



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# The Effects of COVID-19 on Food Security in Urban and Rural Mali

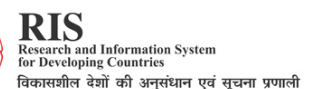
*Policy Research Note # 004*

*Date: 30 August 2021*

**Veronique Theriault, David Tschirley, and Mywish Maredia**

## Key Messages

- The downward revision of the guaranteed purchase cotton price due to the pandemic led to a cotton production boycott.
- The share of Malian households living under poverty (< \$1.90 day/capita) and extreme poverty (\$1/day/capita) went up with the onset of the pandemic.
- The pandemic has worsened food insecurity in both urban and rural areas.
- There is need for expanded social safety net programs to support affected households in both rural and urban areas.
- It is critical to prioritize mass vaccination of the population to facilitate faster return to normal participation in economic activities



# Food Security Policy Research, Capacity, and Influence (PRCI) Policy Research Note

This Research Note series is designed to disseminate timely research and policy analytical outputs generated by the USAID-funded Feed the Future Innovation Lab for Food Security Policy Research, Capacity, and Influence (PRCI) and its Associate Awards and Buy-ins. The PRCI project is managed by the Food Security Group (FSG) of the Department of Agricultural, Food, and Resource Economics (AFRE) at Michigan State University (MSU), and implemented by a consortium of three major partners: the International Food Policy Research Institute (IFPRI), Cornell University, the Regional Network of African Policy Research Institutes (ReNAPRI), and the Institute for Statistical, Social, and Economic Research (ISSER) at the University of Ghana. The MSU consortium works with governments, researchers, and private sector stakeholders in Feed the Future focus countries in Africa and Asia to co-create a global program of research and institutional capacity development that will enhance the ability of local policy research organizations to conduct high-quality food security policy research and to influence food security policy more effectively while becoming increasingly self-reliant.

Research notes are aimed at researchers, policy makers, donor agencies, educators, and international development practitioners. Selected notes will be translated into other languages.

Copies of all PRCI Research Papers and Policy Briefs are freely downloadable in pdf format from [this link](#). Copies of all PRCI papers and briefs are also submitted to the USAID Development Experience Clearing House (DEC) and to AgEcon Search.

## Statement of Support

This research is made possible by the generous support of the American people through the United States Agency for International Development (USAID) through funding to the Feed the Future Innovation Lab for Food Security Policy Research, Capacity, and Influence (PRCI) under grant 7200AA19LE00001. The contents are the responsibility of the study authors and do not necessarily reflect the views of USAID or the United States Government. Copyright © Michigan State University 2021. All rights reserved. This material may be reproduced for personal and not-for-profit use without permission from but with acknowledgment to MSU. Published by the Department of Agricultural, Food, and Resource Economics, Michigan State University, Justin S. Morrill Hall of Agriculture, 446 West Circle Dr., Room 202, East Lansing, Michigan 48824, USA.

# I. Introduction

On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic. Responding to the call of the WHO, the government of Mali, along with many other governments worldwide, started to implement containment and mitigation measures to prevent the spread of COVID-19. One year and half later, the pandemic continues to ravage populations worldwide, including in Mali. Beyond health effects, the pandemic has affected how Malians, in both rural and urban areas, eat, work, and live. Utilizing secondary data plus a nationally representative phone survey conducted by PRCI six months into the pandemic, we report on some of the effects of COVID-19 on food security in urban and rural Mali. This policy research note looks especially at food availability and accessibility through changes in the agricultural sector, employment/income, and food consumption.

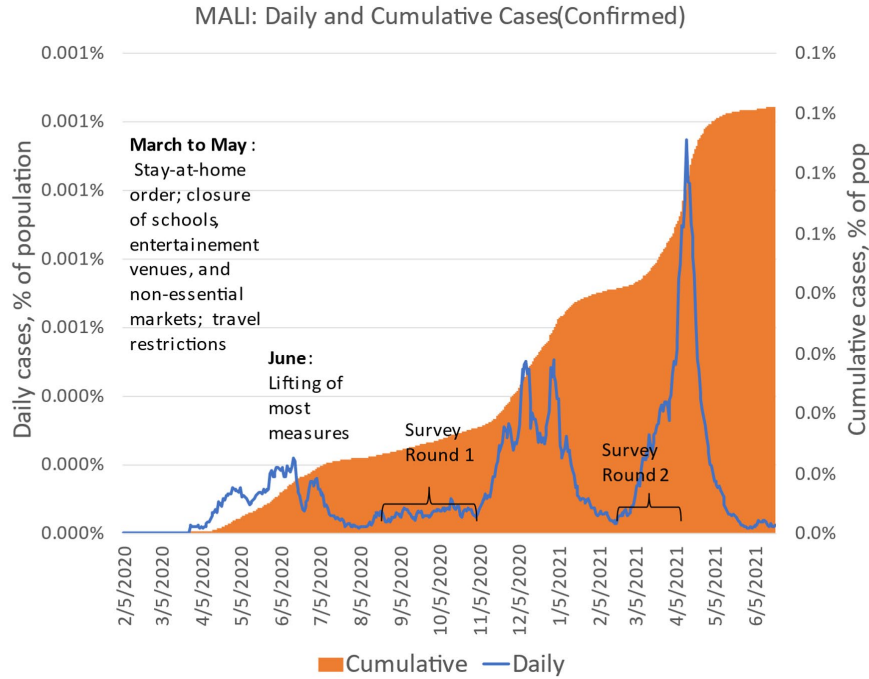
The PRCI survey in Mali was part of a multi-country study across African countries: Kenya, Senegal, Mali, Nigeria, and Zambia (Maredia et. al., 2021). The same sampling and overall design methods were used in every country. What follows is a summary of those methods and is shared nearly in its entirety by all country policy research notes on this topic. Findings indicate that rural and urban populations have been similarly highly impacted by COVID-19, highlighting the integration of food and labor markets at a national scale.

It is likely that the pandemic will be a lingering grave concern for some time in Mali and many other countries, based on the fact that the country has been through three waves of the pandemic, there is continuing emergence of new variants, and the pace of vaccination is slow. There is need for expanded social safety net programs to support affected households in both rural and urban areas. It is critical to prioritize mass vaccination of the population to facilitate faster return to normal participation in economic activities.

## II. Timeline

Among the containment and mitigation measures implemented in Mali were a stay-at-home order, closing of schools, entertainment venues, and non-essential markets, and domestic and international travel restrictions (CPR portal 2020). Most of these measures were lifted in June 2020, as the first wave retreated (See Figure 1). The second wave of the pandemic developed in December 2020 and subsided in February 2021, but the worst was not over. A third wave of higher magnitude hit Mali in March and April 2021. With a very slow pace of vaccination and the continuing emergence of new variants, such as Beta and Delta, the Malian population is not shielded from a fourth wave, which could be worse, in terms of infection and mortality rates, than the previous ones. With limited testing capacity and potentially high cases of people infected with the coronavirus but showing no symptoms, the actual number of COVID cases are certainly much higher than officially confirmed cases.

**Figure 1. Cumulative and daily officially confirmed COVID-19 cases in Mali.**



Source: Data from Ritchie et al. (2020)

### III. Methods

Phone survey was used to collect data between September 18 and October 26, 2020, by GeoPoll, a survey platform that specializes in survey research using mobile phones. GeoPoll conducted the same survey in Senegal, Kenya, Nigeria, and Zambia as part of a broader research study to assess the impact of COVID-19 on incomes and food security in urban and rural areas of Africa (Maredia et al. 2021)..

Respondents were selected through simple random sampling (SRS) from GeoPoll’s verified list of mobile subscribers in Mali. The survey was targeted to the adult (i.e., 18 years old and above) main shopper of the household. Eight hundred (800) respondents, stratified 50/50 by rural and urban location, participated in the survey. The sample size implies an ability to estimate national effects with 3.5% (or 4.6%) margin of error and a 95% (or 99%) confidence level. For rural and urban strata, margin of error is 4.9% (6.5%) for a 95% (or 99%) confidence level.

Cell phone survey data are representative only of people with access to a mobile phone. However, according to the DATAREPORTAL ([www.datareportal.com](http://www.datareportal.com)), it is likely that more than 90% of adults in Mali had access to mobile phones in 2018-2019, suggesting relatively unbiased coverage by this survey. To reduce remaining bias that might arise from not all calls leading to a completed survey, two measures were taken. First, within each rural and urban stratum, respondents were geographically distributed across all the country’s 47 counties, with sample size for each county based on probability proportional to population size. This method of sample selection ensured that the respondents represented the spatial density and distribution of the country’s population geographically. Second, we

applied sample weights to adjust the rural/urban split, and gender and education of the household head in total population. All reported results use these three adjustment factors.

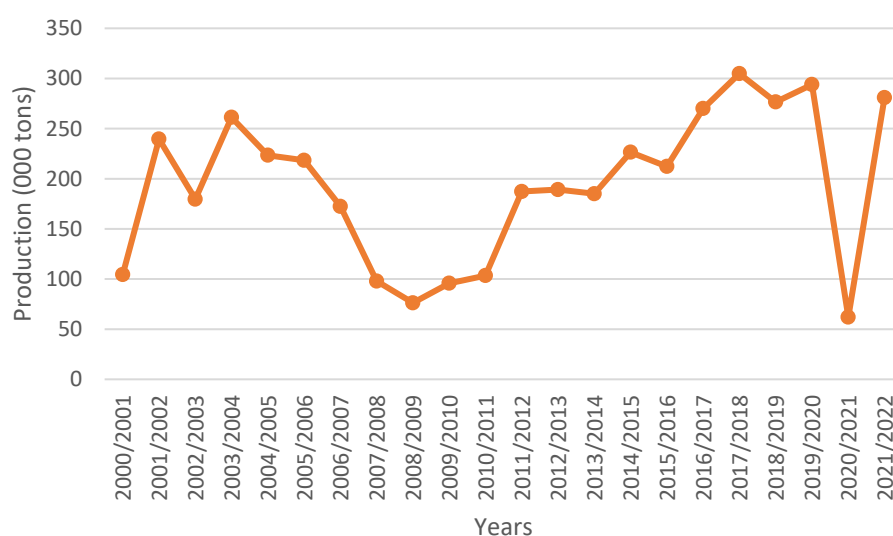
## IV. Empirical Findings

### **Agricultural Sector**

The pandemic and government's response to it likely had two broad effects on the country's agricultural sector. The pandemic has led to increased public expenditures, arising from the containment and mitigation measures and other actions taken to protect public health and the economy. Those unexpected expenditures have put severe strain on the government budget, including the share allocated to agriculture. First, it led to delay in the payment of invoices of agro-input dealers, which in turn, dramatically slowed down the distribution of subsidized fertilizer to farmers (Kone et al. 2020a). The limited access to subsidized fertilizers likely resulted in lower yields, especially among target crops (i.e., rice, maize, cotton, millet, and sorghum). Given the agrarian nature of the Malian economy, there is a need to further examine the effects of the pandemic not only on agricultural production but also on nutrition and poverty outcomes among rural households, which predominantly depend on farming for their livelihood.

Second, budget constraint led to the revision downward of the guaranteed purchase price for cotton by the state-owned Malian Company for Textile Development (CMDT). For the 2020/21 agricultural campaign, the guaranteed price was initially set at 275 CFAF/kg, but later reduced to 200 FCFA/kg, the equivalent of a 30% drop, to account for fluctuations in the world price of cotton due to the pandemic (Kone et al. 2020b). In response to the lower guaranteed price, farmers boycotted cotton production. As a result, production plummeted from a three-year average of 290,000 tons to 62,000 tons (Figure 2). By boycotting cotton, most farmers gave up their access to fertilizers on credit made available by the CMDT. Since cotton is the only cash crop with a guaranteed buyer and price, lower production most likely translated into lower revenues. Under a new CMDT administration, cotton production bounced back to an estimated 281,000 tons in 2021/22.

**Figure 2. Cotton Production**



Source: Data from USDA/FAS (2021)

## V. Employment, Income, and Poverty

Findings from the PRCI survey show that 15% of Malian households, rural and urban, reported a net loss of at least one source of income from March to July 2020 and that about one out of four households, rural and urban, experienced an overall decline in income. The average daily per capita income dropped \$0.27 (14%) in Mali, with no significant difference between urban and rural households. With an average per capita income per day of less than \$2, any income drop is felt very severely. Due to the pandemic, the share of Malian households living under poverty (< \$1.90 day per capita) and extreme poverty (\$1/day per capita) increased. More households living under extreme poverty are in rural areas.

## VI. Food Consumption

For a country that was already vulnerable to food insecurity, the pandemic made it worse. According to the PRCI survey results, six months into the crisis, a quarter of Malian households did not have access to enough resources (e.g., income and saving) to meet their food consumption needs for more than a week. Over one-fifth of Malian rural and urban household members reported skipping meals because of lack of food. One-third of urban households reported consuming lower quantity of food and food of lower quality. A higher share of rural households reported consuming lower quantity of food (41%) compared to lower quality (31%). In both rural and urban areas, the greatest decline in food consumption was among starchy staples followed by meat, chicken, and fish. About half of households indicated high food costs as reasons for cutting their food consumption.

## VII. Policy Implications

The Malian population has had to deal with major instability since March 2020. In addition to the pandemic, there has been ongoing unrest and political instability, which have been detrimental to the well-being of all Malians. With greater level and severity of poverty, more households and individuals are food insecure and trapped in poverty. Both rural and urban areas have been negatively impacted. The pandemic should act as a wake-up call for addressing the root causes of food insecurity and poverty.

Acknowledging financial constraints, a three-point response is proposed. First, food assistance programs must be expanded to address hunger and nutrition problems. Whenever possible electronic means of delivery (i.e., electronic cash transfer to purchase food, food e-voucher) should be prioritized to increase transparency and effectiveness, especially in reaching out to vulnerable populations in regions with high insecurity. Effective monitoring and evaluation of those programs is also needed to make sure that the objectives and goals of the programs are met and ensure accountability for the resources used to achieve them. In addition to improving the effectiveness of food assistance programs, more investments in the agri-food systems must be made to increase production and employment opportunities.

Second, to avoid new waves of COVID-19 outbreaks and to resume a normal socio-economic life, vaccination coverage must be increased. This implies increasing the number of vaccine doses available, fighting vaccine hesitancy and ensuring sufficient human and organization resources to mobilize a massive vaccination campaign.

Third, there is a need to better inform the policy discussion on how to address food and nutrition insecurity and extreme poverty in the context of COVID-19. The pandemic and socio-political crisis has led Mali into an economic recession (AfDB 2021), further exacerbating food insecurity and poverty. With the lack of a democratically elected government, many donors have reduced their engagement in Mali. Yet the multifaceted crisis calls more support and greater assistance from the donor community, not less.

This need for assistance relates especially to policy design, implementation, and assessment. As policies are designed, common mistakes seen in other countries, based on incorrect beliefs about how food systems work, need to be avoided (Liverpool-Tasie, et. al., 2021). In particular, the essential role of food supply chains needs to be recognized and the flow of food ensured. This requires ensuring that food traders and truckers remain in business and able to move food, since food markets are now important not just in urban areas but also in rural areas. It also requires that small-medium enterprises across all segments of the food supply chain be assisted to keep operating, through low-cost loans, targeted subsidies, and assistance in paying of rent, electricity, and fuel bills. Both can be done in a way that does not compromise the need for distancing and hygiene in an overwhelmingly unvaccinated population.

To better inform policies to alleviate poverty and achieve food security, more and better data are needed. Longitudinal household data are key to understand how the pandemic has affected and continues to affect urban and rural households and their members and the best policies to support them through this challenging time.



## VIII. References

1. African Development Bank Group (AfDB). 2021. Mali Economic Outlook. Retrieved from: <https://www.afdb.org/en/countries/west-africa/mali/mali-economic-outlook>
2. DATAREPORTAL. 2020. Retrieved from: [www.datareportal.com](http://www.datareportal.com)
3. Kone, Y., Smale, M., Thériault, V., Sissoko, M., Assima, A., Keita, N. 2020a. Malian Farmers' Access to Fertilizer Is Challenged by COVID-19. Blog Post. October 1st. <https://www.canr.msu.edu/news/how-is-covid-19-worsening-food-insecurity-in-mali-1>
4. Kone, Y., Sissoko, M., Assima, A., Keita, N. 2020b. Why Could the COVID-19 Cotton Crisis Lead to an Economic and Social Crisis in Mali. Blog Post July 6th. <https://www.canr.msu.edu/news/why-could-the-covid-19-cotton-crisis-lead-to-an-economic-and-social-crisis-in-mali>
5. Innovation Lab for Food Security Policy Research, Capacity & Influence (PRCI). 2020. COVID-19 urban and rural household cellphone survey. Dataset. Food Security Group, Agricultural, Food and Resource Economics Department. Michigan State University.
6. Liverpool-Tasie, L.S.O, Thomas Reardon, and Ben Belton (2021). “Essential non-essentials”: COVID-19 policy missteps in Nigeria rooted in persistent myths about African food supply chains. *Applied Economic Perspectives and Policy*, 43(1).
7. Maredia, M.K., Adenikinju, A., Belton, B., Chapoto, A., Faye, N. F., Liverpool-Tasie, S., Olwande, J., Reardon, T., Theriault, V., and Tschirley, D. 2021. COVID-19’s impacts on incomes in urban and rural areas are surprisingly similar: Evidence from five African countries. Under review.
8. Ritchie, H. Ortiz-Ospina, E., Beltekian, D., Mathieu, E., Hasell, J., Macdonald, B., Giattino, C., Appel, C., Rodés-Guirao, L., and Roser, M. 2020. Coronavirus Pandemic (COVID-19). Dataset. Retrieved from: <https://ourworldindata.org/coronavirus>
9. United States Department of Agriculture/ Foreign Agricultural Service (USDA/FAS). 2021. Production, Supply, and Distribution. Dataset. Retrieved from: <https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery>