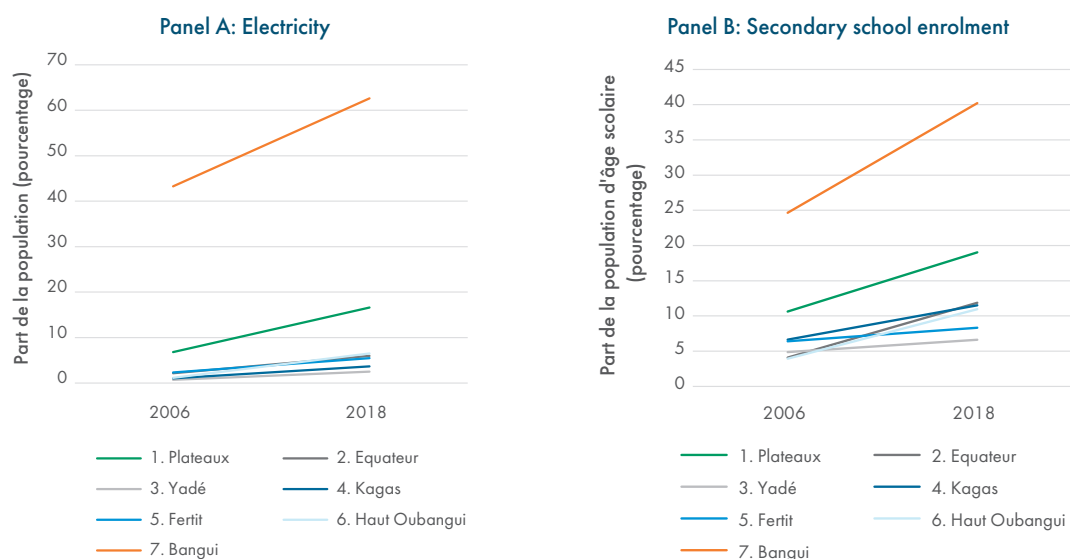


Note: Definitions of each indicator differ slightly from those applied to the 2021 EHCVM. Panel B shows net primary and secondary school enrolment.
Source: 2006 and 2018 MICs and World Bank estimates.

Net enrolment to both primary and secondary education improved between 2006 and 2018, but secondary enrolment remained low. The improvement in net primary school enrolment between 2006 and 2018 was striking, increasing by around one-third. Despite showing some increase, net secondary school enrolment remained low in 2018, at just 16.3 percent. This is important because, as shown in Chapter 2, the gains for poverty reduction kick in more strongly at the secondary education level: households whose heads have at least secondary education are significantly less likely to be in poverty. Thus, despite some progress on educational enrolment, there is still a long way to go.

Some non-monetary welfare indicators have also shown divergence across CAR's regions, with Bangui pulling even further away from the rest. As shown throughout Chapters 2, 3, and 4, Bangui's welfare outcomes are significantly better than the rest of the country. For some indicators, it appears that the gap between Bangui and other regions has been widening over time. This is particularly apparent for access to electricity and secondary school enrolment (Figure 41). Ensuring that interventions to boost basic infrastructure, develop human capital, and reduce poverty reach areas outside the nation's capital therefore represents a key policy priority, if these gaps are to be closed.

FIGURE 41. REGIONAL DIVERGENCE IN ELECTRICITY ACCESS AND SECONDARY SCHOOL ENROLMENT IN THE CENTRAL AFRICAN REPUBLIC, 2006–2018



Note: Definitions of each indicator differ slightly from those applied to the 2021 EHCVM. Panel B shows net secondary school enrolment. Source: 2006 and 2018 MICs and World Bank estimates.

4.7. FROM HUMAN CAPITAL TO LIVELIHOODS

The returns to investing in human capital and improving non-monetary welfare outcomes depend on people's livelihoods. This chapter highlights the prevalence of non-monetary poverty across CAR, with the overlap between different non-monetary poverty dimensions being especially large in rural areas. Access to improved sanitation and electricity seems to be particularly lacking, although they have the strongest association with monetary poverty. Investing in education and basic infrastructure and building human capital therefore appears to be a key channel for poverty reduction. Yet this will not work without simultaneously bolstering livelihoods. If the income-generating activities that reward investments in education, basic infrastructure, or other elements of human capital are not available, then such investments will be in vain. Households also need resilient livelihoods otherwise they may be forced to reduce their own investments in human capital – including by taking children out of school – when shocks hit, as discussed in Chapter 3. Against this backdrop, the poverty assessment now turns to consider livelihoods in CAR in Chapter 5.

5. AGRICULTURE IS CENTRAL TO LIVELIHOODS IN THE CENTRAL AFRICAN REPUBLIC, BUT IT IS NOT LIFTING PEOPLE OUT OF POVERTY

CHAPTER 5 KEY MESSAGES

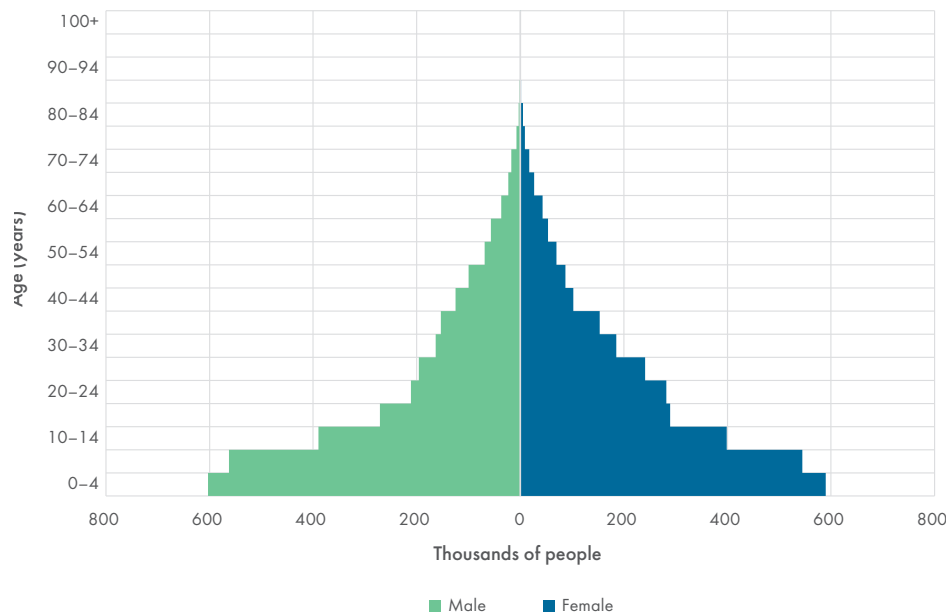
- ▶ The Central African Republic has a potential demographic dividend to harness: with more than three-quarters of its population being aged less than 30, policies related to livelihoods are especially important
- ▶ Around three quarters of 15-64-year-old Central Africans — be they from poor or non-poor households — are working in some form, although unpaid work is more prevalent among those from poorer households
- ▶ Agriculture is by far the most common labor market sector, engaging some 7 in 10 working Central Africans, but it is non-agricultural sectors that are associated with higher consumption levels that could allow an exit from poverty
- ▶ Displaced people living outside of camps are especially likely to work in agriculture, more so than non-displaced people and more so than those in camps
- ▶ Lack of access to inputs — including irrigation, fertilizers, and pesticides — may constrain agricultural productivity, which has direct implications for food poverty
- ▶ Many Central African farming households sell at least part of their produce, but they face difficulties doing so, some of which relate to lack of markets and infrastructure

This chapter of the poverty assessment considers the livelihoods and other income sources on which Central African households rely. The previous chapters have shown that monetary and non-monetary deprivations are widespread in CAR, with human capital severely in deficit. Yet even if education and health outcomes could be improved, that would not translate to enhanced living standards if the jobs to reward those investments in human capital are not available. This begs the question of what Central African workers do, especially those living below the poverty line. To explore these issues, the chapter first outlines the backdrop of CAR's labor market: a young population, mostly of working age. Second, the chapter examines the income sources on which households rely, emphasizing that labor is by far the most important. Third, the chapter considers the types of work that dominate in CAR, demonstrating the country's strong dependence on agriculture. Fourth, given its importance for the Central African labor market, the chapter considers some of the specific constraints on agriculture. Since much of the analysis in this chapter focuses on *people's* jobs, it is possible to divide *individuals* into those who are not displaced and those who are displaced and live outside of camps and those who are displaced and living in camps. The analysis also pays specific attention to gender, given clear differences in the labor market outcomes of women and men.

5.1. THE CENTRAL AFRICAN REPUBLIC HAS A YOUNG POPULATION, POTENTIALLY READY TO WORK

CAR's sizeable young population presents the country with a huge opportunity, but also underlines the importance of supporting productive livelihoods. More than three-quarters of CAR's population is aged less than 30 years, so the country has a "youth bulge": millions of Central Africans are – or will soon be – of working age, defined as those aged between 15-64 years (Figure 42). Finding these young Central Africans productive livelihood opportunities could be a key pillar of inclusive growth and poverty reduction for the country – this would mean successfully harnessing the demographic dividend. However, CAR has yet to harness its growing working-age population, in part due to the types of constraints on productivity that are explored in detail below (Kouame & Fraeters, 2021). Moreover, without productive livelihood opportunities, global evidence suggests that there is also a risk that young people's frustration can fuel conflict and violence, as they become more susceptible to participating in armed groups instead (Cramer, 2010). This risk is intensified by the heightened overall levels of conflict in CAR.

FIGURE 42. POPULATION PYRAMID FOR THE CENTRAL AFRICAN REPUBLIC



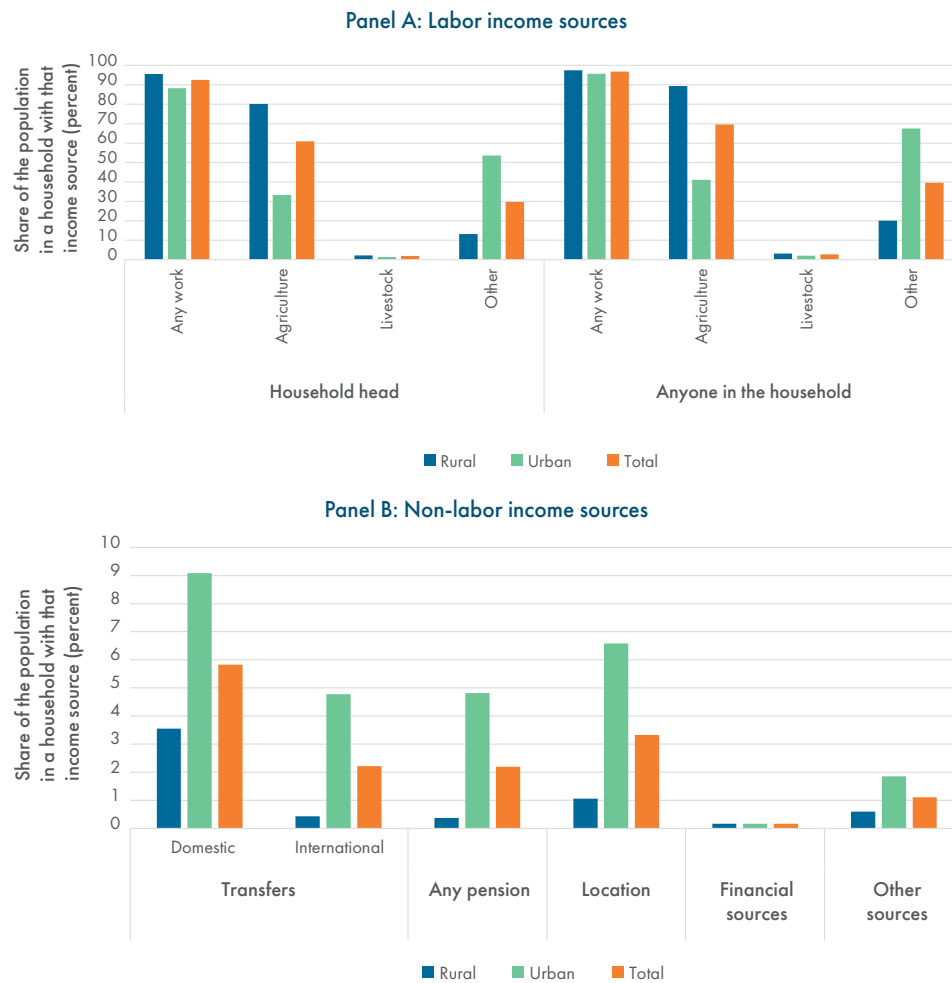
Source: 2021 EHCVM and World Bank estimates.

5.2. LABOR IS THE MAIN INCOME SOURCE ON WHICH CENTRAL AFRICANS RELY

The vast majority of households have members that are working, emphasizing the importance of labor income, and non-labor income sources are rare. In the 2021 EHCVM, virtually everyone in CAR (96.8 percent) lived in a household where at least one member had worked in the previous 12 months (Figure 43). This work was concentrated in agriculture, with 69.5 percent of Central Africans living in a household where at least one member engaged in agriculture in the last 12 months and 60.9 percent living in a household where the head engaged in agriculture. Unsurprisingly, agriculture was even more dominant in rural areas, where 97.5 percent of people lived in a household where at least one member engaged in agriculture and 80.2 percent lived in a

household where the head engaged in agriculture. Other income sources are much scarcer. Just 5.8 percent and 2.2 percent of Central Africans lived in households receiving domestic or international transfers (remittances) overall, and pensions, rental income, and other income sources were even rarer still.

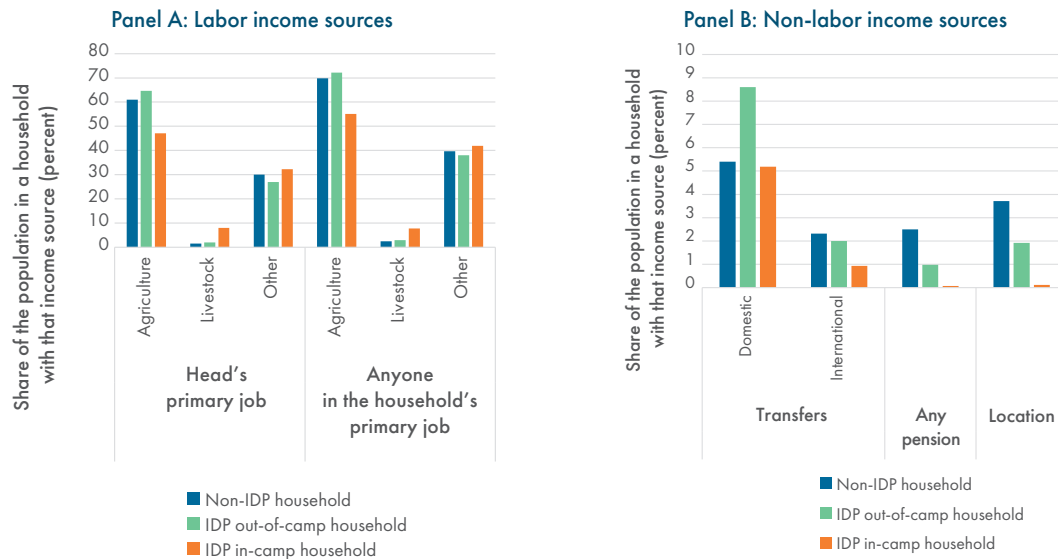
FIGURE 43. INCOME SOURCES IN RURAL AND URBAN AREAS IN THE CENTRAL AFRICAN REPUBLIC



Note: Panel A shows the primary work that households heads and any household members have undertaken in the last 12 months. Panel B shows non-labor income sources in the past 12 months. Statistics use individual weights to provide the share of the population living in each type of household.
Source: 2021 EHCVM and World Bank estimates.

Households' income sources also appear to be influenced by their displacement status. In particular, IDP out-of-camp households appear to be significantly more likely to have household members working in agriculture and to receive domestic transfers (Figure 44). The former result could arise because agriculture may be a low-barrier-to-entry activity in which incoming displaced persons can engage quickly after arriving at their new host household. In camps, however, agriculture may be constrained by the lack of land and other inputs, although it does appear that relying on livestock activities is slightly more likely in camps than for IDP out-of-camp households and non-IDP households. Meanwhile, out-of-camp IDPs may have links and networks to other parts of the country where their previous household is or was located, increasing not only the likelihood that they can find certain types of jobs but also the likelihood that they receive domestic remittances, when compared to IDPs living in camps.

FIGURE 44. INCOME SOURCES IN THE CENTRAL AFRICAN REPUBLIC SPLIT BY HOUSEHOLD DISPLACEMENT STATUS



Note: Panel A shows the work that primary households heads and other household members have undertaken in the last 12 months. Panel B shows non-labor income sources in the past 12 months. Statistics use individual weights to provide the share of the population living in each type of household.

Source: 2021 EHCVM and World Bank estimates.

These income source patterns imply that the labor market is the main vehicle through which the proceeds of growth spread to Central African households. The findings above echo the observation from other developing countries that labor is the main asset — and hence the main income source — for the world's poorest people (Fields, 2019). Since non-labor income is so rare, finding productive livelihood opportunities for Central African workers is a key policy priority, in the medium and long run, for boosting households' welfare and reducing poverty.

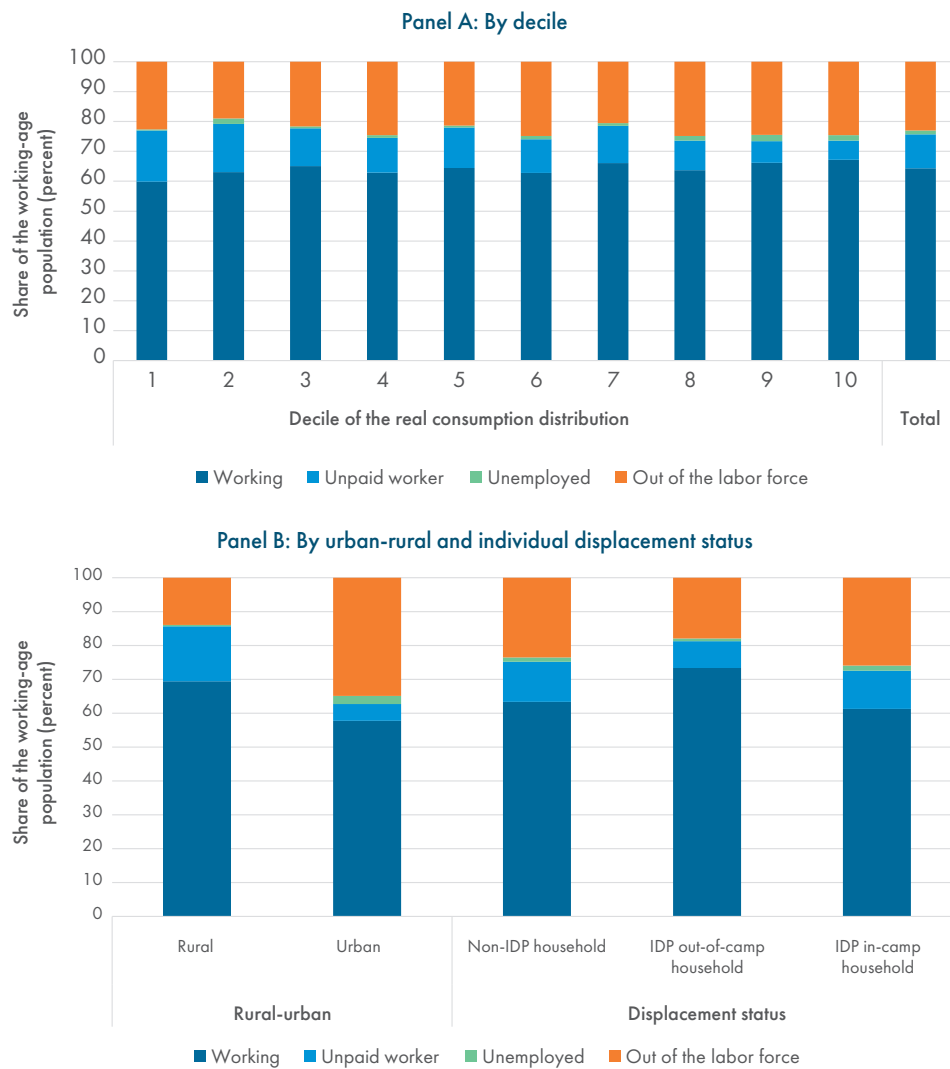
5.3. WORKING ALONE DOES NOT OFFER A CLEAR PATHWAY OUT OF POVERTY

Central Africans' position in the consumption distribution is not strongly associated with whether or not they are working. Taking together those individuals who were working in the last seven days for pay, profit, or gain with those who did unpaid work for another household member, about three-quarters of working-age Central Africans were working according to the 2021 EHCVM, across virtually *all* deciles of the real consumption distribution (Figure 45).⁵⁰ There *are*, however, differences in the share of activities that are paid and unpaid across the consumption distribution, with the latter being more common among the poorer deciles. Yet overall, working on its own does not eliminate the risk of falling below the poverty line. Many Central Africans experience in-work poverty: this is the first indication that it is the specifics of the activities that people do, which most influences their welfare. The results also suggest that unemployment — defined strictly as those people who are

⁵⁰ Those individuals working for pay profit or gain were identified using filter questions on farming, non-farm self-employment, wage work, and apprenticeships. This includes individuals who were temporarily absent from such activities.

not working but who actively searched for work in the last 30 days – is virtually non-existent in CAR. As in many other countries in the region, it is unlikely that Central Africans can pause work entirely and openly search for work, given the pressing need to boost their household’s income or subsistence food provision.

FIGURE 45. LABOR MARKET STATUS BY CONSUMPTION DECILE, URBAN-RURAL, AND INDIVIDUAL DISPLACEMENT STATUS



Note: Statistics focus on labor market status during the last seven days. “Working” includes those who worked for pay, profit, or gain including farmers, non-farm self-employed workers, wage workers, and apprentices, as well as those who were temporarily absent from those activities. Sample restricted to those of working age (15-64 years).

Source: 2021 EHCVM and World Bank estimates.

Nevertheless, working status does appear to be related to whether Central Africans live in urban areas and to their displacement status. First, the share of people working – and especially the share working without pay, profit, or gain – is significantly higher in rural areas than in urban areas. Combining those working for pay, profit, or gain with those working unpaid, some 85.7 percent of the working-age population were working in rural areas compared with 62.7 percent in urban areas. Turning to displacement status, it appears that those

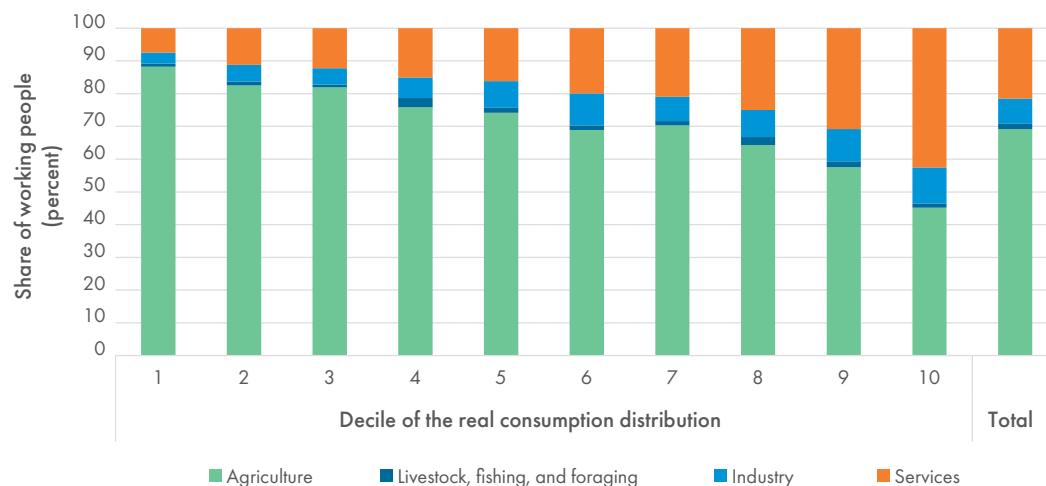
displaced individuals living outside of camps are more likely than non-displaced people *and* people living in camps to be working. This could demonstrate the added imperative displaced people have to provide for themselves and for their host household, whilst also having access to more work opportunities than those people living in camps.

5.4. THE JOBS MOST ABLE TO LIFT CENTRAL AFRICANS OUT OF POVERTY ARE RARE

Echoing the statistics on income sources, agriculture is by far the most common primary activity among working Central Africans, although it is disproportionately undertaken by people from poorer households.

Among those Central Africans who were working, 69.2 percent were primarily engaged in agriculture in the last 12 months, compared with just 1.6 percent in livestock, forestry, and fishing, 7.7 percent in industry, and 21.5 percent in services (Figure 46). The most prevalent activity in the service sector is retail and wholesale trade (buying and selling), which accounts for 44.9 percent of service-sector workers. The share of workers engaged primarily in agriculture is even higher among lower deciles of the consumption distribution. Poverty is so widespread in CAR that many jobs, regardless of sector, are not enough to lift households out of poverty, but it appears to be non-agricultural jobs that have the best chance of doing so.

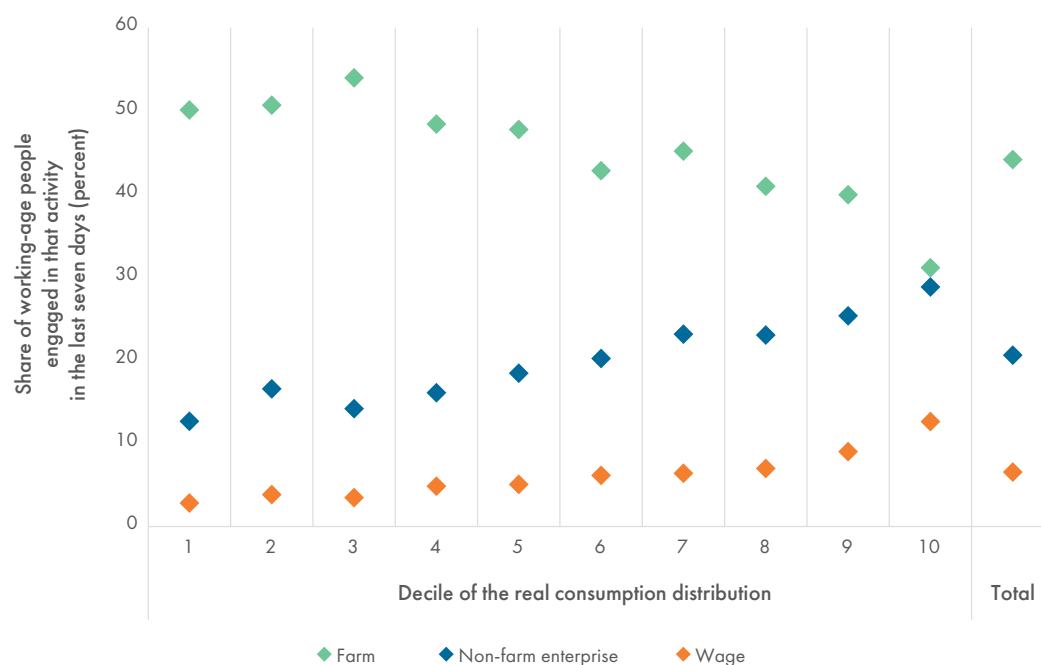
FIGURE 46. PRIMARY ACTIVITIES UNDERTAKEN BY WORKING CENTRAL AFRICANS BY CONSUMPTION DECILE



Note: Statistics focus on the primary activity undertaken during the last 12 months. Sample restricted to those working in the last seven days.
Source: 2021 EHCVM and World Bank estimates.

The statistics on the types of jobs in which people engaged during the last seven days echo the results on individuals' primary activities for the last 12 months. Wage work appears to have the strongest association with being in higher deciles of the consumption distribution, but it is by far the least common type of job in CAR: just 6.6 percent of working-age Central Africans had engaged in wage work in the last seven days (Figure 47).

FIGURE 47. JOB TYPES UNDERTAKEN BY WORKING-AGE CENTRAL AFRICANS BY CONSUMPTION DECILE

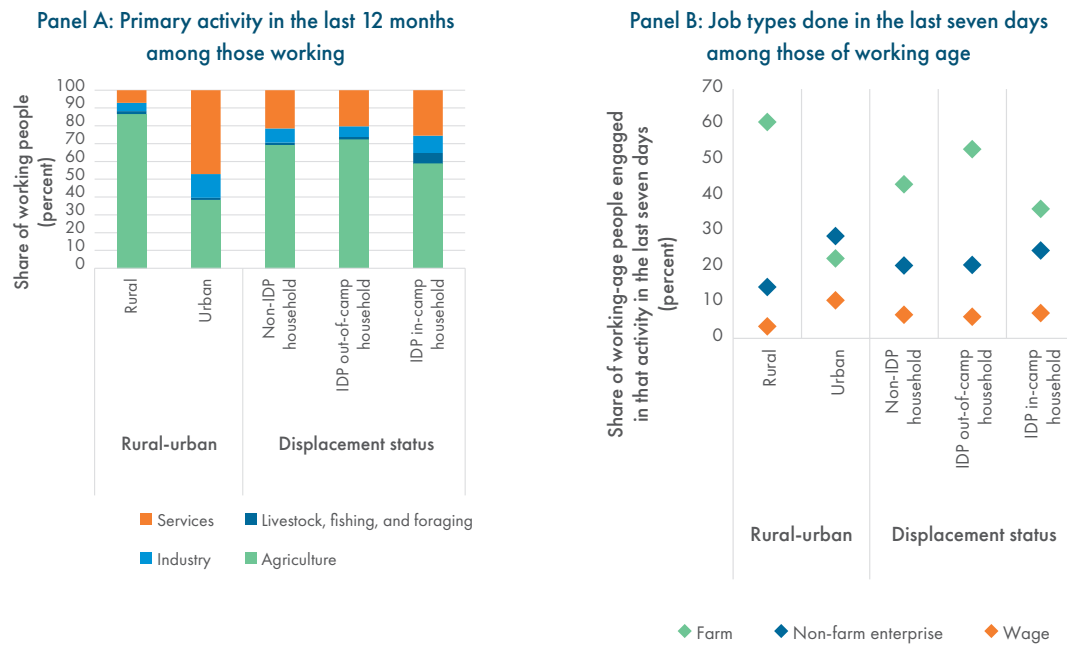


Note: Statistics focus on the whether or not each job was undertaken in the last seven days, with more than one type of job being possible. The sample is restricted to those of working age (15-64 years).

Source: 2021 EHCVM and World Bank estimates.

There were also differences in the types of jobs that rural and urban dwellers and displaced and non-displaced people do. Unsurprisingly, agricultural activities and farm work were more prevalent in rural areas than in urban areas (Figure 48). Yet, echoing the findings on income sources, agricultural and farming jobs are also more prevalent among displaced people living outside of camps compared both to those living in camps and to non-displaced people. This reinforces the notion that farming activities may be relatively easy to start for those who have been displaced, but whose access to agricultural inputs is not restricted by virtue of being in a camp.

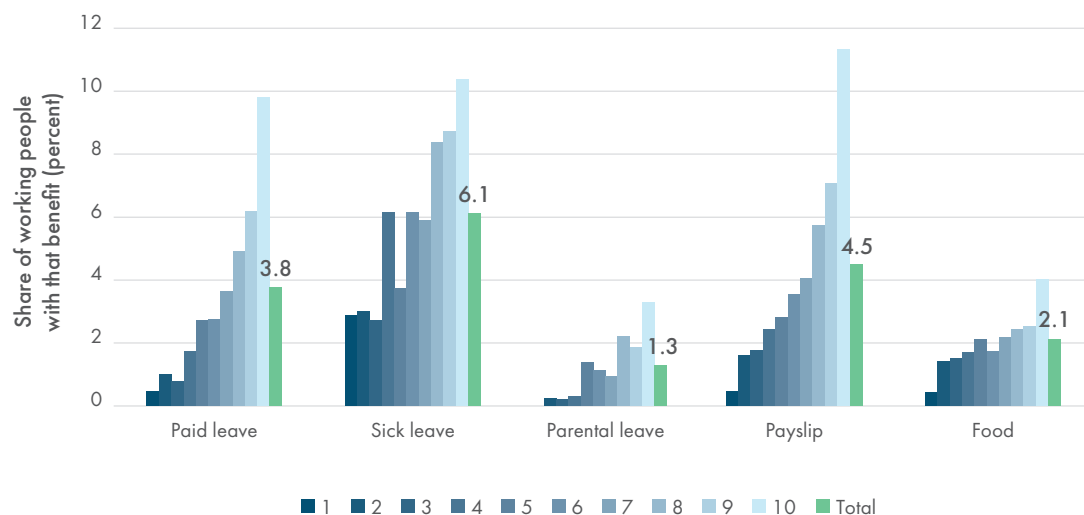
FIGURE 48. PRIMARY ACTIVITIES AND JOB TYPES UNDERTAKEN BY CENTRAL AFRICANS BY URBAN-RURAL AND INDIVIDUAL DISPLACEMENT STATUS



Note: Statistics in Panel A focus on the primary activity undertaken during the last 12 months, with the sample restricted to those working in the last seven days. Statistics in Panel B focus on the whether or not each job was undertaken in the last seven days, with more than one type of job being possible. The sample for Panel B is restricted to those of working age (15-64 years).
Source: 2021 EHCVM and World Bank estimates.

Other markers of job formality are also rare and concentrated among workers from richer households. First, even wage workers may lack the non-pecuniary benefits of jobs, which — according to International Labour Organisation (ILO) standards — are associated with formal jobs. This includes access to leave, legal protection from documents like contracts or pay slips, and other in-work benefits. Very few Central African workers enjoy such non-pecuniary job benefits: just 3.8 percent of workers had paid leave, 4.5 percent received a formal pay slip, and 2.1 percent received food from their employer (Figure 49). Wage jobs are scarce anyway in CAR, but it appears that getting a wage job is no guarantee of receiving these benefits, especially for those wage workers from poorer households. Second, non-farm enterprises appear to be very small scale, on average: just 11.8 percent of non-farm enterprises in the 2021 EHCVM reported employing anyone from outside the household. This is further evidence that working outside of agriculture is not sufficient in itself for holding a productive job that can lift people out of poverty.

FIGURE 49. PREVALENCE OF IN-WORK BENEFITS FOR CENTRAL AFRICAN WORKERS BY CONSUMPTION DECILE

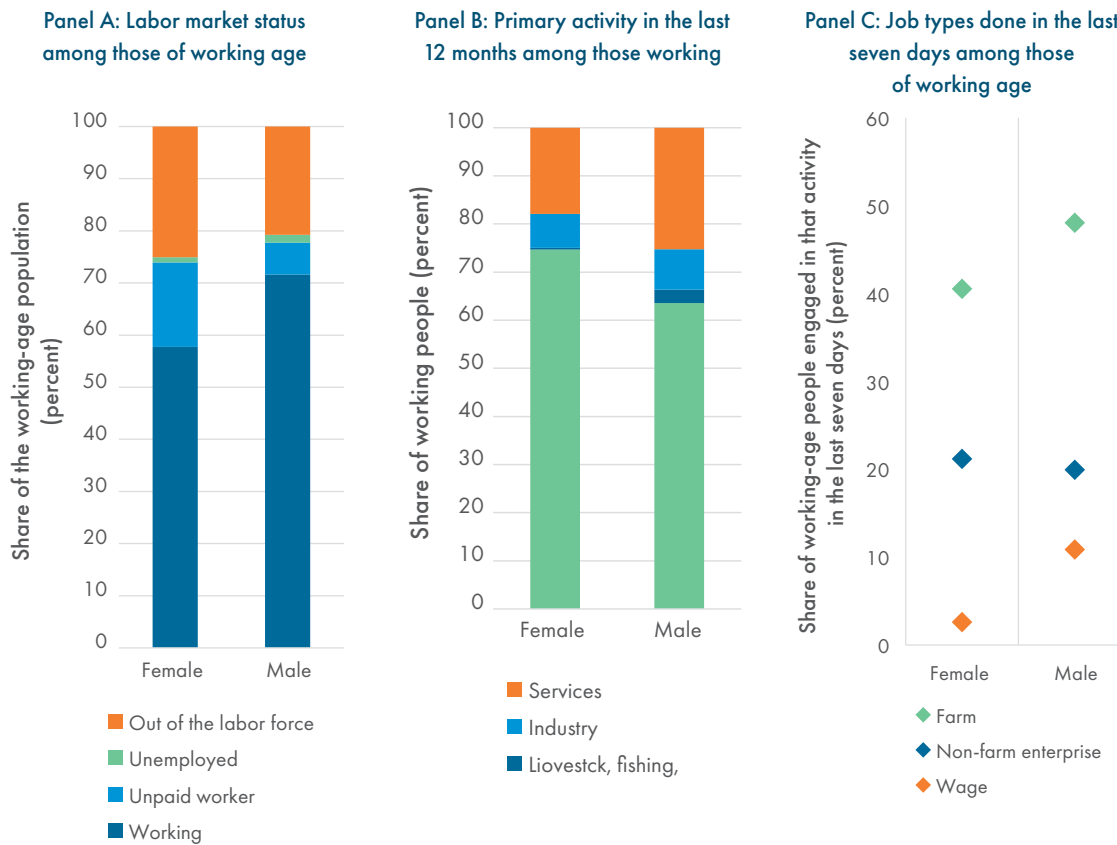


Note: Sample restricted to those working in the last seven days. Bars represent the decile of the real consumption distribution for the household in which each worker lives. Source: 2021 EHCVM and World Bank estimates.

5.5. LIVELIHOOD OPPORTUNITIES ARE NOT EQUAL FOR WOMEN AND MEN

Central African women are less likely than Central African men to be engaged in the jobs best able to lift people out of poverty. Taking together those working for pay, profit, or gain and unpaid workers, 73.9 percent of working-age women were working in CAR in the 2021 EHCVM data compared with 77.7 percent of working-age men (Figure 50). Yet the differences in the activities and the types of jobs in which women and men engage were more profound. First, among those who worked in the last seven days, women were significantly more likely to engage in unpaid work and to engage in agriculture, both of which are associated with lower real consumption levels. Second, women were almost absent from wage work: just 2.6 percent of working-age women did wage work in the last seven days compared with 10.9 percent of working-age men. Therefore, finding ways to alleviate the specific constraints that women face in accessing productive livelihoods marks an especially important policy priority for unleashing inclusive growth and reducing poverty.

FIGURE 50. GENDER DIFFERENCES IN LABOR MARKET OUTCOMES IN THE CENTRAL AFRICAN REPUBLIC



Note: For Panel A, statistics focus on labor market status during the last seven days. “Working” includes those who worked for pay, profit, or gain including farmers, non-farm self-employed workers, wage workers, and apprentices, as well as those who were temporarily absent from those activities. Sample restricted to those of working age (15-64 years). For Panel B, statistics focus on the primary activity undertaken during the last 12 months. Sample restricted to those working in the last seven days. For Panel C, statistics focus on the whether or not each job was undertaken in the last seven days, with more than one type of job being possible. The sample is restricted to those of working age (15-64 years).

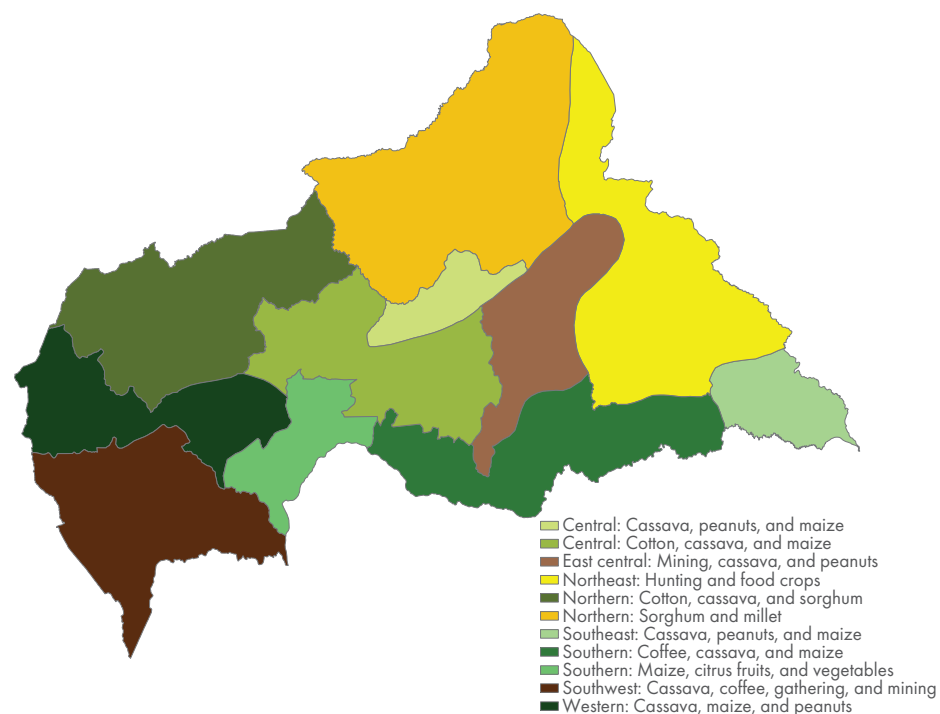
Source: 2021 EHCVM and World Bank estimates.

5.6. AGRICULTURE IS THE CENTRAL AFRICAN REPUBLIC’S MAIN EMPLOYER BUT IT FACES SEVERAL KEY CONSTRAINTS

Rainfed agriculture is prevalent throughout CAR, but the specific crops grown vary across the country. Cassava, maize, rice, sorghum, and millet comprise the main staple crops cultivated in CAR, with coffee, peanuts, and other fruit and vegetables also being grown by some farmers (FAO, 2022). The types of crops on which farmers focus differ across CAR, with cassava, maize, and rice being the more common staples in humid equatorial climate areas in the south and sorghum and millet being more common in the Sahelo-Sudanian climate in the north (World Bank, 2023). In this way, the country can be divided into distinct “livelihood zones” (Figure 51). These describe the dominant income-generating (and subsistence) activities in different areas (FEWS NET, 2012). Many of these agricultural activities are rainfed, underlining their vulnerability to climate shocks, which could

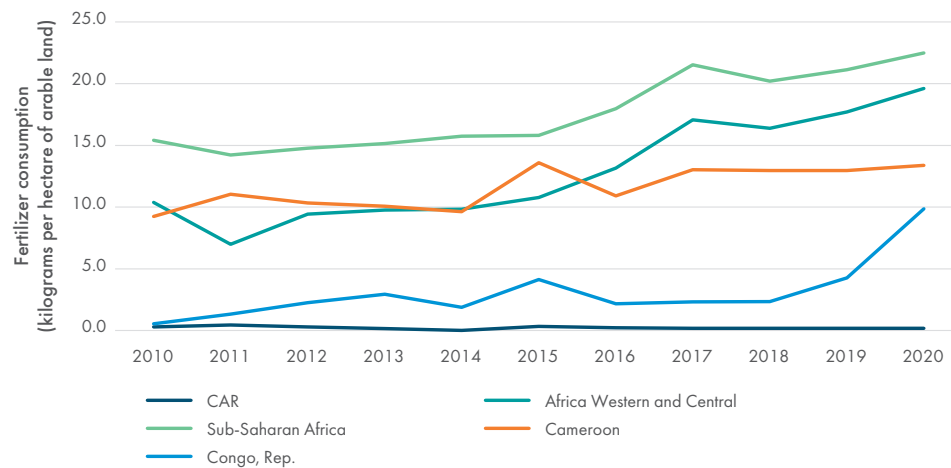
push agricultural households into — or deeper into — poverty (USAID, 2018; World Bank, 2021). Supporting diversification or adaption of more climate-resilient crop-production practices could therefore be an important avenue for policymakers.

FIGURE 51. LIVELIHOOD ZONES IN THE CENTRAL AFRICAN REPUBLIC



Source: FEWS NET and World Bank estimates.

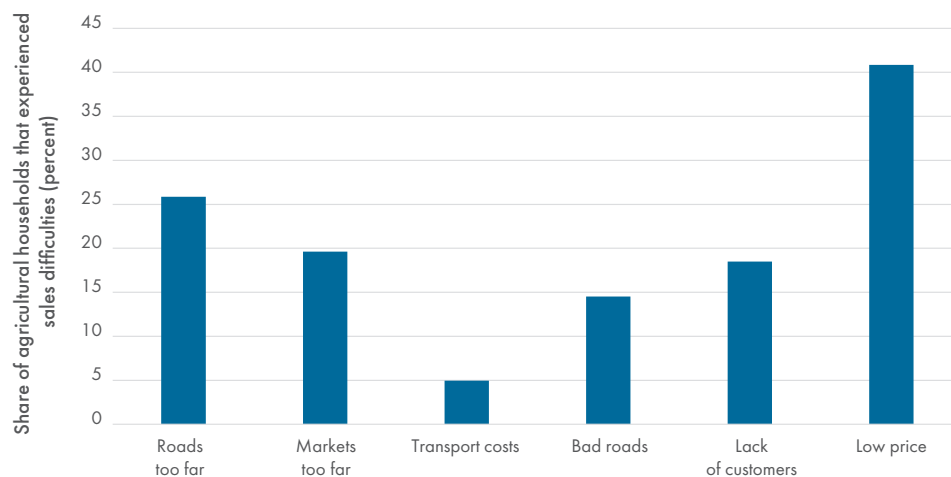
Macroeconomic data and cross-country comparisons indicate that agricultural productivity is low in CAR, which could constrain farmers' incomes and may partly explain why food poverty is so high. As discussed in Chapter 1, the share that agriculture contributes to GDP (about one-third) is less than half the share that agriculture contributes to employment (about two-thirds). This demonstrates that CAR's other sectors — especially services — are more productive than agriculture. This links with evidence suggesting CAR's agricultural total factor productivity (TFP) growth has stalled since the outbreak of political-military conflict in 2012 (USDA, 2022; World Bank, 2022). Relatedly, cross-country data suggest that CAR may be lagging its regional peers in terms of the use of agricultural inputs. In 2020, Cameroon and the Republic of Congo used respectively more than 70 and more than 50 times as much fertilizer for farming — measured as kilograms of fertilizer used per hectare of arable land — compared with CAR (Figure 52). The gap between CAR and its neighbors in terms of fertilizer usage has also increased over time. This demonstrates the types of constraints that farmers may face in trying to boost their incomes and escape poverty in CAR. These constraints have knock-on effects on all Central Africans, as the prevalence of food poverty in the country indicates.

FIGURE 52. FERTILIZER USAGE IN THE CENTRAL AFRICAN REPUBLIC AND COMPARATOR COUNTRIES

Source: WDIs and World Bank estimates.

Notwithstanding the constraints on agricultural productivity, most agricultural households in CAR report trying to sell at least some of what they produce, but they face difficulties in doing so. At the time of the

interview for the 2021 EHCVM, 70.5 percent of households reported that they had cultivated land in the previous agricultural cycle (the 2019/20 season), of which about 87.8 percent reported having harvested at least some of their crops. Of those agricultural households that had harvested, as many as 81.4 percent reported having sold at least some of their harvest, indicating that the agricultural activities in which Central African households engage are not purely subsistence. Yet the majority (53.0 percent) of households who sell their agricultural produce encounter difficulties, of which low prices is the most common followed by roads and markets being too far away (Figure 53). This lack of access to the markets and infrastructure that could support agricultural productivity is explored in more detail using geospatial data in Chapter 6.

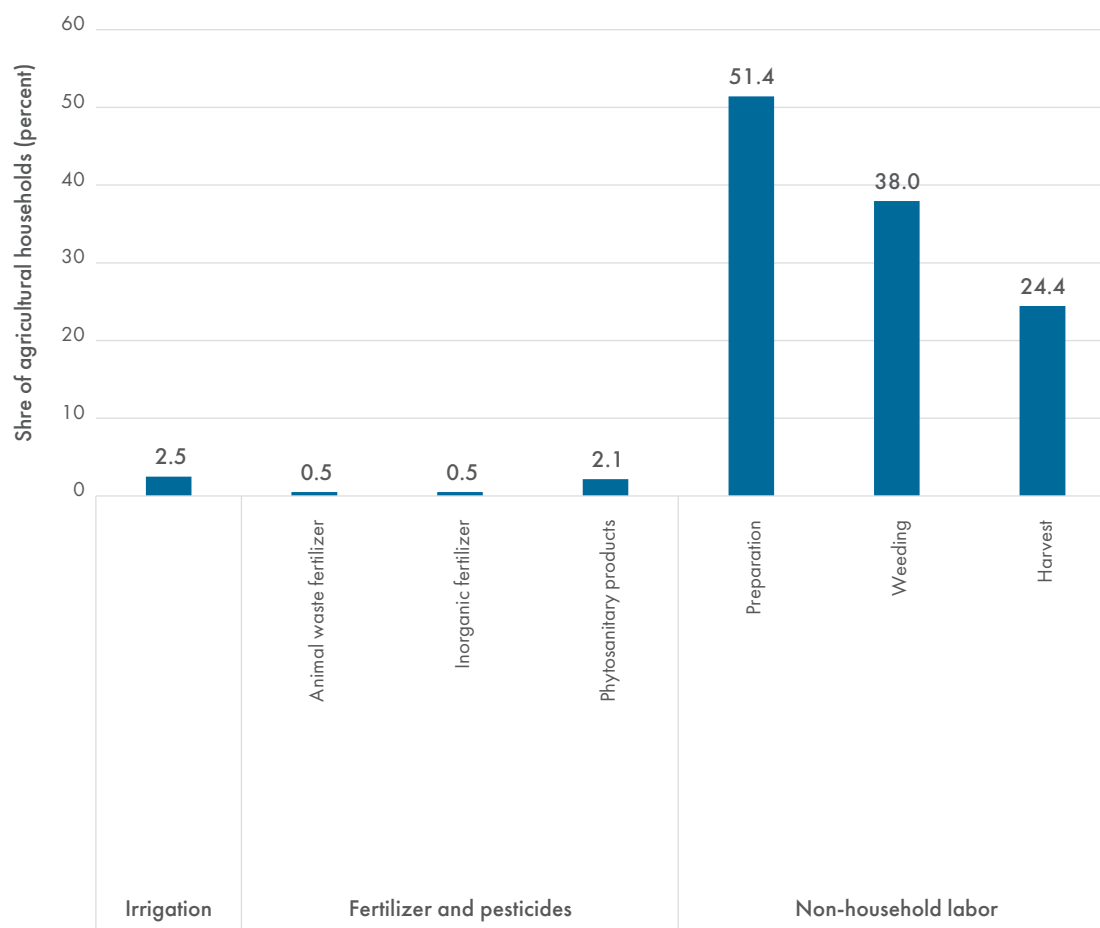
FIGURE 53. DIFFICULTIES ENCOUNTERED BY CENTRAL AFRICAN HOUSEHOLDS TRYING TO SELL THEIR AGRICULTURAL PRODUCE

Note: Sample restricted to agricultural households that tried to sell their agricultural produce.

Source: 2021 EHCVM and World Bank estimates.

The EHCVM data suggest that access to key farm inputs is limited: use of irrigation, fertilizers, and pesticides is sparse. Less than 5 percent of agricultural households in the EHCVM sample report using non-labor inputs that could boost agricultural productivity, including irrigation, fertilizers, and pesticides (Figure 54). This chimes with macroeconomic evidence suggesting that total factor productivity in CAR is limited and underlines a key policy priority for boosting welfare and alleviating poverty in the country.

FIGURE 54. USE OF INPUTS AMONG AGRICULTURAL HOUSEHOLDS IN THE CENTRAL AFRICAN REPUBLIC



Note: Sample restricted to agricultural households.
Source: 2021 EHCVM and World Bank estimates.

Land does not appear to be a binding constraint on agricultural production, in line with CAR's low population density. About 83.5 percent of agricultural households own at least some of the land that they cultivate, with most of the remainder “renting” land for free.⁵¹ Among those households that own land for agriculture, just 3.4 percent declared that they thought there would be a risk of a disagreement concerning their land rights over the next five years. Given the sparsity of the population, land — especially in remote and rural

⁵¹ The share of agricultural households owning land was even higher in the *Enquête Nationale Agricole* (ENA), at 97.1 percent.

areas — appears to be available for many farmers. This chimes with qualitative evidence suggesting that land is traditionally assigned according to “*droit à la hache*” (law of the axe), whereby it belongs to whomever clears and cultivates it (FAO, 2005).

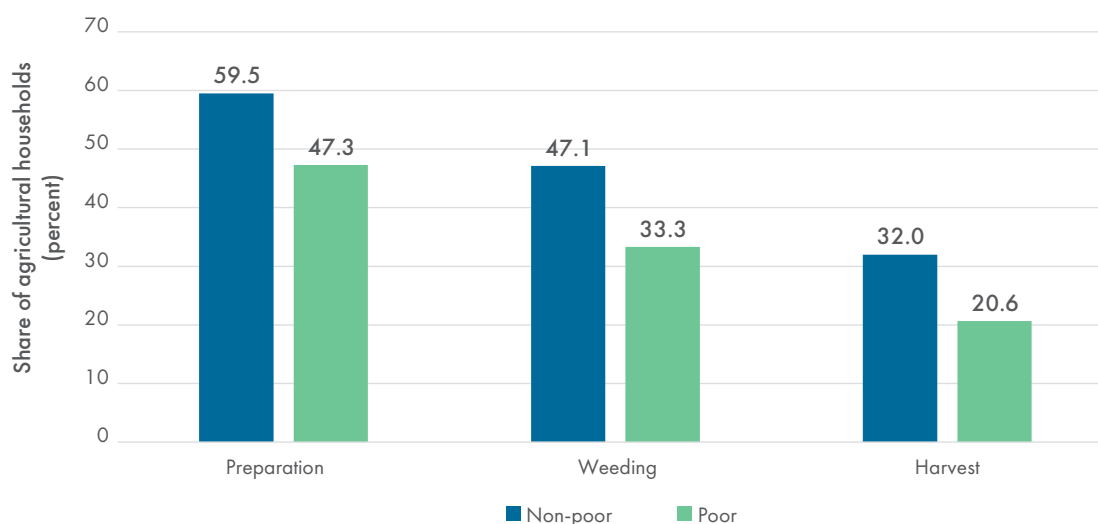
The results of the 2021 EHCVM mirror those from the *Enquête Nationale Agricole (ENA)*, further demonstrating the constraints on inputs and equipment that Central African farmers face. The ENA surveyed around 5,000 agricultural households across CAR’s seven regions in 2021 and 2022, providing additional detail on the country’s farming practices (ICASEES and World Bank, 2023). According to the survey, just 1.8 percent of agricultural households used herbicides, 1.6 percent used insecticides, and just 0.7 percent used nitrogen, phosphorus, or potassium (NPK) fertilizer: these estimates are in line with what is observed in the EHCVM data. The ENA data also demonstrate the low prevalence of mechanization in CAR, with only 2.4 percent of agricultural households using an animal-drawn plough, 0.5 percent using a motorized tiller, and 0.4 percent using a tractor. Indeed, as many as one-quarter of Central African agricultural households do not even use basic tools of any kind (such as hoes, spades, and machetes) for farming. Thus, both the ENA and EHCVM data reveal the constraints on agricultural inputs in CAR.

While fertilizer and equipment are scarce, many Central African agricultural households appear to use labor from outside the household. With so many Central Africans working in agriculture, it appears that engaging workers from outside the household is not uncommon: among those households that cultivated fields in the previous agricultural cycle, 51.4 percent employed laborers from outside the household to support plot preparation, 38.0 percent did so for weeding, and 24.4 percent did so for harvesting (Figure 54). Agriculture in CAR therefore creates some form of employment beyond the household itself, further underlining the importance of raising farms’ productivity.

Employing labor from outside the household to work on the farm is associated with lower chances of being in poverty. Looking first at the raw correlation between poverty and the use of non-household labor, non-poor agricultural households are 12.2 percentage points, 13.8 percentage points, and 11.4 percentage points more likely to use non-household labor on plot preparation, weeding, and harvesting respectively than poor agricultural households (Figure 55). This difference can be interrogated further by running a regression with use of non-household labor as the dependent variable and poverty status as an independent variable, then gradually adding control variables (Table 9). Even when controlling for location, agricultural sales, the use of other inputs, and several key household characteristics, there is still a statistically significant difference of at least 11 percentage points between poor and non-poor agricultural households’ chances of using non-farm household labor for plot preparation.⁵² Insofar as use of non-household labor is a marker of farm size and productivity, this demonstrates how creating the conditions for farms to grow could lift Central African households out of poverty.

52 Similar results emerge for agricultural households’ use of non-household labor for weeding and harvesting.

FIGURE 55. USE OF NON-HOUSEHOLD LABOR AMONG AGRICULTURAL HOUSEHOLDS IN THE CENTRAL AFRICAN REPUBLIC, BY POVERTY STATUS



Note: Sample restricted to agricultural households. Charts report poverty using the overall national poverty line of 263,485 XAF per person per year.
Source: 2021 EHCVM and World Bank estimates.

TABLE 9. PROFILE OF HOUSEHOLDS USING NON-HOUSEHOLD LABOR FOR PLOT PREPARATION

	Location only	Adding sales	Adding inputs	Adding household characteristics
Household is poor	-0.1145*** (0.0180)	-0.1132*** (0.0179)	-0.1114*** (0.0180)	-0.1287*** (0.0187)
Household harvested crops		0.0321 (0.3651)	0.0962 (0.4157)	0.0774 (0.3690)
Household sold crops		0.0844*** (0.0188)	0.0855*** (0.0188)	0.0805*** (0.0187)
Used inorganic fertilizer			0.1317 (0.0952)	0.1551 (0.0965)
Used phytosanitary products			0.1404** (0.0623)	0.1259** (0.0609)
IDP in-camp household				-0.0870* (0.0504)
IDP out-of-camp household				0.0603** (0.0244)
Household size				0.0121*** (0.0033)
Household head male				-0.0855*** (0.0198)
Household head has primary education				0.0745*** (0.0185)

	Location only	Adding sales	Adding inputs	Adding household characteristics
Household head has secondary education				0.1029*** (0.0378)
Household head has post-secondary education				0.0706 (0.0916)
Region fixed effects	Y	Y	Y	Y
Urban-rural dummy	Y	Y	Y	Y
N	4,273	4,273	4,273	4,273
R-squared	0.0332	0.0389	0.0412	0.0570

Note: Dependent variable is a binary variable taking 1 if the household uses non-household labor for plot preparation and 0 otherwise. Sample restricted to household that cultivated fields in the previous agricultural cycle. This is a linear probability model so the coefficients can be read directly as marginal effects. Standard errors clustered at the enumeration area level are in parentheses.

* $p < 0,10$, ** $p < 0,05$, *** $p < 0,01$.

Source: 2021 EHCVM and World Bank estimates.

Use of non-household labor is also associated with commercialization and with the use of other inputs.

In the same regressions described above, it also emerges that agricultural households selling their crops and the handful of agricultural households using phytosanitary products (pesticides) are more likely to use non-household labor for plot preparation (Table 9). This further reinforces the idea that expanding inputs and access to markets can help farms grow and, in turn, reduce poverty. The shoots of growing agricultural productivity are emerging, but they require careful nurturing.

5.7. PROVIDING THE FOUNDATIONS FOR MORE PRODUCTIVE LIVELIHOODS

Specific interventions can help to boost agricultural productivity, but improving the bedrock of infrastructure may also unleash farms' potential as well as unlocking other pathways to poverty reduction. Agriculture dominates incomes and livelihoods in CAR, but it also has significantly lower overall productivity than other sectors. Supporting workers to shift from agriculture to services — by building human capital, supporting labor mobility, or other macroeconomic reforms — could provide one way to increase incomes. Yet this process of structural transformation is proving slow, while CAR's poverty-reduction challenge is immediate. Therefore, enhancing agricultural productivity is essential. As this chapter demonstrates, this partly hinges on improving access to key inputs — including tools and fertilizers — as well as potentially helping farmers diversify their crops and crop-production practices to make them more resilient to climate change. Yet access to markets is also a key constraint on farms' profitability, as households themselves report in the EHCVM data. With this in mind, Chapter 6 turns to consider Central African households' physical access to services, basic infrastructure, and markets using unique geospatial data. Investing in infrastructure could bolster the foundations of CAR's road to poverty reduction.

6. ACCESS TO SERVICES AND INFRASTRUCTURE MUST BE IMPROVED TO PROVIDE THE BEDROCK FOR POVERTY REDUCTION

CHAPTER 6 KEY MESSAGES

- ▶ Many Central African children live prohibitively far away from schools, especially secondary schools; the situation is worse in remote and rural areas
- ▶ Some Central Africans also live prohibitively far away from health facilities
- ▶ About three-quarters of Central Africans live within 15-minutes' walk of an improved water point, so other factors — such as affordability, private ownership, or security — may be the main constraints on households' water outcomes
- ▶ The supply of electricity and the quality of roads represent severe deficiencies in the country's infrastructure
- ▶ Lack of physical access to services hampers human capital development; when walking times to schools are too long, educational enrolment at both the primary and secondary level are lower
- ▶ Physical access is also directly correlated with poverty, demonstrating the importance of investing in improving access to education, health, and basic infrastructure for poverty reduction

This chapter of the poverty assessment considers physical access to basic services and infrastructure in CAR, demonstrating their link to poverty. The previous chapters have shown the strong association between poverty and non-monetary deprivations — including for education and water, sanitation, and electricity outcomes — as well as livelihoods, especially agricultural livelihoods. Yet this begs the question of what lays the foundations for households' non-monetary welfare and livelihood outcomes. This chapter uses unique cartographic census data — which map out the location and characteristics of schools, health facilities, water points, and many other key elements of infrastructure — in combination with granular population data and the 2021 EHCVM to try and answer this question. First, the chapter considers overall physical access to schools and health facilities, using an innovative mobility model, which assesses how long it would take Central Africans to reach their nearest facility. Second, the chapter adopts a similar approach to explore basic infrastructure and markets, underlining how CAR's dilapidated road network could be an underlying constraint on access. Third, the chapter links the cartographic census data and the EHCVM data to show the relationship between physical access and poverty. This provides key guidance on the types and locations of investments in services and infrastructure that could kickstart poverty reduction.

6.1. UNIQUE GEOSPATIAL DATA ILLUMINATE ACCESS TO SERVICES AND BASIC INFRASTRUCTURE

The analysis marshals unique geospatial data sources to assess Central Africans' physical access to services and basic infrastructure. Since 2022, ICASEES has been collecting detailed cartographic census data, which map out the locations of schools, health facilities, water points, shops, farms, and various other key elements of infrastructure. These data also provide some information on facilities' characteristics and quality. Since data collection was ongoing at the time of analysis, not all of CAR is adequately covered, but the partial data on which this poverty assessment is based cover communes containing almost three-quarters of the country's population.⁵³ This is accompanied by granular population data showing where Central Africans live taken from WorldPop, meaning that all of the results can be population weighted (Bondarenko, Kerr, Sorichetta, Tatem, & WorldPop, 2020). Moreover, the geocoordinates of households interviewed in the 2021 EHCVM can be used to merge household-level outcomes with these detailed geospatial data sources, which enables analysis linking physical access and poverty.

More accurate measures of physical access to services and basic infrastructure can be constructed using an innovative mobility model. While the geospatial data alone reveal the *distance* between where Central Africans live and the places they may want to reach, the *time* it takes to travel between these points may be different due to variation in topography, the presence of physical barriers such as rivers, or differences in the quality of paths and roads. Specialized mobility models — known as “friction surface” models — can account for these issues to provide a more accurate picture of how long it takes to reach places where services and basic infrastructure are located. This can be done for walking alone or mixed transport modes for journeys taken on foot and by vehicle. The latter assumes that any journeys along roads are taken at the maximum speed a vehicle can travel along that type of road. The results that follow focus first on journeys taken on foot, as other transport modes may not be available to poor people, if private or public transport is unavailable or unaffordable. The specific approach applied in the analysis that follows is modified from the model developed by Kosmidou-Bradley and Blankespoor (2019) for Afghanistan.

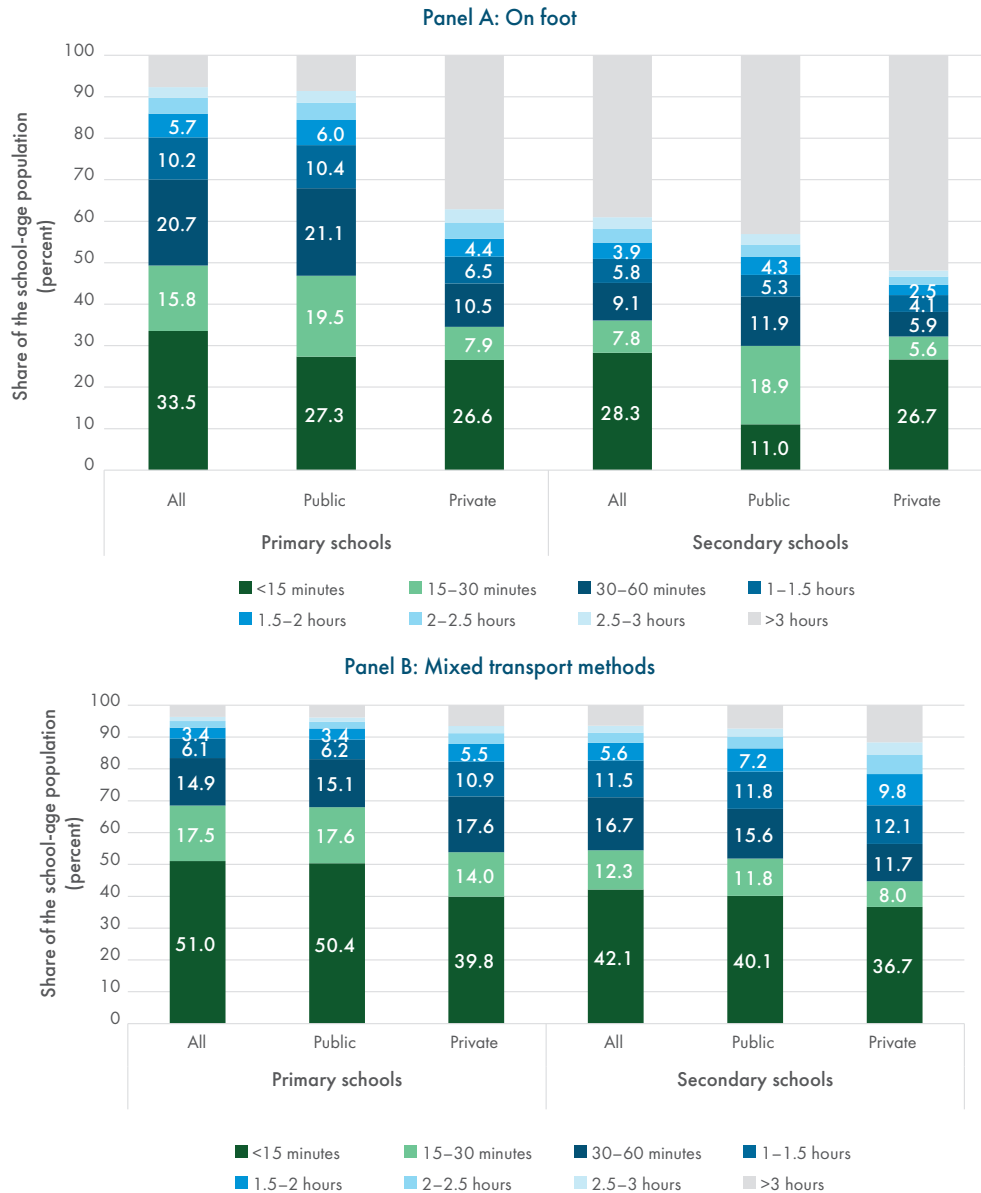
6.2. MANY CENTRAL AFRICANS WOULD STRUGGLE TO REACH SCHOOLS AND HEALTH FACILITIES

Across CAR, many children live prohibitively far away from schools, especially at the secondary level. Looking at the results of the mobility model described above, it emerges that 50.7 percent of primary-school-age children live more than 30 minutes away on foot from the nearest primary school and 30.0 percent live more than one hour away (Figure 56). For secondary schools, the situation is even graver, with some 64.0 percent of secondary-school-age children living more than 30 minutes away on foot and about 54.8 percent living more than one hour away. Focusing on cutoffs at 30 minutes and one hour is roughly in line with *distance-based* standards applied globally. In many countries, 3 kilometers is seen as the maximum distance children should have to walk to reach school: the mobility model indicates that walking 3 kilometers would take somewhere between 30 minutes and one hour for school-aged children (Theunynck, 2009). Even with mixed transport modes — the availability of which may themselves be limited — many children could still struggle to reach their nearest school. Allowing for mixed transport methods, 31.5 percent of primary-school-age children would

⁵³ Specifically, the share of people living in a commune where coverage was above 95 percent is 72.8 percent.

need more than 30 minutes to reach primary school and 45.6 percent of secondary-school-age children would need more than 30 minutes to reach secondary school. Therefore, physical access appears to be a serious constraint on attending school.⁵⁴

FIGURE 56. TIME TAKEN TO REACH PRIMARY AND SECONDARY SCHOOLS IN THE CENTRAL AFRICAN REPUBLIC



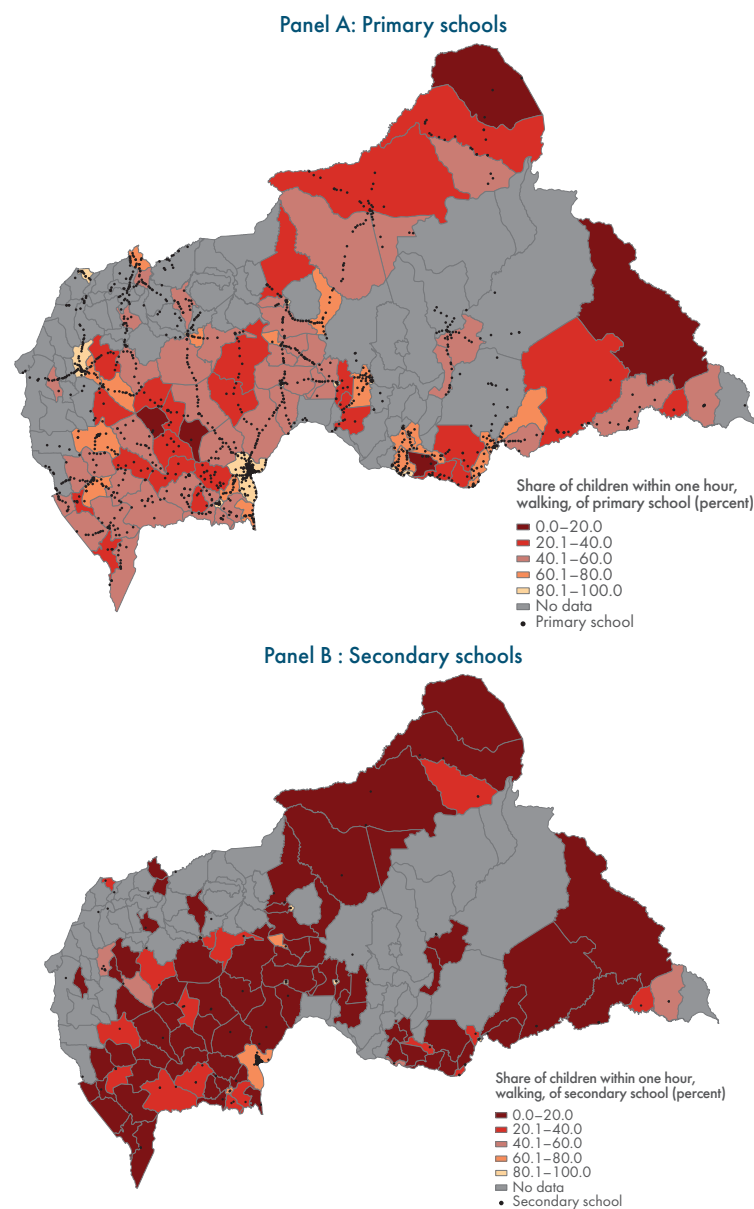
Note: Estimates for primary school cover primary-school-age children. Estimates for secondary school cover secondary-school-age children. Cartographic census data cover 72.6 percent of CAR.

Source: ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

54 The cartographic census data do not contain information on whether schools are coeducational or single sex, so it is not possible to disaggregate by gender.

Physical access to schools is also uneven across CAR. Remote and rural areas — especially in pockets in the east, south, and west of the country — appear to have worse physical access to primary schools (Figure 57). Unsurprisingly, it is easier to reach primary schools in urban centers. Access to secondary schools is limited virtually everywhere outside of Bangui. Indeed, of the 275 secondary schools recorded in the cartographic census day, 157 are located in Bangui, even though Bangui accounts for only 13.3 percent of the population according to the EHCVM sample. There also appear to be some spillovers from the urban centers in terms of school coverage, with those communes near to Bangui and other cities having fewer children lacking physical access to schools.

FIGURE 57. SHARE OF CHILDREN IN EACH COMMUNE WITHIN ONE HOUR OF THEIR NEAREST PRIMARY OR SECONDARY SCHOOL ON FOOT

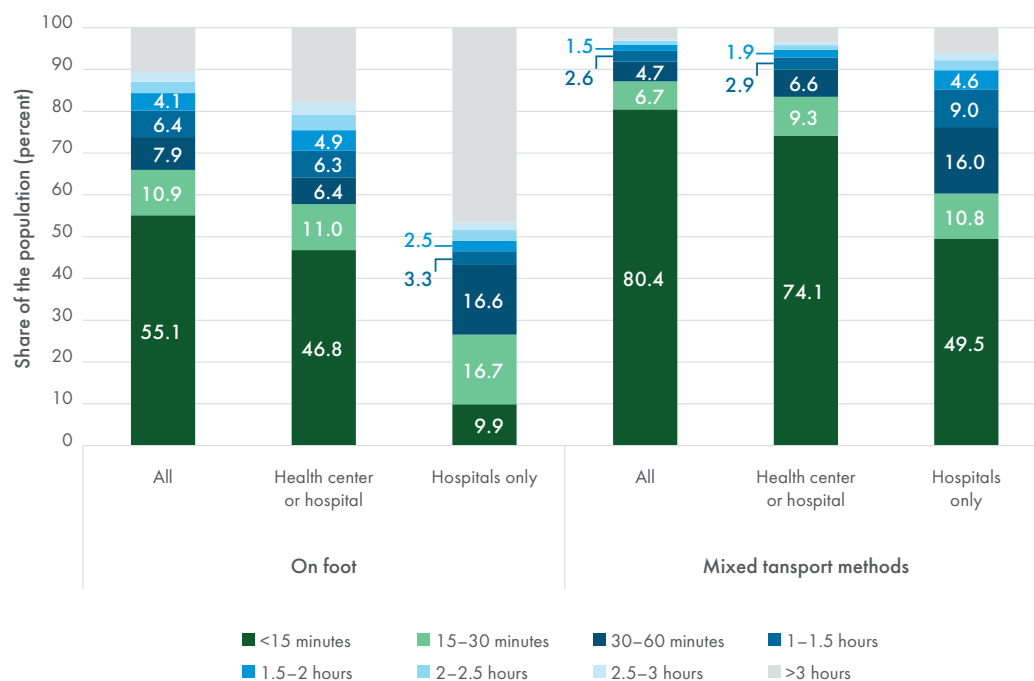


Note: Estimates for primary school cover primary-school-age children. Estimates for secondary school cover secondary-school-age children. Cartographic census data cover 72.6 percent of CAR.

Source: ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

Physical access to health facilities is also lacking for many Central Africans. The cartographic census data contain information on the locations of health posts, health centers, and hospitals. Health posts provide basic health services — including diagnosis and treatment of some illnesses, basic prenatal and postnatal care, and certain vaccinations — but more complex care requires health centers or hospitals (Ministère de la santé et la population, 2015). According to these data, about 34.1 percent of the population (of all ages) live 30 minutes or more away on foot from the nearest health facility of any kind while 26.2 percent live more than one hour away (Figure 58).⁵⁵ The one-hour walking cutoff corresponds approximately to the standards set out by the Central African health ministry, which require that health posts are within 5 kilometers for a household to be classified as covered by the health system (Ministère de la santé et la population, 2010). Reaching health facilities is more difficult if health posts are excluded: about 42.2 percent of the population live at least 30-minutes' walk from a health center or hospital and 35.8 percent live at least one-hour's walk away.⁵⁶ Reaching health centers and hospitals often requires mixed transport methods and, in turn, adequate roads — a further underlying constraint on physical access that is explored in more detail below. Therefore, as with education, there are constraints at the national level in terms of health facility access.

FIGURE 58. TIME TAKEN TO REACH HEALTH FACILITIES IN THE CENTRAL AFRICAN REPUBLIC



Note: Estimates cover population of all ages. Cartographic census data cover 72.6 percent of CAR.
Source: ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

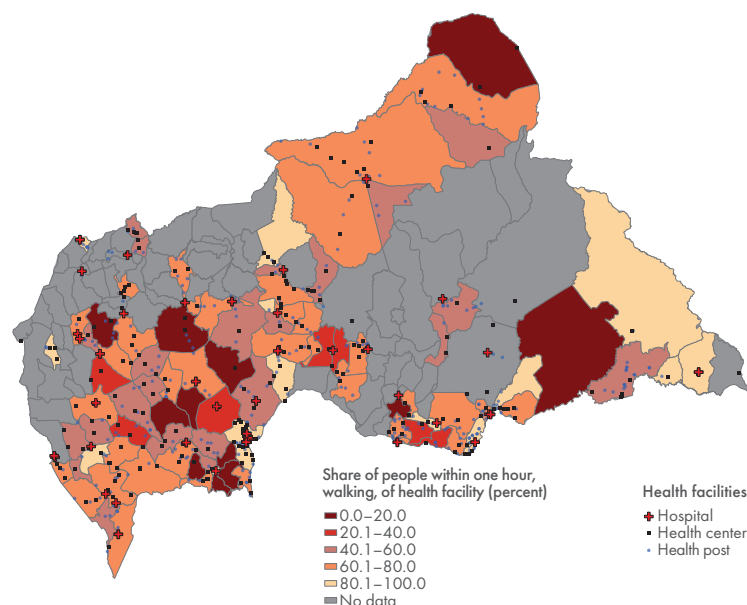
In contrast to the results for education, it is not necessarily the most remote areas where physical access to health facilities is the lowest. This can be seen by looking at the share of people that live within one hour's walk of a health facility of any kind — including health posts, health centers, and hospitals — in each commune.

⁵⁵ Direct comparisons between the access estimates for education and health facilities should be treated with some caution because the former are based on “constrained” data — where the population points are restricted to places where there are buildings of any type — while the latter are “unconstrained” — meaning the WorldPop data provides population estimates for all land grid squares.

⁵⁶ The standard set by the Central African health ministry requires that health centers be within 25 kilometers (Ministère de la santé et la population, 2010).

It emerges that there are large, sparsely populated communes in the Fertit and Haut Oubangui regions where the population is, on average, more able to reach health facilities than in communes in Plateaux region, close to Bangui (Figure 59). This can provide helpful guidance on where investments in health facilities could be focused.

FIGURE 59. SHARE OF THE POPULATION IN EACH COMMUNE WITHIN ONE HOUR OF THEIR NEAREST HEALTH FACILITY ON FOOT



Note: Estimates cover population of all ages. Cartographic census data cover 72.6 percent of CAR.
Source: ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

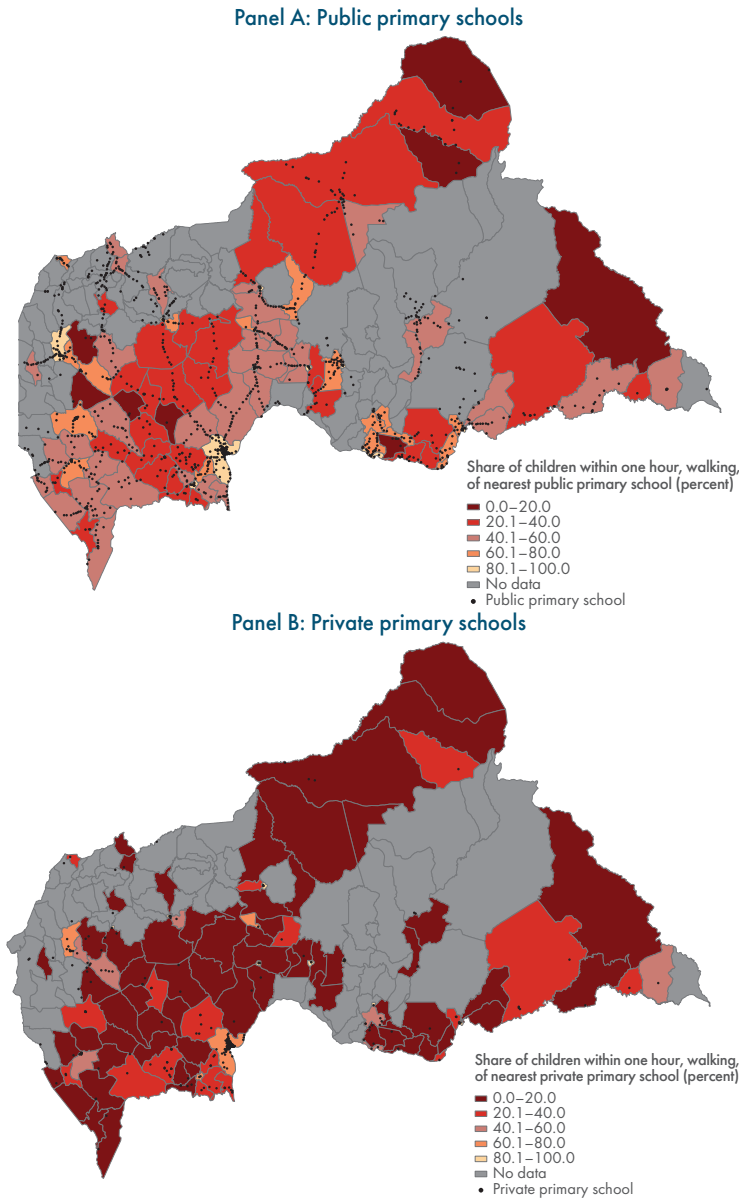
6.3. CENTRAL AFRICANS DEPEND MORE ON PUBLIC THAN PRIVATE FACILITIES

Physical access is better for public facilities than private facilities so, notwithstanding issues of financial access, investment in public facilities matters. This pattern is exemplified by looking at access to primary schools on foot. First, taking CAR as a whole, about 55.0 percent of primary-school-age children live more than one hour away from a private primary school on foot compared with 32.0 percent for public primary schools (Figure 56). This is a direct reflection of the proportion of primary schools that are private: of the 1,724 primary schools recorded in the cartographic census data, only 447 (35.0 percent) are privately run.⁵⁷ Moreover, for the vast majority outside of Bangui, upwards of 80 percent of primary-school-age children live more than one hour away from the nearest private primary school on foot (Figure 60). This highlights the importance of government-led investments in schools and health facilities to ensure all Central Africans are served.⁵⁸

⁵⁷ The situation is similar for secondary schools, of which about 371 percent are private.

⁵⁸ The location of public and private schools is not independent. For example, in remote and rural areas, primary school coverage typically depends on public schools, but there are some areas — especially in the Plateaux and Yadé regions — where public primary schools are less available and private schools fill the gap. Among private schools, it tends to be private religious schools that are concentrated more in rural areas.

FIGURE 60. SHARE OF CHILDREN IN EACH COMMUNE WITHIN ONE HOUR OF THEIR NEAREST PUBLIC OR PRIVATE PRIMARY SCHOOL ON FOOT

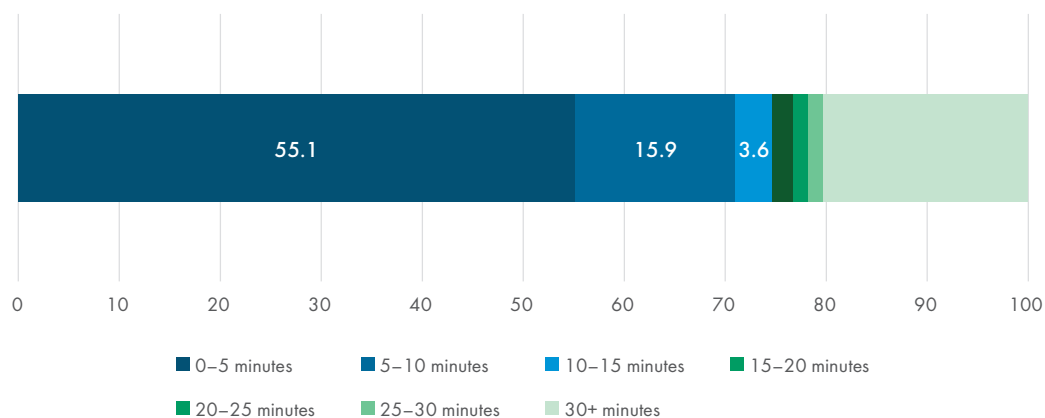


Note: Estimates cover primary-school-age children. Cartographic census data cover 72.6 percent of CAR.
Source: ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

6.4. WHILE MANY CENTRAL AFRICANS CAN REACH WATER POINTS, BOTH THE ELECTRICITY SUPPLY AND THE ROAD NETWORK MAY BE LACKING

The majority of Central Africans live within a 15-minute walk of an improved water point, so physical access alone does not appear to be the main constraint for water-related outcomes. About 25.4 percent of Central Africans live more than 15-minutes' walk away from an improved water point and about 20.3 percent live more than 30-minutes' walk away (Figure 61).⁵⁹ Therefore, most Central Africans can physically reach improved water sources. This echoes the finding from the EHCVM data that using improved drinking water at home is far more prevalent than using improved sanitation and access to electricity, as shown in Chapter 4. Yet even if using improved water is more widespread than using improved sanitation or access to electricity, 40.1 percent of Central Africans still live without improved drinking water. It may therefore be that affordability, private ownership of water points, or security concerns threaten households' drinking water outcomes, even if their members could technically walk to a nearby improved water point.

FIGURE 61. TIME TAKEN TO WALK TO IMPROVED WATER POINTS IN THE CENTRAL AFRICAN REPUBLIC



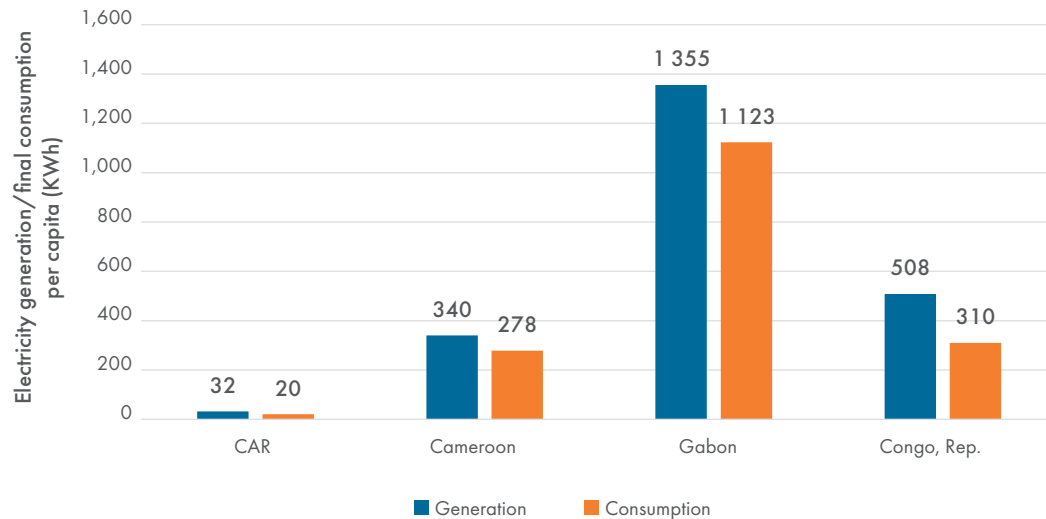
Note: Estimates cover population of all ages. Cartographic census data cover 72.6 percent of CAR.
Source: ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

While geospatial data cannot provide direct information on access to electricity, cross-country evidence highlights the crisis of energy production – and hence consumption – that CAR faces. In Chapter 4, electricity was revealed to be the weakest element of basic infrastructure, with 87.7 percent of the population lacking access to electricity. It was also shown to have an especially strong correlation with poverty. While the cartographic census cannot provide direct information on electricity access, cross-country data suggest that both generation and final consumption of electricity are significantly lower in CAR than in other CEMAC countries.⁶⁰ Indeed, per capita electricity generation and final consumption are around 10 times higher in Cameroon than in CAR, and the gap is even larger for Gabon and the Republic of Congo (Figure 62). These low levels of electricity generation and distribution mirror the widespread electricity deprivations observed in the EHCVM data and severely hamper poverty reduction.

⁵⁹ The standard for “improved” water sources follows the same approach used in Chapter 4.

⁶⁰ The cartographic census data provides information on the locations of electricity substations, but this does not appear to be a tenable proxy for physical access to electricity.

FIGURE 62. ELECTRICITY GENERATION AND FINAL CONSUMPTION IN THE CENTRAL AFRICAN REPUBLIC AND REGIONAL COMPARATOR COUNTRIES



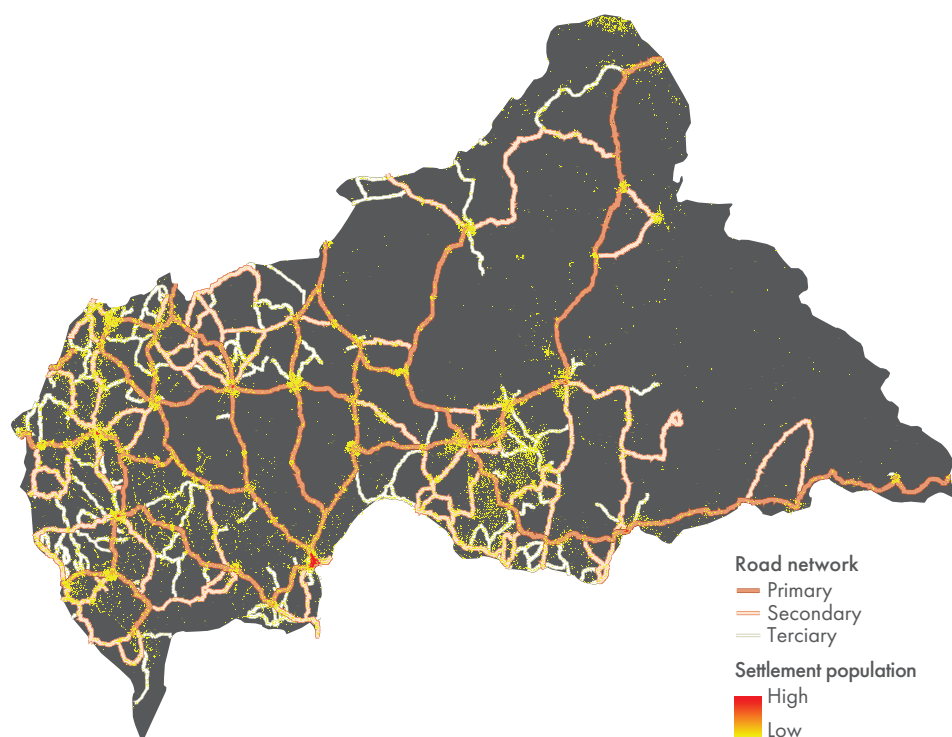
Source: International Renewable Energy Agency, African Energy Commission, and World Bank estimates.

The road network in CAR is also lacking, which affects access to services, basic infrastructure, and markets.

Even when allowing for mixed transport methods, many Central Africans would require prohibitively long travel times to reach primary and secondary schools (Figure 56). Reaching certain types of health facilities — especially hospitals — hinges entirely on being able to drive there. Many Central Africans also struggle to reach urban areas in general: even allowing for mixed transport modes, 62.4 percent of the population live more than one hour away from a high-density urban center and 13.1 percent live more than one hour away from either a high-density or intermediate urban center.⁶¹ Similarly, Central African farmers suggest that reaching markets is a constraint on their sale of agricultural products in the EHCVM data (see Chapter 5). Direct evidence on the underlying road network in CAR demonstrates that road coverage and quality might be a serious constraint. First, many population clusters are not located near any primary, secondary, or tertiary roads at all, so these people would need to find ways to reach the road network in the first place (Figure 63).⁶² Second, road quality constrains road travel in CAR: just 2.5 percent of the country's roads are paved (OCHA, 2021). Therefore, roads — like electricity — represent a major deficiency in the bedrock of infrastructure that CAR would need for poverty reduction.

61 High-density urban centers are settlements with at least 50,000 people and a population density of at least 1,500 people per square kilometer. Intermediate urban centers are settlements with at least 5,000 people and a population density of at least 300 people per square kilometer.

62 Notwithstanding issues of road quality, about 94 percent of the population live more than a one hour's walk away from a primary, secondary, or tertiary road of any kind, according to the same mobility model used to assess access to schools, health facilities, and water points.

FIGURE 63. POPULATION AND ROAD NETWORK IN THE CENTRAL AFRICAN REPUBLIC

Note: Only primary, secondary, and tertiary roads included, following OpenStreetMap definitions. Primary roads are not necessarily paved. Only unclassified, service, and residential roads are excluded.

Source: OpenStreetMap (for road network), WorldPop matched to GRID3 settlement extents (for population), and World Bank estimates.

6.5. LACK OF PHYSICAL ACCESS TO SERVICES IS STRONGLY RELATED TO HUMAN CAPITAL, A KEY BUILDING BLOCK OF POVERTY REDUCTION

Physical access to primary and secondary schools is associated with enrolment, even after controlling for other household and location characteristics. This can be examined by using the geocoordinates in the EHCVM data to link households — along with their human capital and welfare outcomes — to the cartographic census data, estimating travel times using the mobility model described above. Applying this approach, it emerges that children aged 6-11 in households that are 1-2 hours' walk away from primary schools are about 18.8 percentage points less likely to attend primary school than those living less than one hour away, even after accounting for key household characteristics — including household size, IDP status, and household head education and occupation — as well as location characteristics — namely the region and urban-rural setting in which the household lived (Table 10).⁶³ Similarly, children aged 11-16 in households that are 1-2 hours' walk away from secondary schools are 6.9 percentage points less likely to attend secondary school than those living less than one hour away (Table 11). These results do not change substantially even after controlling for the log of real per capita expenditure, so they are not purely a product of poor people living in more remote

63 This regression has a binary variable taking 1 if the child is enrolled in primary school and 0 otherwise on the left-hand-side. It is therefore a linear probability model so the coefficients can be read directly as marginal effects. The standard errors are clustered at the enumeration area level to minimize the impact of heteroskedasticity. The analogous regression was run for secondary schools. In both sets of regressions, the excluded category is households less than 30 minutes' walk away.

or less well served areas. The results do not entirely close the enrolment deficit shown in Chapter 4. This in turn means that there are other factors that constrain school attendance, potentially including perceived low quality, affordability, and low household incomes raising the incentives for parents to take children out of school to contribute to income-generating activities, especially when shocks hit (see Chapter 3).⁶⁴ Nevertheless, physical access also appears a key driver of enrolment, so investing in schools and the infrastructure required to reach them offers one way for policymakers to boost human capital outcomes.

TABLE 10. REGRESSION OF PRIMARY SCHOOL ENROLMENT ON TIME TAKEN TO REACH THE NEAREST PRIMARY SCHOOL ON FOOT

	No controls	Adding location	Adding household controls	Adding expenditure
30 minutes – 1 hour	-0.0804** (0.0403)	-0.0163 (0.0418)	-0.0143 (0.0406)	-0.0049 (0.0411)
1–2 hours	-0.2547*** (0.0373)	-0.1939*** (0.0415)	-0.1881*** (0.0421)	-0.1745*** (0.0423)
2–3 hours	-0.2341*** (0.0648)	-0.1454** (0.0656)	-0.1393** (0.0628)	-0.1326** (0.0655)
>3 hours	-0.2673*** (0.0479)	-0.1936*** (0.0453)	-0.1854*** (0.0468)	-0.1695*** (0.0467)
N	5,387	5,387	5,387	5,387
R-squared	0.0441	0.0763	0.0886	0.0957

Note: Sample restricted to children aged 6–11 years. Dependent variable is a binary variable taking 1 if the child is enrolled in primary school and 0 otherwise. Excluded category is living less than 30 minutes from the nearest primary school. Main regressors are dummy variables representing each travel-time category. Standard errors clustered at the enumeration area level are in parentheses.

* $p < 0,10$, ** $p < 0,05$, *** $p < 0,01$.

Source: 2021 EHCVM, ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

⁶⁴ It also appears that households delay enrolling their children in school. Around 3 in 10 children and young people enrolled in primary school are aged 12 years or more in the EHCVM data.

TABLE 11. REGRESSION OF SECONDARY SCHOOL ENROLMENT ON TIME TAKEN TO REACH THE NEAREST SECONDARY SCHOOL ON FOOT

	No controls	Adding location	Adding household controls	Adding expenditure
30 minutes – 1 hour	-0.0819*** (0.0286)	-0.0409 (0.0287)	-0.0292 (0.0293)	-0.0245 (0.0283)
1–2 hours	-0.1352*** (0.0331)	-0.0910** (0.0361)	-0.0687** (0.0348)	-0.0647** (0.0327)
2–3 hours	-0.1588*** (0.0170)	-0.1061*** (0.0253)	-0.0833*** (0.0232)	-0.0785*** (0.0226)
>3 hours	-0.1669*** (0.0138)	-0.1099*** (0.0218)	-0.0881*** (0.0194)	-0.0816*** (0.0187)
N	4,386	4,386	4,386	4,386
R-squared	0.0689	0.0831	0.1182	0.1240

Note: Sample restricted to children aged 11–16 years. Dependent variable is a binary variable taking 1 if the child is enrolled in secondary school and 0 otherwise. Excluded category is living less than 30 minutes from the nearest secondary school. Main regressors are dummy variables representing each travel-time category. Standard errors clustered at the enumeration area level are in parentheses.

* p<0,10, ** p<0,05, *** p<0,01.

Source: 2021 EHCVM, ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

6.6. LIMITED PHYSICAL ACCESS TO SERVICES IS ASSOCIATED WITH HIGHER POVERTY

Going past the immediate effects on human capital, physical access is also related to monetary poverty.

Linking the EHCVM data and the cartographic census data, and then regressing monetary poverty on travel times with and without controls – much like the poverty profile estimated in Chapter 2 – reveals these patterns. The chances of living in monetary poverty are more than 6 percentage points higher for Central Africans living at least 30 minutes' walk away from a primary school, even in the presence of household and location controls (Table 12). The fact that this finding persists in the presence of location controls means that the correlation between poverty and physical access is not purely a product of differences between urban and rural areas and between CAR's regions. Similar patterns emerge for access to health facilities (Table 13). Therefore, echoing the overlap between monetary poverty and education deprivation shown in Chapter 4, the relationship between service access on human capital appears to feed through to monetary poverty too.

TABLE 12. REGRESSION OF MONETARY POVERTY ON TIME TAKEN TO REACH THE NEAREST PRIMARY SCHOOL ON FOOT

	No controls	Location controls	Full controls
30 minutes – 1 hour	0.1406*** (0.0353)	0.0797** (0.0348)	0.0661** (0.0314)
1–2 hours	0.1432*** (0.0371)	0.0756** (0.0377)	0.0644* (0.0370)
2–3 hours	0.1878*** (0.0413)	0.1206*** (0.0341)	0.1073*** (0.0378)
>3 hours	0.1311*** (0.0388)	0.0888** (0.0372)	0.0785** (0.0375)
N	6,249	6,249	6,249
R-squared	0.0190	0.0772	0.1626

Note: Dependent variable is a binary variable taking 1 if the household is below the overall national poverty line and 0 otherwise. Excluded category is living less than 30 minutes from the nearest primary school. Main regressors are dummy variables representing each travel-time category. Standard errors clustered at the enumeration area level are in parentheses.

* p<0,10, ** p<0,05, *** p<0,01.

Source: 2021 EHCVM, ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

TABLE 13. REGRESSION OF MONETARY POVERTY ON TIME TAKEN TO REACH THE NEAREST HEALTH FACILITY ON FOOT

	No controls	Location controls	Full controls
30 minutes – 1 hour	0.1377*** (0.0308)	0.0691** (0.0308)	0.0613** (0.0310)
1–2 hours	0.1192*** (0.0328)	0.0537 (0.0348)	0.0477 (0.0335)
2–3 hours	0.1315*** (0.0365)	0.0898** (0.0398)	0.0639* (0.0374)
>3 hours	0.1623*** (0.0295)	0.1130*** (0.0300)	0.0993*** (0.0295)
N	6,249	6,249	6,249
R-squared	0.0244	0.0788	0.1637

Note: Dependent variable is a binary variable taking 1 if the household is below the overall national poverty line and 0 otherwise. Excluded category is living less than 30 minutes from the nearest health facility, of any level. Main regressors are dummy variables representing each travel-time category. Standard errors clustered at the enumeration area level are in parentheses.

* p<0,10, ** p<0,05, *** p<0,01.

Source: 2021 EHCVM, ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

While the relationship between physical access and poverty appears to be stronger in urban than rural areas, this is mainly because limits on physical access and poverty are so ubiquitous for virtually all rural dwellers. This can be shown by regressing poverty status on a simplified version of the travel-time categories, which just shows whether facilities are more than one hour's walk away from the household and using only the household-level controls, while splitting the sample into rural and urban areas. Even after controlling for

differences in household-level characteristics, Central Africans in urban areas who are more than one hour from a primary school on foot are 13.1 percentage points more likely to be poor while for Central Africans in rural areas the analogous difference is 5.0 percentage points (Table 14).⁶⁵ However, this does not mean that investments should be targeted mainly to urban areas. In fact, reviewing the maps shown above and the poverty map in Chapter 2, it appears that the poverty-physical access correlation becomes weaker in rural areas because access is so limited and poverty is so prevalent there. In part, these results simply reflect the finding that deprivations, in access, non-monetary welfare outcomes, and poverty, pile up the most for rural Central Africans. They also reflect inequality between CAR's urban areas, driven by Bangui being so different from other towns and cities.

TABLE 14. REGRESSION OF MONETARY POVERTY ON TIME TAKEN TO REACH THE NEAREST PRIMARY SCHOOL ON FOOT BY URBAN-RURAL

	No controls		With controls	
	Rural	Urban	Rural	Urban
>1 hour walk to primary school	0.0620** (0.0297)	0.2607*** (0.0531)	0.0498* (0.0284)	0.1305*** (0.0455)
N	3,578	2,671	3,578	2,671
R-squared	0.0041	0.0146	0.1096	0.1554

Note: Dependent variable is a binary variable taking 1 if the household is below the overall national poverty line and 0 otherwise. Main regressor is a dummy variable taking 1 if it takes more than one hour on foot to reach the nearest primary school and 0 otherwise. Standard errors clustered at the enumeration area level are in parentheses.

* p<0,10, ** p<0,05, *** p<0,01.

Source: 2021 EHCVM, ICASEES cartographic census, WorldPop, UNHCR, and World Bank estimates.

6.7. HELPING POLICYMAKERS BUILD PATHWAYS TO POVERTY REDUCTION

This chapter provides policymakers with information on how to invest in services and basic infrastructure, keystones of poverty reduction. The chapter demonstrates that lack of physical access to schools, especially secondary schools, clearly constrains human capital development. Moreover, lack of access to schools appears to be directly associated with monetary poverty. This issue is particularly severe in remote and rural areas. Additionally, while physical access to water may not be the main constraint on WASH outcomes, electricity access and roads could serve as brake on development. Chapter 7 synthesizes these results and combines them the findings from the previous chapters to outline the key policy priorities that could help kickstart poverty reduction in CAR.

⁶⁵ The difference between rural and urban areas can be tested formally using the seemingly unrelated estimation (<suest>) command in Stata. The p-value on the hypothesis test that the coefficient reported is the same and urban and rural areas is 0.001 in the model without controls and 0.122 in the model with household-level controls.

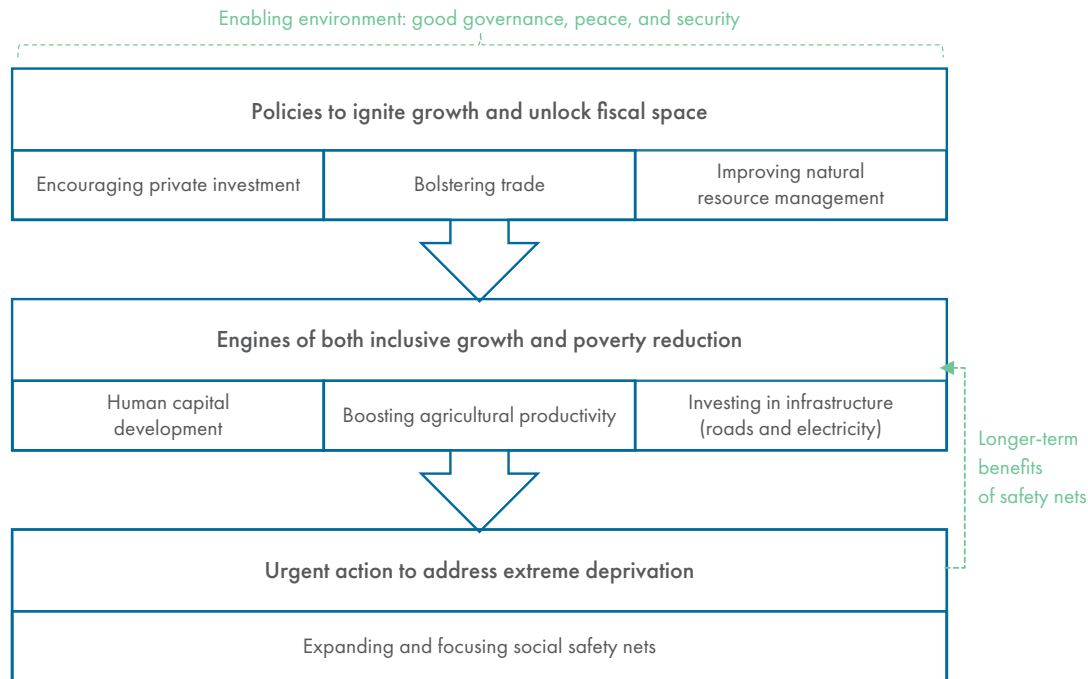
7. POLICIES TO ENERGIZE POVERTY REDUCTION IN THE CENTRAL AFRICAN REPUBLIC

CHAPTER 7 KEY MESSAGES

- ▶ The scale of the Central African Republic's poverty-reduction challenge demands urgent policy action
- ▶ Promoting peace, security, and good governance remains critical
- ▶ Poverty reduction hinges on invigorating growth and unlocking fiscal space; reforms to bolster trade, encourage private investment, and improve natural resource management could help
- ▶ Three types of policies can simultaneously ignite inclusive growth and reduce poverty directly: (1) developing human capital; (2) boosting agricultural productivity; and (3) investing in the bedrock of basic infrastructure, especially through electrification and road upgrading
- ▶ Yet the 3.3 million Central Africans who are food poor cannot wait for medium-term policies to work; social safety nets and other support programs should be expanded, directed to the most deprived, and "bundled up" with other interventions to boost human capital and livelihoods
- ▶ Fresh data collection efforts, with continued sensitivity to conflict and displacement and to other vulnerable groups, can help guide the specific design, implementation, and monitoring of policies to kickstart the Central African Republic's road to poverty reduction

This final chapter of the poverty assessment draws on the analysis presented in the previous chapters to outline the policies that could kickstart poverty reduction in CAR. The results of this poverty assessment come at a critical moment for the Central African government, as the RCPCA ends in 2023 — now is the time to devise new development strategies. While the poverty-reduction challenge facing CAR is daunting, the right mix of policies could help the country harness its potential and lift people out of poverty. First, this chapter reinforces the message that promoting, peace, security, and good governance remains critical for CAR. Second, the chapter emphasizes the importance of igniting growth and unlocking fiscal space for enabling poverty-reducing policies — without this, CAR simply cannot afford the investments required to lift people above the poverty line. Third, the chapter considers the three crucial engines that simultaneously drive inclusive growth and poverty reduction in the medium run, namely developing human capital, boosting agricultural productivity, and upgrading infrastructure. Yet addressing food poverty in CAR cannot wait for medium-run policies to take effect. Therefore, fourth, the chapter underlines the importance of expanding social protection and ensuring it focuses on those facing more extreme forms of deprivation, while also “bundling up” support with initiatives to enhance human capital and livelihoods (see Figure 64 for a schematic summary of these policy recommendations). The chapter also underlines the need to build on the 2021 EHCVM, by continuing to collect the data to guide the design, implementation, monitoring, and evaluation of poverty-reducing policies.

FIGURE 64. POLICIES TO ENERGIZE GROWTH AND POVERTY REDUCTION IN THE CENTRAL AFRICAN REPUBLIC



Source: World Bank.

7.1. SINCE POVERTY IS SO WIDESPREAD AND DEEP, POLICY ACTION IS NEEDED NOW

The breadth and depth of poverty necessitate urgent action to protect Central Africans from extreme forms of deprivation. Some 68.8 percent of the population live below the national poverty line, and 54.9 percent live below the food poverty line, meaning that they do not have enough to eat, even if they devote all of their consumption to food. If variation in consumption is taken into account, 88.6 percent of the population are vulnerable to poverty and 77.2 percent are vulnerable to food poverty. Given the prevalence of shocks – and especially conflict-related shocks – in CAR, exposure to severe deprivation is extremely widespread. International comparisons confirm the seriousness of the situation. Measuring the poverty rate at the 2.15 USD 2017 PPP international poverty line, CAR is among the 10 poorest countries in the world. Simple projections suggest that the current mix of policies is unlikely to reduce poverty significantly in the next five years. Therefore, CAR’s policy approach needs to change and it needs to change now.

7.2. PROMOTING PEACE, SECURITY, AND GOOD GOVERNANCE REMAINS CRITICAL

Promoting peace and security is essential for efforts to reduce poverty. The causal links between conflict, displacement, livelihoods, and poverty are complex. Yet this report clearly signals that conflict has hampered inclusive growth and poverty reduction in CAR, certainly for displaced people, but also for the population at

large. Conflict directly results in widespread fatalities and gender-based violence in CAR (UNHCR, 2022). It disrupts human capital development and livelihoods, damages assets and infrastructure, and makes poverty-reducing policies significantly more difficult to implement. Global evidence suggests that poor people are increasingly becoming concentrated in fragile and conflict-affected areas (Corral, Irwin, Krishnan, Mahler, & Vishwanath, 2020). Strengthening peace and security therefore remains a critical priority for poverty reduction in CAR.

Helping CAR overcome its fragility trap requires addressing the root causes, especially by improving governance and management of natural resources; policies aimed at reducing poverty and inequality could help too. Among the fundamental drivers of conflict in CAR is the struggle between political elites to pursue power and capture the country's vast natural resource wealth (World Bank, 2022). Global evidence demonstrates that many other countries endowed with natural resources often suffer from increased risks of conflict and fragility (Barma, Kaiser, Minh Le, & Viñuela, 2011). Enhancing good governance to manage natural resource wealth better is therefore essential. Nevertheless — notwithstanding the complex causal links between poverty, livelihoods, and conflict — better livelihood opportunities, investment in assets, and lower overall poverty have been shown to increase the opportunity cost of participating in conflict, making it less likely that armed groups will form, grow, and prevail (Collier & Hoeffler, 2004). Additionally, inequality could fuel grievances and create the conditions for conflict, especially when it aligns with geographical, ethnic, and religious differences, so policies that improve equity could help (Mokleiv Nygård, 2018). As such, the policies that this poverty assessment recommends for boosting inclusive growth and poverty reduction could also help to build the social contract in CAR, enabling it to break out of its fragility trap.

7.3. POVERTY REDUCTION HINGES ON IGNITING GROWTH AND CREATING FISCAL SPACE

Growth is a necessary condition for sustained poverty reduction. While growth is not enough on its own, global evidence suggests that poverty reduction depends on growth, especially in the early stages of the development process (Ravallion & Chen, 1997; Son & Kakwani, 2004). CAR's dismal growth record — which leaves it as one of poorest countries in the world measured by GDP per capita — has not created the productive livelihood opportunities needed to lift people above the poverty line. Moreover, poverty-reducing policies require government spending: growth is also needed to increase the government's fiscal space so that such policies can be financed. This section briefly highlights economic reforms that could accelerate growth and increase fiscal space, while the next section considers policies that simultaneously boost inclusive growth and poverty reduction.⁶⁶

Three streams of macroeconomic reforms could accelerate growth; first, it will be essential to improve the environment for private investment. Alongside promoting peace and security, this includes further enabling market-based competition, facilitating business start-up, and making it easier to register property. Designing the specifics of policies to attract private sector investment will rely on strengthening the dialogue with private sector representatives and organizations.

⁶⁶ A full analysis of the reforms needed to ignite growth goes beyond the scope of this poverty assessment, and is covered in other reports (see, for example, World Bank (2022)).

Second, CAR can better harness international trade. This could help to diversify the economy, promote access to new technologies, increase competition, and expand markets for goods produced in CAR. Trade policy also determines which goods and inputs can enter the country, including fuel, fertilizer, and food products. As such, trade can both improve agricultural productivity and ensure agricultural products reach larger markets to make farms more profitable. Trade policy is especially important for CAR as a landlocked country, many of whose neighbors themselves face challenges of conflict, displacement, and low growth. Investing in infrastructure, streamlining customs procedures, and coordination through both multilateral structures — such as CEMAC or the African Continental Free Trade Area (AfCFTA) — and bilateral agreements could help. This could also allow CAR — being, as it is, positioned between so many potential trading partners — to benefit from reexporting goods and through-trade.

Third, CAR should strengthen the management of its natural resource wealth, so all Central Africans can benefit. In part, this could involve processing primary products, adding value and creating jobs, within CAR itself — this would boost trade and diversify CAR's exports. For example, supporting implementation of the Forestry Code, which requires on-site processing of at least 70 percent of logs in the timber sector could be one such strategy (AFWC, 2016; World Bank, 2022). More fundamentally, it will be important to sustain efforts to improve the institutional and regulatory framework for extractive industries, including reforms to increase data availability and transparency in the mining sector. Such initiatives are not only important for deterring conflict, but they could also increase CAR's exports and provide the government with revenue for investing in pro-poor policies.

Growth would help expand the government's budget for poverty-reducing policies, but additional fiscal reforms could further mobilize domestic revenues. Even though some international donors have withdrawn from CAR, a large share of government revenues still come from ODA. As such, creating tools to increase tax recovery, reviewing tax exemptions, building capacity for customs and tax administration, and broadening the tax base to enhance *domestic* revenue mobilization are essential for enabling pro-poor public spending (World Bank, 2021). In parallel, it will be vital to prioritize public spending for policies that have the greatest potential for supporting inclusive growth and reaching those Central Africans facing more extreme forms of deprivation. It is these policies to which this chapter now turns.

7.4. HUMAN CAPITAL, AGRICULTURAL PRODUCTIVITY, AND INFRASTRUCTURE — ENGINES OF INCLUSIVE GROWTH AND POVERTY REDUCTION

Three policies provide the dual benefit of driving inclusive growth in a sustained way while also directly lifting people out of poverty: (1) developing human capital, (2) boosting agricultural productivity, and (3) investing in infrastructure. These policies mutually reinforce one another. For example, building roads can help farmers more easily bring their produce to market, increasing their profitability. Similarly, education policies that build the right skills can help make livelihoods more productive and, in the case of business owners, support further job creation. These policies place CAR's growth prospects on more promising footing, as existing macroeconomic analysis suggests (see, for example, World Bank (2022)). Yet they can also have more immediate effects, addressing the urgent need to lift people above the poverty line or out of more extreme forms of deprivation before durable long-term growth materializes.

7.4.1. BUILDING HUMAN CAPITAL TO UNLEASH THE POTENTIAL OF YOUNG CENTRAL AFRICANS

CAR's young population presents the country with a huge opportunity; investing in young people and especially young children can yield very high returns. More than three-quarters of CAR's population are aged less than 30 years, so millions of Central Africans are — or will soon be — of working age. These young people will need investment in their productive potential and corresponding livelihood opportunities if CAR is to harness its demographic dividend. Moreover, global evidence demonstrates the high return of supporting early childhood development, for example, through pre-primary education and simple health interventions such as deworming and providing basic nutrients (Bhula, Mahoney, & Murphy, 2020; Holla, Bendini, Dinarte, & Trako, 2021). Supporting the early part of people's lives can be transformative, while trying to correct the course as people get older can be much more difficult (World Bank, 2022).

Conversely, the costs of failing young Central Africans could be high. Evidence from across Sub-Saharan Africa suggests that young people without productive livelihoods can be drawn into armed groups, further fueling conflict — the prospect of some form of employment is cited as the main reason for joining armed groups (Cramer, 2010; UNDP, 2023). This risk is particularly large when trust in government is low, provision of services is weak, and the social contract is fractured. Low investment in human capital and limited livelihoods can have long-term consequences for inclusive growth and for households' welfare, trapping future generations of Central Africans in fragility and in poverty. CAR needs to make extra effort to safeguard and enhance investment in human capital, as global evidence suggests that doing so may be more difficult for countries endowed with natural resource wealth (Cust & Mandon, 2021).

Education is clearly associated with poverty reduction, but many Central African children simply cannot reach school, especially at the secondary level. When the household head has attained secondary or higher education, households' chances of being in poverty are significantly lower. Additionally, there is a large overlap between the education dimension and the monetary dimension of poverty in the World Bank's MPM. However, enrolment rates — especially at the secondary level — are relatively low, showing only sluggish improvement and divergence between Bangui and the rest of the country over time. As the geospatial data presented in Chapter 6 show, this is at least partly because physical access to schools is limited: outside of Bangui, reaching secondary schools is particularly difficult. Linking this to household- and individual-level data demonstrates the clear association between physical access and enrolment. Therefore, either more schools are needed in certain parts of CAR or the infrastructure to get to existing schools must be improved.

Getting Central African children into school is not enough on its own; they need to learn when they get there. Improving physical access will help but it will not bring every child to school. Households need to perceive that there are benefits associated with sending children to school too; neither primary nor secondary school are free.⁶⁷ This relies on households believing that children will learn when they attend school. Currently, CAR's learning outcomes are worse than enrolment outcomes: while Central African children are expected to spend 4.6 years in school, they are only expected to spend 2.7 *learning-adjusted* years in school (World Bank, 2020). Therefore, beyond just improving physical access to schools, investment in other learning inputs will be crucial, including teachers, classroom facilities, and textbooks (World Bank, Forthcoming). Moreover, learning must be directed

67 School fees include insurance costs, administrative costs (report and identification cards), exams fees, and community teachers' salaries. These fees range between 1,500 XAF and 5,000 XAF (about 4 USD 2017 PPP and 15 USD 2017 PPP) per student per year, depending on the grade attended.

towards CAR's most common livelihoods. Yet at present, technical agricultural training is almost nonexistent in CAR, despite the fact that agriculture is — and will for many years continue to be — the country's main employer. Improving education hinges on boosting learning and directing education to match livelihood opportunities, as well as improving physical access to schools.

Human capital development goes beyond education and learning; enhancing health and WASH outcomes will also be key, especially if combined with investments in education. CAR's health outcomes are among the weakest in the CEMAC region, compounding the effects of low educational enrolment and attainment on people's productive potential. For some parts of the country, poor health outcomes could be associated with lack of access to health facilities although, unlike for schools, this is not necessarily in remote and rural areas. This underlines the importance of community health policies. Access to improved water and sanitation has also declined in CAR. Reversing this trend will be crucial for human capital development, since diarrheal disease — almost 90 percent of which can be attributed to suboptimal WASH — is the largest cause of morbidity and mortality for children aged less than five (Ramesh, Blanchet, Ensink, & Roberts, 2015). Multiple constraints on human capital could be addressed at the same time by combining interventions. For example, direct support for education and health — through targeted investments in schools and health facilities or by providing nutrients, medication, or training to other household members - could be “bundled up” with cash or other in-kind transfers disbursed through social safety nets. A multisectoral approach will be needed for building CAR's human capital.

7.4.2. MAKING AGRICULTURE WORK FOR POVERTY REDUCTION

The returns to investing in human capital depend on Central Africans having the right livelihood opportunities. Building people's productive potential will have limited effect on inclusive growth and poverty reduction if the livelihoods commensurate with their potential are not available. In CAR, the question of livelihoods is not whether people work — those who are working and who are not working are about equally likely to be in poverty. Rather it is a question of finding the right *types of* activities for people to lift them out of poverty.

Strengthening livelihoods requires overcoming the growing challenge of climate-related shocks and raising agricultural productivity. Agriculture is by far CAR's largest employer, but it appears to have significantly lower productivity than other sectors. Growth in agricultural TFP has also stagnated in CAR since the outbreak of political-military conflict in 2012, while cross-country data suggest that Cameroon and the Republic of Congo respectively use 70 and 50 times as much fertilizer for farming, per hectare of arable land (USDA, 2022; World Bank, 2022). Eventually, it may be possible for workers to switch from agriculture to services or industry to increase their earnings. Yet structural transformation of this kind on a large scale is likely to be years or even decades away for CAR. In the meantime, enhancing agricultural productivity will be crucial — this is also a prerequisite for structural transformation. In other settings, agriculture has also been shown to absorb demobilized combatants, so it could provide another mechanism for CAR to escape its fragility trap (Birner, Cohen, & Ilukor, 2011).

Boosting agricultural productivity relies on improving access to agricultural inputs and helping farmers reach markets, including those outside CAR. In particular, this means ensuring farms have access to the seeds, tools, and fertilizer that they need, especially as this crowds in the use of other inputs, including labor from outside the household. By contrast, in line CAR's low population density, access to land does not appear to be as much of a binding constraint, at least for those people living outside of IDP camps: land is

traditionally assigned according to “*droit à la hache*” (law of the axe), whereby it belongs to whomever clears and cultivates it (FAO, 2005). Expanding access to microfinance or other forms of credit could help farmers buy the inputs they need while facilitating trade would ensure such inputs can enter CAR in the first place. Allowing farm produce to reach markets is also essential for maximizing agricultural earnings, especially as most Central African farmers appear to sell at least some of what they produce. This, in turn, will rest on upgrading infrastructure so that markets are better integrated and ensuring macroeconomic policy supports international trade of agricultural products.

7.4.3. UPGRADING THE BEDROCK OF INFRASTRUCTURE

Expanding electrification would support several channels of poverty reduction. Electricity is by far the weakest element of basic infrastructure: just 12.3 percent of the population have access to electricity, according to the 2021 EHCVM data. This resonates with international comparisons between CAR and neighboring countries in terms of overall electricity generation and final consumption. The effects of low electricity access are multiplied by electricity having the strongest association with monetary poverty; this resonates with evidence from other countries showing how electrification expands livelihood opportunities (Ratledge, Cadamuro, de la Cuesta, Stigler, & Burke, 2022). Investing in electricity could also have spillover effects on other poverty-reducing policies. For example, electrification could improve learning in schools and the quality of care provided in health facilities. Moreover, electrification could increase mobile cellular penetration, improving the flow of information between markets and potentially allowing the government to increase its administrative reach, making it easier to expand other poverty-reducing policies, including social safety nets (Jensen, 2007). This is especially important for remote and rural areas, given the sparse distribution of CAR’s population.

Investing in CAR’s dilapidated road network would further eliminate curbs on poverty reduction and could reduce cross-region inequality. Just 2.5 percent of CAR’s roads are paved, and many communities are not able to reach any roads, regardless of their quality. This stops people reaching education and health facilities, thwarts farmers’ market access, and makes it harder for the government and other actors to reach communities to provide social safety nets and other support programs (Vijayakumar, 2019). Relatedly, fixing the road network could help stabilize prices, given the dispersion for prices of key staple crops observed between different regions, reducing the pressure of price shocks on purchasing power. In part, this reflects the broader need to integrate different regions of CAR better. Across virtually all measures considered in this poverty assessment, Bangui is significantly better off than the rest of the country. Infrastructural investment could help address this spatial inequality and bring down poverty and food poverty outside of the nation’s capital. This also raises policy questions around decentralization of government functions.

7.4.4. POLICIES SHOULD BE SENSITIVE TO THE NEEDS OF DISADVANTAGED GROUPS, INCLUDING DISPLACED PEOPLE AND WOMEN AND GIRLS

Policies to bolster both human capital development and livelihoods should pay special attention to displaced populations. Displaced people living in camps appear to be significantly more deprived in terms of educational enrolment and attainment. Displacement directly interrupts schooling. Therefore, special measures are needed to ensure displaced children can catch up, to integrate them into their new linguistic and cultural environment, and to manage the effects of the stress and trauma of being displaced on their learning (IDMC, 2020). At the same time, however, they have better-than-average access to improved water and sanitation, most likely because such

services are provided by the humanitarian agencies coordinating the camps. Policies to boost human capital need to be tailored to the specific needs of displaced Central Africans. Similarly, the livelihood opportunities of people living in camps appear to be more restricted, in particular because the land needed for agricultural activities is less available. Therefore, while overall livelihoods policies may be geared towards boosting agricultural productivity, it is important to ensure that IDPs in camps are not left out. This could mean supporting access to input and output markets for the retail trade activities or other small-scale services undertaken by those living in camps (Young, Jacobsen, & Monium Osman, 2009; Nguya, 2019).

Human capital- and livelihood-relevant policies must also consider the different situations of women and girls and men and boys. Both educational enrolment and attainment show large gender gaps: in 2019, CAR had approximately 8 girls for every 10 boys enrolled in primary education, and around 6 girls for every 10 boys enrolled in lower secondary education (World Bank, Forthcoming). Similarly, working women are less likely than working men to hold wage jobs in non-agricultural sectors, so their livelihoods are less able to lift them and their households out of poverty. Therefore, additional effort is needed to ensure girls enroll, stay, and learn in school and then find pathways to productive livelihoods. This could also have knock-on effects on fertility, another potential channel for poverty reduction, as the correlation between household size and poverty in Chapter 2 indicates (Ainsworth, Beegle, & Nyamete, 1996).

7.5. THE VERY POOREST CENTRAL AFRICANS CANNOT WAIT AND NEED URGENT SUPPORT FROM SOCIAL SAFETY NETS NOW

Policies supporting human capital, livelihoods, and infrastructure may take time to lift people out of poverty, so more direct action is needed; social safety nets could help. The objective of social safety nets is to ensure that households can consume at least a basic minimum level of food, usually through transfers of cash, food, or other in-kind benefits. Some countries also deploy *emergency* social safety nets that go beyond the current shortfall in consumption levels and respond directly to emerging shocks. Such policies can provide households with more immediate benefits. Since 54.9 percent of Central Africans — some 3.3 million people — live below the food poverty line, meaning that they do not have enough to eat even if they devote all of their consumption to food, this type of more direct action is vital. The food poor cannot wait for medium-term policies to take effect.

Current social protection programs are too small, and they do not target or address the needs of the very poorest Central Africans. The coverage of support programs is dwarfed by CAR's poor and vulnerable population: in 2021, just 1.0 percent of Central Africans lived in a household receiving government cash transfers, 9.6 percent lived in a household receiving care for infants and pregnant women, and 14.3 percent lived in a household receiving food. Additionally, there are no clear differences between deciles of the real consumption distribution in terms of the chances of receiving these existing programs — those suffering extreme forms of deprivation are no more likely to be covered than the non-poor. Moreover, the types of support that households receive do not address the immediate needs of food poor Central Africans. The EHCVM data hint at this, as distributing mosquito nets is by far the most prevalent support program that households themselves report receiving — this is certainly important for human capital development, but households need to feed themselves right now. The same message comes from looking at the current budget and organizational structure for providing social protection in CAR. In particular, the government's social protection funding is disproportionately allocated towards programs that would likely benefit richer portions of the population, including scholarships for higher education (World Bank, Forthcoming).

Given their short-run and longer-run benefits, expanding social safety nets is a key priority, although this effort will quickly hit fiscal constraints. As described in Box 6, emerging evidence on the Londö program and PACAD reveals potential successes in existing social protection programs in CAR, not only in providing short-run benefits but also supporting human capital development and livelihoods. This echoes evidence from other countries in the region showing that even *unconditional* cash transfers can boost human capital outcomes: for example, Nigeria’s Child Grant Development Program had lasting effects on stunting and uptake of deworming medication, despite not having any conditions for receiving the cash transfer (Carneiro, et al., 2021).⁶⁸ Expanding social protection might also help roll out other government programs by extending the government’s administrative reach. Finally, evidence from other countries suggests that social protection could even reduce conflict (Fetzer, 2020). These wide-ranging benefits show the value of expanding social safety nets. However, the resources required to lift everyone above the poverty line would be vast. Eliminating poverty in CAR would cost 500 billion XAF per year, or 1.5 billion USD in 2017 PPP terms, even in the theoretical scenario where assistance could be perfectly targeted and transferred to the poor without administrative costs. This drastically exceeds CAR’s fiscal capacity. Therefore, prioritization is needed alongside expansion.

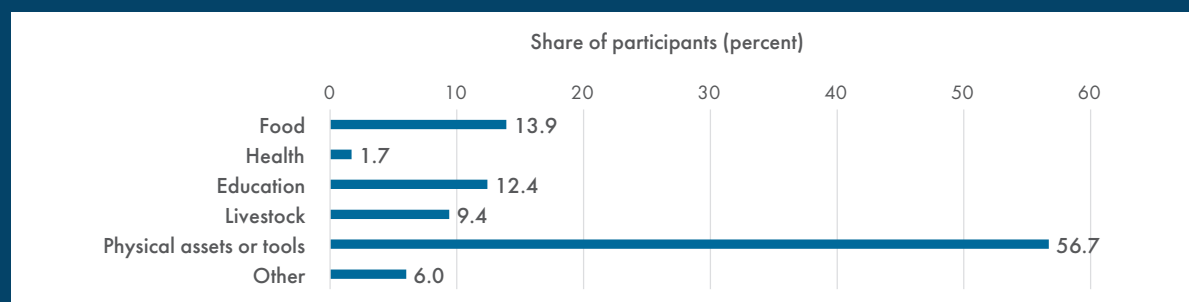
68 In other settings, policymakers have encouraged households to crowd in investments in human capital by making cash transfers conditional on sending children to school or going to clinics. Successful examples include Progresa in Mexico (see World Bank (2014)) and Bolsa Família in Brazil (see Gazola Hellman (2015)). However, in CAR, adding this type of conditionality may not be appropriate given the breadth and depth of poverty, the challenges some households may face in reaching education and health facilities (as shown in Chapter 6), and the additional organizational burden required to verify that the conditions are being met.

BOX 6. EVIDENCE ON EXISTING SOCIAL SAFETY NET PROGRAMS IN THE CENTRAL AFRICAN REPUBLIC

Rigorous evidence suggests that CAR's Londö public works program has significant positive effects on livelihoods and welfare. Londö is a program that provides 40 days of employment paying 1,500 XAF per day (about 4.41 USD 2017 PPP per day) — typically as a laborer — to individuals aged 18 years or more from vulnerable households. Participants also receive a bike to allow them to commute to work, which they can keep if they finish the 40 days of work. Among those interested in participating, eligibility is assigned through a publicly-observable and transparent lottery; this random assignment makes it possible to construct robust estimates of the impact of the program by comparing the eligible with the ineligible. The results suggest that the Londö program has lasting effects, increasing earnings of both male and female participants by around 10 percent after the program had finished (Alik-Lagrange, Buehren, Goldstein, & Hoogeveen, 2023). Participants also invested in physical assets associated with the new activities in which they engaged. This demonstrates how safety nets in the form of public works could bolster livelihoods and welfare.

Participants in PACAD report using the cash they receive to invest in physical and human capital. PACAD provides regular cash transfers to selected households for a two-year period, as well as investing in local services and infrastructure, which in turn leads to temporary job creation. While there has not yet been an experimental or quasi-experimental evaluation of the causal effects of PACAD, monitoring data collected in 2019 demonstrate how participants use the cash they receive (Hoogeveen & Taptué, 2018; Yama, 2019). Around 56.7 percent — the majority — used the cash they received to invest in physical assets or tools, 9.4 percent purchased livestock, while a further 12.4 percent spent money on education (Figure 65). Even though these estimates cannot be given a causal interpretation per se, they suggest that recipients of cash transfers in CAR use the money to invest in their livelihoods or in human capital.

FIGURE 65. USE OF CASH TRANSFERS RECEIVED THROUGH PACAD



Source: Yama (2019) and World Bank estimates.

Social safety nets could aim to reach those Central Africans facing more extreme forms of deprivation with practical targeting mechanisms. In the first instance, this means trying to reach those living below the food poverty line. To do this practically, it may be helpful to begin by selecting communes or small areas where food poverty is concentrated, using the granular poverty map in Chapter 2, or a version adapted for food poverty. This could be complemented by collecting simple household-level information to select households within communes or small areas. For example, this could mean using measures of food security that are easy to collect such as the WFP’s FCS, as this correlates strongly with food poverty. Additionally, it may be possible to identify households lacking access to water, sanitation, electricity, and other elements of basic infrastructure or assets — such overlaps deepen deprivation.

Yet even covering all of the food poor will be fiscally costly, so some additional means of prioritization for social safety nets may be needed. This could include prioritizing particular groups among the food poor, such as households with young children who could benefit more from investments in their human capital or those affected by conflict and displacement. Alternatively, lotteries could be used to select participants, as in the Londö project in CAR (Bance & Schnitzer, 2021; Alik-Lagrange, Buehren, Goldstein, & Hoogeveen, 2023). This relies less on officials and external actors who may be distrusted in fragile and conflict-affected settings, especially as the lotteries for choosing participants can be held publicly to improve transparency.

The types of benefits that households receive should maximize both short- and long-term benefits; this could mean “bundling up” cash or food transfers with other interventions to build human capital. Evidence from other countries suggests that it is difficult to generalize on the question of whether social safety nets should be delivered in terms of cash, food, or some other medium (Gentilini, 2016). However, combining cash or food with other benefits aimed at improving health, nutrition, education, and assets — through so-called “cash plus” programs — are increasingly demonstrating the potential for addressing households’ short-run needs whilst also building their human capital and livelihoods in the longer run (Loeser, Özler, & Premand, 2021). For example, cash could be provided alongside medication, nutrients, information on good health practices, or targeted investments in schools and clinics to support early childhood development or assets and training to support livelihood opportunities (Banerjee, Karlan, Darko Osei, Trachtman, & Udry, 2020; Gilligan, et al., 2020). Indeed, the success of existing social protection programs in CAR exemplifies the benefits of combining interventions, be that public works alongside provision of assets — in the Londö program — or cash transfers alongside local investments in infrastructure — through PACAD. This type of “bundling up” could be especially effective in CAR, given the overlap between monetary poverty and different dimensions of non-monetary poverty.

Notwithstanding the challenge of expanding, targeting, and choosing the right types of benefits, pragmatic solutions are needed to register and reach Central Africans. In some countries, unified social registries contain basic information on all potential participants in social protection programs — these can be built through explicit data collection efforts or by compiling existing data from other sources, including surveys, censuses, and administrative records (Leite, George, Sun, Jones, & Lindert, 2017). In CAR, building such registries is difficult because current provision of safety net-type measures is fragmented and many people are displaced. Moreover, new methods that try to register people through mobile phones should be treated with some caution as mobile phone penetration is amongst the lowest in the world: there are just 34 mobile cellular subscriptions per 100 people in CAR (Bance, Bermeo, & Kabemba, 2021; World Bank, 2021).⁶⁹ However,

⁶⁹ Estimates of mobile cellular penetration are taken from International Telecommunication Union (ITU) World Telecommunication/ICT Indicators Database, via the WDIs.

other fragile and conflict-affected settings — including Iraq, Mali, and Niger — have shown the potential gains when government and humanitarian actors can work together to combine their data and construct more complete databases of potential participants (Schnitzer, 2019; Grosh, Leite, Wai-Poi, & Tesliuc, 2022). This is especially important for ensuring that all groups facing extreme deprivation are covered, including IDPs in camps, IDPs outside of camps, or non-IDPs. Using the data that are already available could make a good start on building a unified social registry for CAR. Moreover, CAR could benefit from identifying a single national institution to lead on social protection policy, taking stock of existing interventions, and creating an actionable overall social protection strategy (World Bank, Forthcoming).

7.6. THE IMPORTANCE OF DATA FOR REINFORCING ACCOUNTABILITY AND GUIDING NEW POLICIES

This poverty assessment has benefited from unparalleled efforts to collect household data in CAR, especially on the country's displaced population. Incorporating IDPs into national household surveys poses a serious challenge. Therefore, the successful collaboration between ICASEES, UNHCR, and the World Bank, which enabled this to happen in the 2021 EHCVM, represents a significant achievement from which other countries could learn. This also builds on the other positive components of the 2021 EHCVM data collection, including following international best practices for questionnaire design and using technology to track data quality. The data have enabled rich insights into poverty-reducing policies and the relationship between displacement and poverty which would otherwise have been impossible.

The poverty assessment also demonstrates the value of integrating household data and alternative data sources to enhance policy guidance. First, the analysis compiles macroeconomic information — including on growth, trade, and prices — to understand better the prospects for poverty reduction in CAR.⁷⁰ Shocks to the macroeconomy clearly feed through to households, so the policy recommendations in this report hinge on examining these micro-macro linkages. Second, geospatial data have opened the door to more granular poverty estimates, extra information on livelihood patterns, and key insights into access to services and basic infrastructure, often in conjunction with the more traditional household data collected through the 2021 EHCVM. Yet while this report reveals the potential for using geospatial data — especially in contexts where conflict and displacement are common — more focused analysis could follow, guiding the specific details of policies to expand social safety nets, build human capital, and support livelihoods.

Maintaining the momentum on data collection could help design, implement, monitor, and evaluate the specific policies needed to lift Central Africans out of poverty. The 2021 EHCVM should be the beginning, not the end, of high-quality microdata collection in CAR. Fresh data collection efforts, building on the groundwork laid by the 2021 EHCVM and maintaining the sensitivity to conflict and displacement, will be critical. Microdata can help assess new policy interventions, as the rigorous impact evaluation of the Londö program demonstrates. Tracking progress on poverty and welfare over time can provide further practical and more specific guidance to policymakers, as well as holding them accountable, boosting transparency, and supporting good governance. Data can provide the road map towards poverty reduction in CAR.

70 The World Bank and WFP have supported CAR on collecting high-frequency price data (Andrée, 2021).

REFERENCES

- AFWC. (2016). *Report on Measures Taken by Members to Implement the Recommendations of the Nineteenth Session of the African Forestry and Wildlife Commission*. Nairobi: African Forestry and Wildlife Commission.
- Ainsworth, M., Beegle, K., & Nyamete, A. (1996). *The impact of women's schooling on fertility and contraceptive use: a study of fourteen Sub-Saharan African countries*. Washington DC: World Bank.
- Akresh, R., Bhalotra, S., Leone, M., & Osili, U. (2012). War and Stature: Growing up during the Nigerian Civil War. *American Economic Review*, 102(3), 273-277. doi:10.1257/aer.102.3.273
- Alik-Lagrange, A., Buehren, N., Goldstein, M., & Hoogeveen, J. (2023). Welfare impacts of public works in fragile and conflict affected economies: The Londö public works in the Central African Republic. *Labour Economics*, 81, 102293.
- Andrée, B. (2021). *Monthly food price estimates by product and market (Version 2022-11-22)*. CAF_2021_RTFF_v02_M. Washington DC: World Bank.
- Anker, R. (2011). *Engel's Law Around the World 150 Years Later*. Amherst Massachusetts: Political Economy Research Institute.
- Bance, P., & Schnitzer, P. (2021). Can the luck of the draw improve social safety nets? *Let's Talk Development Blog*. Washington DC: World Bank. Retrieved from <https://blogs.worldbank.org/developmenttalk/can-luck-draw-improve-social-safety-nets>
- Bance, P., Bermeo, L., & Kabemba, F. (2021). *Cash and the city: Digital COVID-19 social response in Kinshasa*. Washington DC: Brookings. Retrieved from <https://www.brookings.edu/blog/future-development/2021/09/08/cash-and-the-city-digital-covid-19-social-response-in-kinshasa/>
- Banerjee, A., Karlan, D., Darko Osei, R., Trachtman, H., & Udry, C. (2020). *Unpacking a Multi-Faceted Program to Build Sustainable Income for the Very Poor*. Cambridge: National Bureau of Economic Research.
- Barma, N., Kaiser, K., Minh Le, T., & Viñuela, L. (2011). *Rents to Riches? The Political Economy of Natural Resource-Led Development*. Washington DC: World Bank.
- Beegle, K., & Christiaensen, L. (2019). *Accelerating Poverty Reduction in Africa*. Washington DC: World Bank. doi:10.1596/978-1-4648-1232-3
- Bhula, R., Mahoney, M., & Murphy, K. (2020). *Conducting cost-effectiveness analysis (CEA)*. Cambridge: Abdul Latif Jameel Poverty Action Lab.
- Birner, R., Cohen, M., & Ilukor, J. (2011). *Rebuilding Agricultural Livelihoods in Post-Conflict Situations: What are the Governance Challenges? The Case of Northern Uganda*. Washington DC: International Food Policy Research Institute.
- Bondarenko, M., Kerr, D., Sorichetta, A., Tatem, A., & WorldPop. (2020). *Census/projection-disaggregated gridded population datasets for 51 countries across sub-Saharan Africa in 2020 using building footprints*. Southampton : University of Southampton.
- Bourguignon, F., & Chakravarty, S. (2003). The measurement of multidimensional poverty. *Journal of Economic Inequality*, 1, 25-49. Retrieved from <http://www.ophi.org.uk/wp-content/uploads/Bourguignon-Chakravarty-2003.pdf>
- Carneiro, P., Kraftman, L., Mason, G., Moore, L., Rasul, I., & Scott, M. (2021). The Impacts of a Multifaceted Prenatal Intervention on Human Capital Accumulation in Early Life. *American Economic Review*, 111(8), 2506-49. doi:10.1257/aer.20191726
- Chaudhuri, S. (2002). *Empirical methods for assessing household vulnerability to poverty*. New York: School of International and Public Affairs, Columbia University.

- Chen, C., Noble, I., Hellmann, J., Coffee, J., Murillo, M., & Chawla, N. (2015). *University of Notre Dame Global Adaptation Index: Country Index Technical Report*. Notre Dame Indiana : University of Notre Dame.
- Chi, G., Fang, H., Chatterjee, S., & Blumenstock, J. (2022). Microestimates of wealth for all low- and middle-income countries. *Economic Sciences*, 119(3).
- Christiaensen, L., & Subbarao, K. (2005). Towards an Understanding of Household Vulnerability in Rural Kenya. *Journal of African Economies*, 14(4), 520-558. doi:10.1093/jae/eji008
- Collier, P., & Hoeffler, A. (2004). Greed and grievance in civil war. *Oxford Economic Papers*, 56(4), 563-595.
- Corral, P., Henderson, H., & Segovia, S. (2023). *Poverty Mapping in the Age of Machine Learning*. Washington DC: World Bank.
- Corral, P., Irwin, A., Krishnan, N., Mahler, D., & Vishwanath, T. (2020). *Fragility and Conflict: On the Front Lines of the Fight Against Poverty*. Washington DC: World Bank. Retrieved from <http://hdl.handle.net/10986/33324>
- Cramer, C. (2010). *Unemployment and Participation in Violence*. Washington DC: World Bank.
- Cust, J., & Mandon, P. (2021). Nonrenewable Natural Capital and Human Capital Distortions: Impact on Accumulation, Gender, and the Public Sector. In W. Bank, *The Changing Wealth of Nations 2021: Managing Assets for the Future* (pp. 311-341). Washington DC: World Bank.
- Datt, G., & Lanjouw, P. (2023). On the poverty line. In J. Silber, *Research Handbook on Measuring Poverty and Deprivation* (pp. 50-59). Elgar Publishing.
- Deaton, A., & Zaidi, S. (2002). *Guidelines for Constructing Consumption Aggregates for Welfare Analysis*. Washington DC: World Bank.
- Dercon, S. (2002). Income Risk, Coping Strategies, and Safety Nets. *World Bank Research Observer*, 17(2), 141-116. doi:10.1093/wbro/17.2.141
- Dercon, S., Hoddinott, J., & Woldehanna, T. (2005). Shocks and consumption in 15 Ethiopian villages, 1999–2004. *Journal of African Economies*, 14(4), 559-585.
- FAO. (2005). *AQUASTAT Profil de Pays – République Centrafricaine*. Rome: Food and Agriculture Organization of the United Nations.
- FAO. (2022). *Global Information and Early Warning System on Food and Agriculture Country Brief: The Central African Republic*. Rome: Food and Agriculture Organization of the United Nations.
- Fetzer, T. (2020). Can Workfare Programs Moderate Conflict? Evidence from India. *Journal of the European Economic Association*, 16(6), 3337–3375. doi:10.1093/jea/jvz062
- FEWS NET. (2012). *Central African Republic Livelihood Zones*. Retrieved from FEWS NET Famine Early Warning System Network: <https://fewsn.net/west-africa/central-african-republic/livelihood-zone-map/july-2013>
- Fields, G. (2019). Self-employment and poverty in developing countries. *IZA World of Labor*, 60(2). doi:10.15185/izawol.60.v2
- Gao, J., Vinha, K., & Skoufias, E. (2021). *Vulnerability Tool: A User's Manual*. World Bank.
- Gazola Hellman, A. (2015). *How Does Bolsa Familia Work? Best Practices in the Implementation of Conditional Cash Transfer Programs in Latin America and the Caribbean*. Washington DC: Inter-American Development Bank. Retrieved from <https://publications.iadb.org/en/how-does-bolsa-familia-work-best-practices-implementation-conditional-cash-transfer-programs-latin>
- Gentilini, U. (2016). Revisiting the 'Cash Versus Good' Debate: New Evidence for an Old Puzzle? *World Bank Research Observer*, 31(1), 135-167.
- GERICS. (2015). *GERICS Country Climate Fact Sheet: Central African Republic*. Hamburg: GERICS Climate Service Center Germany.

- Gilligan, D., Arrieta, A., Devereux, S., Hoddinott, J., Kebede, D., Ledlie, N., . . . A, T. (2020). *Integrating Service Delivery with Cash Transfers to Improve Nutrition in Ethiopia: An Impact Evaluation of the IN-SCT Pilot Project in Oromia and Southern Nations, Nationalities, and Peoples' Region*. New York: UNICEF.
- GRID3. (2021). *Mapping and Classifying Settlement Locations*. Palisades NY: GRID3.
- Grosh, M., Leite, P., Wai-Poi, M., & Tesliuc, E. (2022). *Revisiting Targeting in Social Assistance: A New Look at Old Dilemmas*. Washington DC: World Bank.
- Günther, I., & Harttgen, K. (2009). Estimating households vulnerability to idiosyncratic and covariate shocks: A novel method applied in Madagascar. *World Development*, 37(7), 1222–1234.
- Ha, J., Kose, A., & Ohnsorge, F. (2021). *One-Stop Source: A Global Database of Inflation*. Washington DC: World Bank.
- Haughton, J., & Khandker, S. (2009). *Handbook on Poverty and Inequality*. Washington DC: World Bank.
- Holla, A., Bendini, M., Dinarte, L., & Trako, I. (2021). *Is Investment in Pre-Primary Education Too Low? Lessons from (Quasi) Experimental Evidence across Countries*. Washington DC: World Bank.
- Hoogeveen, J., & Taptué, A.-M. (2018). *Iterative Beneficiary Monitoring: An adaptive approach to enhancing implementation of World Bank projects*. Washington DC: World Bank.
- ICASEES. (2021). *MICS6-RCA Enquête par grappes à indicateurs multiples 2018–2019, Rapport final des résultats de l'enquête*. Bangui : ICASEES.
- ICASEES. (2023). *Rapport sur la pauvreté : Volume 1*. Bangui : ICASEES.
- ICASEES and World Bank. (2023). *Enquête Nationale Agricole en République Centrafricaine : Rapport Principal*. Bangui: ICASEES and World Bank.
- IDMC. (2020). *The impacts of internal displacement on education in Sub-Saharan Africa*. Geneva: Internal Displacement Monitoring Centre.
- IMF. (2023). *IMF Staff Completes 2022 Article IV Mission to the Central African Republic*. Washington DC: International Monetary Fund.
- IOM. (2022). *Displacement Tracking Matrix - Central African Republic Crisis, Monthly Dashboard #8 (23 December 2022)*. Geneva: International Organization for Migration.
- Jensen, R. (2007). The Digital Provide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector. *Quarterly Journal of Economics*, 122(3), 879-924.
- Kosmidou-Bradley, W., & Blankespoor, B. (2019). *Measuring Mobility in Afghanistan Using Time-Cost Raster Models : Methodology Note*. Washington DC: World Bank.
- Kouame, W. (2022). *How the Central African Republic can move from fragility to inclusive growth*. Retrieved from Africa Can End Poverty World Bank Blog: <https://blogs.worldbank.org/africacan/how-central-african-republic-can-move-fragility-inclusive-growth>
- Kouame, W., & Fraeters, H. (2021). *Why the Central African Republic should invest now in its human capital to give itself a future*. Retrieved from Africa Can End Poverty World Bank Blog: <https://blogs.worldbank.org/africacan/why-central-african-republic-should-invest-now-its-human-capital-give-itself-future>
- Lee, K., & Braithwaite. (2022). High-resolution poverty maps in Sub-Saharan Africa. *World Development*, 159.
- Leite, P., George, T., Sun, C., Jones, T., & Lindert, K. (2017). *Social Registries for Social Assistance and Beyond: A Guidance Note and Assessment Tool*. Washington DC: World Bank.
- Loeser, J., Özler, B., & Premand, P. (2021). *What have we learned about cash transfers?* Retrieved from World Bank Development Impact Blog: <https://blogs.worldbank.org/impacetevaluations/what-have-we-learned-about-cash-transfers>
- Mackellar, L., Wörgötter, & Wörz, J. (2002). Economic Growth of Landlocked Countries. In G. Chaloupek, A. Guger, E. Nowotny, & G. Schwödiauer, *Ökonomie in Theorie und Praxis* (pp. 213–226). Berlin: Springer.

- Mancini, G., & Vecchi, G. (2022). *On the Construction of a Consumption Aggregate for Inequality and Poverty Analysis*. Washington DC: World Bank.
- Ministère de la Santé et la Population. (2010). *Normes relatives au district de santé en république centrafricaine*. Bangui : Ministère de la Santé et la Population.
- Ministère de la Santé et la Population. (2015). *Plan de transition du secteur santé en république centrafricaine 2015–2017*. Bangui : Ministère de la Santé et la Population.
- Ministère de l'économie, du Plan, et de la Cooperation internationale. (2016). *Plan National de Relèvement et de Consolidation de la Paix 2017–2021*. Bangui : Ministère de l'économie, du Plan, et de la Cooperation internationale.
- Ministère de l'économie, du Plan, et de la Cooperation internationale. (2021). *Note stratégique de prolongation du plan national de relèvement et de consolidation de la paix en centrafrique et du cadre d'engagement mutuel 2022–2023*. Bangui : Ministère de l'économie, du Plan, et de la Cooperation internationale.
- Ministère des Finances et du Budget. (2023). Lois de finances. Tirée du ministère des Finances et du Budget, République centrafricaine : <https://www.finances.gouv.cf/finances/les-lois-de-finances-ldf>
- Mokleiv Nygård, H. (2018). *Inequality and conflict—some good news*. Retrieved from Development for Peace World Bank Blog: <https://blogs.worldbank.org/dev4peace/inequality-and-conflict-some-good-news>
- Moreno, C. (2017). *Defining MPI Dimensions through Participation: The Case of El Salvador*. Oxford: OPHI. Retrieved from https://www.ophi.org.uk/wp-content/uploads/B49_El_Salvador_vs2_online.pdf
- NBS. (2020). *2019 Poverty and Inequality in Nigeria: Executive Summary*. Abuja: Nigeria National Bureau of Statistics.
- Nguya, G. (2019). 'We are all IDPs': *Vulnerability and livelihoods in Mugunga 3 camp, Goma, Democratic Republic of the Congo*. London: Secure Livelihoods Research Consortium.
- OCHA. (2021). *Central African Republic: Staying with the people in need*. New York: OCHA.
- OECD. (2023). *Central African Republic Country Profile*. Retrieved from Observatory of Economic Complexity: <https://oec.world/en/profile/country/caf>
- OurWorldInData. (2023). *Central African Republic: Coronavirus Pandemic Country Profile*. Oxford: OurWorldInData.
- Pande, R., & Enevoldsen, N. (2021). *Growing Pains? A Comment on "Converging to Convergence"*. Cambridge: National Bureau of Economic Research. Retrieved from https://www.nber.org/system/files/working_papers/w29046/w29046.pdf
- Pape, U., & Sharma, A. (2019). *Using Micro-Data to Inform Durable Solutions for IDPs : Volume A*. Washington DC: World Bank.
- Pritchett, L., Suryahadi, A., & Sumarto, S. (2000). *Quantifying vulnerability to poverty: A proposed measure, applied to Indonesia*. Washington DC: The World Bank.
- Quetulio-Navarra, M., Niehof, A., & van der Vaart, W. (2013). Social Capital in Involuntary Displacement and Resettlement. *International Journal of Social Sciences and Humanity Studies*, 5(2), 139-154.
- Ramesh, A., Blanchet, K., Ensink, J., & Roberts, B. (2015). Evidence on the Effectiveness of Water, Sanitation, and Hygiene (WASH) Interventions on Health Outcomes in Humanitarian Crises: A Systematic Review. *PLoS One*, 10(9).
- Ratledge, N., Cadamuro, G., de la Cuesta, B., Stigler, M., & Burke, M. (2022). Using machine learning to assess the livelihood impact of electricity access. *Nature*, 611, 491-495. doi:10.1038/s41586-022-05322-8
- Ravallion, M. (2012). Why Don't We See Poverty Convergence? *American Economic Review*, 102(1), 504-523. doi:10.1257/aer.102.1.504
- Ravallion, M., & Chen, S. (1997). What Can New Survey Data Tell Us about Recent Changes in Distribution and Poverty? *World Bank Economic Review*, 11(2), 357-382.

- Schnitzer, P. (2019). How to Target Households in Adaptive Social Protection Systems? Evidence from Humanitarian and Development Approaches in Niger. *Journal of Development Studies*, 55, 75-90.
- Son, H., & Kakwani, N. (2004). *Economic Growth and Poverty Reduction: Initial Conditions Matter*. Brasilia: United Nations Development Programme International Poverty Centre.
- Theunynck, S. (2009). *School Construction for Universal Primary Education in Africa: Should Communities Be Empowered to Build Their Schools?* Washington DC: World Bank.
- UNDP. (2023). *Journey to Extremism in Africa: Pathways to Recruitment and Disengagement*. New York: United Nations Development Programme.
- UNDP and OPHI. (2022). *Unpacking deprivation bundles to reduce multidimensional poverty*. New York and Oxford: United Nations Development Programme and Oxford Poverty and Human Development Initiative.
- UNHCR. (2022). *Monitoring de Protection: République Centrafricaine - Octobre-Décembre 2022*. Geneva: United Nations High Commissioner for Refugees.
- UNHCR. (2023). *Central African Republic Regional Response*. Retrieved from UNHCR Operational Data Portal: <https://data.unhcr.org/en/situations/car>
- USAID. (2018). *Climate Risks in the Central Africa Regional Program for the Environment (CAPRE) and Congo Basin*. Washington DC: USAID.
- USCRI. (2022). *Addressing Forced Displacement in the Central African Republic: How the international community can support protection efforts of Central African refugees and internally displaced people*. Arlington: United States Committee for Refugees and Migrants.
- USDA. (2011). *Estimated Calorie Needs per Day by Age, Gender, and Physical Activity Level*. Washington DC: United States Department of Agriculture. Retrieved from <https://www.fns.usda.gov/estimated-calorie-needs-day-age-gender-and-physical-activity-level>
- USDA. (2022). *International Agricultural Productivity*. Retrieved from Economic Research Service US Department of Agriculture: <https://www.ers.usda.gov/data-products/international-agricultural-productivity/>
- Vijayakumar, S. (2019). *Fixing the road to recovery in the Central African Republic*. Retrieved from Nasikiliza World Bank Blog: <https://blogs.worldbank.org/nasikiliza/fixing-the-road-to-recovery-in-the-central-african-republic>
- Vinha, K. (2023). *Vulnerability in CAR* Technical Note.
- WFP. (2008). *Food consumption analysis: Calculation and use of the food consumption score in food security analysis*. Rome: World Food Programme. Retrieved from https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp197216.pdf
- WFP. (2021). *Livelihood Coping Strategies - Food Security*. Retrieved from VAM Resource Centre: <https://resources.vam.wfp.org/data-analysis/quantitative/food-security/livelihood-coping-strategies-food-security>
- World Bank. (2014). *A Model from Mexico for the World*. Washington DC: World Bank. Retrieved from <https://www.worldbank.org/en/news/feature/2014/11/19/un-modelo-de-mexico-para-el-mundo>
- World Bank. (2018). *Piecing Together the Poverty Puzzle: Poverty and Shared Prosperity Report 2018*. Washington DC: World Bank.
- World Bank. (2018). *Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle*. Washington DC: World Bank. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/30418/9781464813306.pdf>
- World Bank. (2018). *The Human Capital Project: Frequently Asked Questions*. Washington DC: World Bank.
- World Bank. (2018). *World Development Report 2018: Learning to Realize Education's Promise*. Washington DC: World Bank. doi:10.1596/978-1-4648-1096-1

- World Bank. (2019). *Aspiring Indonesia - Expanding the Middle Class*. Jakarta: World Bank. Retrieved from <https://www.worldbank.org/en/country/indonesia/publication/aspiring-indonesia-expanding-the-middle-class>
- World Bank. (2019). *CEMAC: Deepening Regional Integration to Advance Growth and Prosperity*. Washington DC: World Bank.
- World Bank. (2019). *Priorities for Ending Poverty and Boosting Shared Prosperity: Central African Republic Systematic Country Diagnostic*. Washington DC: World Bank.
- World Bank. (2020). *Country Partnership Framework for the Central African Republic for the Period FY21-FY25*. Washington DC: World Bank.
- World Bank. (2020). *Human Capital Index 2020: Central African Republic country brief*. Washington DC: World Bank.
- World Bank. (2020). *Nigeria in Times of COVID-19 - Laying Foundations for a Strong Recovery*. Washington DC: World Bank. Retrieved from <https://openknowledge.worldbank.org/handle/10986/34046>
- World Bank. (2021). *Central African Republic Economic Update: Investing in Human Capital to Protect the Future*. Washington DC: World Bank.
- World Bank. (2021). *Climate Risk Profile: Central African Republic*. Washington DC: World Bank.
- World Bank. (2021). *Prioritizing the poorest and most vulnerable in West Africa: Togo's Novissi platform for social protection uses machine learning, geospatial analytics, and mobile phone metadata for the pandemic response*. Washington DC: World Bank. Retrieved from <https://www.worldbank.org/en/results/2021/04/13/prioritizing-the-poorest-and-most-vulnerable-in-west-africa-togo-s-novissi-platform-for-social-protection-uses-machine-l>
- World Bank. (2021). *Rise in Food Prices Due to Escalating Conflict Tips More People into Poverty in the Central African Republic*. Bangui: World Bank.
- World Bank. (2021). *Tchad : Évaluation de la pauvreté*. Washington DC: World Bank.
- World Bank. (2022). *From Fragility to Accelerated and Inclusive Growth: A Country Economic Memorandum for the Central African Republic*. Washington DC: World Bank.
- World Bank. (2022). *Macro-Poverty Outlook Fall 2022: Central African Republic*. Washington DC: World Bank.
- World Bank. (2022). *Poverty and Shared Prosperity 2022: Correcting Course*. Washington DC: World Bank. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/37739/9781464818936.pdf>
- World Bank. (2023). *Central African Republic: Country Summary*. Retrieved from World Bank Climate Change Knowledge Portal: <https://climateknowledgeportal.worldbank.org/country/central-african-republic>
- World Bank. (2023). *Macro-Poverty Outlook Spring 2023: Central African Republic*. Washington DC: World Bank.
- World Bank. (Forthcoming). *Central African Republic: Public Expenditure Review in Key Human Development Sectors*. Washington DC: World Bank.
- World Vision. (2019). *CAR: Mosquito nets for all to prevent malaria*. Retrieved from World Vision International: <https://www.wvi.org/central-african-republic/article/car-mosquito-nets-all-prevent-malaria>
- Yama, G. (2019). *Rapport de l'enquête itérative des bénéficiaires du Project d'Appui aux Communautés Affectées par le Déplacement (PACAD)*. Bangui : World Bank.
- Young, H., Jacobsen, K., & Monium Osman, A. (2009). *Livelihoods, Migration and Conflict: Discussion of Findings from Two Studies in West and North Darfur, 2006–2007*. Medford and Somerville: Feinstein International Center, Tufts University.



WORLD BANK GROUP