# MYANMAR:

## COMPOUNDING FOOD SECURITY CHALLENGES

**Agriculture and Food Security Monitoring Report June 2023**

WORLD BANK GROUP

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# NOTE ON SEASONS AND YEARS

**Crop year (CY):** Since 1 April 2021, the Central Statistics Office (CSO) defines this as from 1 April to 31 March the following year. Before April 2021, CY ran from 1 July to 30 June of the following year.

**Marketing year (MY):** As defined by the USDA, the MY for maize runs from October to September the following year. For rice, it runs from January to December.

**Monsoon season:** As defined by the FAO, monsoon season runs from May/June to December/January, e.g., the 2022 monsoon = May/June 2022 to December 2022/January 2023.

**Fiscal year (FY):** Ends every March.

# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **CAGR** | Compound annual growth rate |
| **CBM** | Central Bank of Myanmar |
| **CSO** | Central Statistics Office |
| **DA** | Difference anomaly |
| **EVI** | Enhanced Vegetation Index |
| **FCS** | Food consumption scores |
| **FY** | Fiscal year |
| **HDDS** | Household Dietary Diversity Score |
| **IDPs** | Internally Displaced Persons |
| **IFPRI** | International Food Policy Research Institute |
| **MFIs** | Microfinance institutions |
| **MOC** | Ministry of Commerce |
| **MMK** | Myanmar Kyat |
| **MRF** | Myanmar Rice Federation |
| **MSPS** | Myanmar Subnational Phone Surveys |
| **UNHCR** | United Nations High Commissioner for Refugees |
| **USAID** | United States Agency for International Development |
| **USDA** | United States Department of Agriculture |
| **VCI** | Vegetation Condition Index |
| **WBFS** | World Bank Farmer Survey |
| **WFP** | World Food Program |

# ACKNOWLEDGEMENTS

This Myanmar Food Security and Agriculture Sector Monitoring report was prepared by a team led by Valens Mwumvaneza (Sr. Agricultural Specialist and Task Team Leader), with the support of Mateo Ambrosio-Albalá (Consultant, Lead Author) and Nay Nwe Linn Maung (Consultant). The study was carried out under the guidance and supervision of Dina Umali-Deininger (Practice Manager, Agriculture and Food Global Practice).

The team would like to express its sincere thanks to Mariam Sherman (Country Director for Myanmar, Cambodia, and Lao PDR), Ulrich Schmitt (Operations Manager), Animesh Shrivastava (Lead Economist), Phyrum Kov (Acting Program Leader), Mio Takada (Senior Agriculture Economist); Mekbib Haile (Senior Agriculture Economist), and Kemoh Mansaray (Senior Economist) who provided guidance, valuable comments, and advice. The team is also grateful to Benny Istanto (Extended Term Consultant), Minn Thu (Extended Term Consultant), and Ye Naing Win (Consultant) for their technical inputs.

The team extends its gratitude and recognition to the Myanmar Survey Research team as well as the individual consultants: Khin Swe Swe Aye (Agricultural Economist), Thurein Htoo (Agrifinance Specialist), Aka Kyaw Min Maw (Trade Economist), and Min Min Than (Research Analyst) for their valuable contributions in providing information and insights that greatly supported in compiling this report. Additionally, the team acknowledges Lindsay Hartley-Backhouse and Megan Mayzelle from Written Progress for editing the report. We express special appreciation to Kay Khine Win (Program Assistant) and Tram Nguyen (Program Assistant) for their exceptional support in logistics and administrative support.

Lastly, the team expresses heartfelt gratitude to everyone who demonstrated courage and enthusiasm in sharing information and dedicating their time to participate in this study under challenging circumstances. We extend special recognition to the 1,200 people, supervisors, enumerators involved in the farmer phone call survey, and all stakeholders who participated in key informant interviews. Their invaluable contributions have greatly enriched this study.

# 1 EXECUTIVE SUMMARY

## Introduction

This report is a product of the World Bank's monitoring efforts in Myanmar and provides an in-depth look at the country's agricultural sector and food security status. This study examines intertwined challenges —falling crop yields, escalating food costs, deteriorating dietary habits, changing income sources, and shifting labor dynamics among farmers. In doing so, this analysis aims to illuminate the complex dynamics affecting households and communities nationwide. It offers essential insights for stakeholders seeking to address these pressing issues.

## Agriculture sector overview

Myanmar's ability to feed its population is under threat due to numerous challenges in its agriculture sector. Declining cultivation, rice dependency, and lack of crop variety complicate the situation. Issues like displacement, transport problems, and access to vital resources like fertilizer and labor exacerbate these problems.

## Inflation and food prices

A significant inflation increase has undermined households' ability to buy essential food items for the past 18 months, hampering agricultural investments. Constant high prices for crucial food commodities, notably rice and pulses, threaten the country's food security by impacting food access and cost. Exchange rate volatility and possible shocks, like crude oil price increases, worsen the critical situation.

## Agricultural trade

A troubling decline in rice exports, linked to policy interventions and trade disruptions, further imperils food security in Myanmar. Import restrictions on agricultural inputs add complexity, burdening farmers with soaring input costs. Addressing these challenges requires both supporting essential crop inputs and improving post-harvest processes such as processing, value addition, storage, packing, transportation, and marketing.

## Farm income and employment

A notable shift toward agriculture as the primary income source and a decline in wage employment reveals income vulnerabilities, especially among female-headed households. This shift poses major consequences for income steadiness in lean periods. The changing rural job patterns, increasing in the west but decreasing in the east, could disturb regional food production and accessibility.

## Risks and shocks

Myanmar's political instability has hindered progress in risk management and agricultural insurance, limiting farmers' access to vital financial resources and insurance coverage. Rising domestic migration, driven by employment opportunities and conflict-induced displacement, presents a complex challenge to food security, threatening community stability and well-being.

## Food security and coping strategies

Myanmar is grappling with deteriorating food security and nutrition, with a substantial percentage of households facing food insecurity. Access to essential food items remains challenging due to transportation issues, availability, affordability, logistical problems, and stock shortages. These challenges, along with rising prices and falling farm incomes, have led to the adoption of various food-related coping strategies, including reduced food expenditures and meal skipping.

## Diet and nutrition

The consumption of nutritious foods, particularly in rural areas, has declined, diminishing dietary diversity and raising concerns about nutrient deficiencies. Conflict-affected areas face even greater dietary limitations due to curfews, transport challenges, heightened insecurity, and reported crime incidents. Addressing this issue requires nutritional and capacity-building support for home gardens and small livestock production.

# Executive summary (Burmese translation)

# အစီရင်ခံစာ အနှစ်ချုပ်

## နိဒါန်း

ဤအစီရင်ခံစာသည် ကမ္ဘာ့ဘဏ်၏ မြန်မာနိုင်ငံဆိုင်ရာ သုတေသနလုပ်ငန်းစဉ်အရ ထုတ်ပြန်သည့် နိုင်ငံ၏ စိုက်ပျိုးရေးနှင့် စားနပ်ရိက္ခာဖူလုံရေး အခြေအနေ အသေးစိတ်လေ့လာမှု အစီရင်ခံစာဖြစ်ပါသည်။ ဤသုတေသနသည် လယ်သမားများ ကြုံတွေ့နေရသည့် သီးနှံအထွက်နှုန်းလျော့နည်းခြင်း၊ အစားအစာကုန်ကျစရိတ် ကြီးမြင့်လာခြင်း ၊ စားသုံးမှုပုံစံ ပျက်ယွင်း လာခြင်း၊ ဝင်ငွေရလမ်းများ ပြောင်းလဲလာခြင်း နှင့် လယ်ယာလုပ်သားရရှိနိုင်မှု အခြေအနေများ ပြောင်းလဲလာခြင်း စသည့် အခက်အခဲများကို လေ့လာသုံးသပ်ထားပါသည်။ ဤနည်းအားဖြင့် နိုင်ငံအနှံ့အပြားရှိ အိမ်ထောင်စုများနှင့် လူမှုအသိုင်းအဝိုင်းများကြား ရင်ဆိုင်ကြုံတွေ့နေရသည့် အခက်အခဲအကျပ်အတည်းများကို စုဆောင်းတင်ပြနိုင်ရန် ရည်ရွယ်သည်။ အဆိုပါအကျပ်အတည်းများကို ကိုင်တွယ်ဖြေရှင်းရန်ကြိုးစားနေကြသော သက်ဆိုင်ရာ အဖွဲ့အစည်းအားလုံးကို အထောက်အကူပြုရန် ရည်ရွယ်ပါသည်။

## စိုက်ပျိုးရေးကဏ္ဍ အခြေအနေ

မြန်မာနိုင်ငံအနေဖြင့် ယင်းပြည်သူများ၏ ဝမ်းစာဖူလုံရေးအတွက် ပံ့ပိုးနိုင်စွမ်းသည် စိုက်ပျိုးရေးကဏ္ဍတွင် ရင်ဆိုင်နေရသော အကျပ်အတည်းများ၏ ခြိမ်းခြောက်မှုကို ခံနေရသည်။ စိုက်ပျိုးဧက လျော့ကျလာခြင်း၊ ဆန်စပါးပေါ် မှီခိုမှုနှင့် ကောက်ပဲသီးနှံအမျိုးအစားနည်းပါးမှုတို့ကြောင့် အခြေအနေကို ပိုမို ဆိုးရွားစေသည်။ နေရပ်စွန့်ခွာ ထွက်ပြေးရခြင်း၊ သယ်ယူပို့ဆောင်ရေး အခက်အခဲများ၊ နှင့် ဓါတ်မြေဩဇာ နှင့် လယ်ယာလုပ်သားရရှိနိုင်မှု အခက်အခဲများ ကြောင့် ရင်ဆိုင်ကြုံတွေ့နေရသည့် အခက်အခဲများမှာ ပို၍သာ ဆိုးရွားလာသည်။

## ငွေကြေးဖောင်းပွခြင်းနှင့် အစားအစာ ဈေးနှုန်းများ

ပြီးခဲ့သည့် ၁၈ လတာ ကာလအတွင်း ငွေကြေးဖောင်းပွမှုနှုန်းလျှင်မြန်စွာ မြင့်တက်လာခြင်းကြောင့် အိမ်ထောင်စုများ၏ အခြေခံစားသောက်ကုန်များ ဝယ်ယူနိုင်စွမ်းကို ထိခိုက်စေကာ စိုက်ပျိုးရေးလုပ်ငန်း ရင်းနှီးမြှုပ်နှံမှုများအား နှေးကွေးသွားစေခဲ့သည်။ အရေးကြီးသည့် အခြေခံစားသောက်ကုန်ဈေးနှုန်းများ အထူးသဖြင့် ဆန်နှင့် ပဲမျိုးစုံ ဈေးနှုန်းများ ဆက်တိုက် ကြီးမြင့်လာနေခြင်းကလည်း အစားအစာရရှိနိုင်မှုနှင့် ကုန်ကျစရိတ်တို့အပေါ်

ဖိအားများဖြစ်ပေါ်၍ နိုင်ငံ၏ စားနပ်ရိက္ခာဖူလုံနိုင်စွမ်းကို ခြိမ်းခြောက်နေခဲ့သည်။ နိုင်ငံခြားငွေကြေးလဲလှယ်နှုန်း မတည်ငြိမ်ခြင်း နှင့် လောင်စာဆီဈေးနှုန်း မြင့်တက်ခြင်း ကဲ့သို့သော အကျပ်အတည်းများ ဖြစ်ပေါ်လာနိုင်သဖြင့် မူလကျပ်တည်းနေသည့် အခြေအနေကို ပိုမိုဆိုးရွား စေနိုင်သည်။

## စိုက်ပျိုးရေး ကုန်သွယ်မှု

မူဝါဒအပြောင်းအလဲများ နှင့် ကုန်သွယ်ရေး အခက်အခဲများကြောင့် ဆန်စပါးပြည်ပတင်ပို့မှု ကျဆင်းလာခြင်းသည်လည်း ပြည်တွင်းစားနပ်ရိက္ခာဖူလုံနိုင်မှုကို ပိုမိုထိခိုက်စေနိုင်သည်။ စိုက်ပျိုးရေး သွင်းအားစုများ တင်သွင်းမှုအပေါ် ကန့်သတ်ချက်များ ချမှတ်လိုက်ခြင်းကြောင့်လည်း သွင်းအားစုဈေးနှုန်းများ ကြီးမြင့်လာသည့်ဒဏ်ကို လယ်သမားများ ရင်ဆိုင်ခဲ့ကြရသည်။ အဆိုပါ အခက်အခဲများကို ကိုင်တွယ်ဖြေရှင်းမည်ဆိုပါက အခြေခံကောက်ပဲသီးနှံ သွင်းအားစုများအား ထောက်ပံ့ပေးခြင်းများ နှင့် ရိတ်သိမ်းပြီးနောက်ပိုင်းလုပ်ငန်းစဉ်များဥပမာ သီးနှံပြုပြင်ခြင်း၊ တန်ဖိုးမြှင့်ထုတ်ကုန် ထုတ်လုပ်ခြင်း၊ သိုလှောင်သိမ်းဆည်းခြင်း၊ ထုပ်ပိုးခြင်း၊ သယ်ယူပို့ဆောင်ခြင်းနှင့် ဈေးကွက်သို့တင်ပို့ခြင်း စသည်တို့အား ပိုမို တိုးတက်ကောင်းမွန်အောင်လုပ်ဆောင်ရန်လိုအပ်သည်။

## လယ်ယာဝင်ငွေနှင့် အလုပ်အကိုင်

စိုက်ပျိုးရေးသည် ပင်မဝင်ငွေလမ်းကြောင်းဖြစ်လာခြင်း၊ လုပ်အားခဝင်ငွေကျဆင်းလာခြင်းတို့သည် ဝင်ငွေလမ်းကြောင်းအတွက် အဟန့်အတားဖြစ်လာသည်။ အထူးသဖြင့် အမျိုးသမီးဦးဆောင်သည့် အိမ်ထောင်စုများသည် ပိုမိုအခက်အခဲတွေ့လာကြသည်။ ဤအပြောင်းအလဲသည် ခက်ခဲသည့်အချိန်ကာလအတွင်း ဝင်ငွေပုံမှန်ရရှိနိုင်မှုကို ကြီးစွာ သက်ရောက်မှုရှိသည်။ အနောက်ဖက်ဒေသ နိုင်ငံများတွင် အလုပ်အကိုင်များသည် ပေါများလျှက်ရှိသော်လည်း အရှေ့ဘက်ရှိဒေသများတွင် အလုပ်အကိုင် အခွင့်အလမ်းလျော့ကျလာနေခြင်း ကဲ့သို့သော ကျေးလက်အလုပ်အကိုင်ပုံစံများ ပြောင်းလဲလာ ခြင်းသည်လည်း ဒေသတွင်း အစားအစာထုတ်လုပ်နိုင်မှုနှင့် အစားအစာရရှိနိုင်မှု အပေါ် ဟန့်တားမှုများ ရှိနေပါသည်။

## ဘေးအန္တရာယ်နှင့် ထိခိုက်နိုင်ခြေများ

မြန်မာနိုင်ငံ၏ နိုင်ငံရေးမတည်ငြိမ်မှုသည် ဘေးအန္တရာယ်ထိခိုက်နိုင်ခြေလျှော့ချနိုင်ရေး ကြိုးပမ်းလုပ်ဆောင်မှုများနှင့် စိုက်ပျိုးရေးအတွက် အကာအကွယ်ပေးသော အာမခံလုပ်ငန်း တို့ကို နှောင့်နှေးစေသည်သာမက လယ်သမားများအနေဖြင့် ငွေကြေးအထောက်အပံ့ရယူနိုင် မှု နှင့် အာမခံအကာအကွယ် ရရှိနိုင်မှုတို့ကို အဟန့်အတားဖြစ်စေသည်။ အလုပ်အကိုင် အခွင့် အလမ်းများ နှင့် ပဋိပက္ခဖြစ်ပွားမှုအခြေအနေတို့ကြောင့် ပြည်တွင်းရွှေ့ပြောင်းနေထိုင်မှုများ မြင့်တက်လာခြင်းက စားနပ်ရိက္ခာဖူလုံမှုကို ခြိမ်းခြောက်လာသည့်အပြင် လူမှုအသိုင်းအဝိုင်း များကြားတွင် တည်ငြိမ်မှုနှင့် သာယာဝပြောမှုတို့ကိုပါ ထိခိုက်စေသည်။

## စားနပ်ရိက္ခာဖူလုံမှုနှင့် ရင်ဆိုင်ဖြေရှင်းသည့် နည်းလမ်းများ

မြန်မာ့အိမ်ထောင်စု ရာခိုင်နှုန်း အတော်များများသည် အစားအစာမလုံလောက်မှုနှင့် ရင်ဆိုင် နေရသည့်အတွက် မြန်မာနိုင်ငံသည် စားနပ်ရိက္ခာဖူလုံမှု နှင့် အာဟာရပြည့်ဝမှု ယိုယွင်းလာ ခြင်းကိုကြုံတွေ့နေရသည်။ သယ်ယူပို့ဆောင်ရေး အခက်အခဲများ၊ အစားအစာရရှိနိုင်မှု၊ ဝယ်ယူသုံးစွဲနိုင်မှု၊ ကုန်စည်ပို့ဆောင်ရေးအခက်အခဲများ နှင့် ကုန်စည် ပြတ်လပ်မှုများကြောင့် အခြေခံ စားသောက်ကုန်များ ရရှိနိုင်မှုအခက်အခဲများ ဆက်လက်တည်ရှိနေဆဲဖြစ်သည်။ အဆိုပါ စိန်ခေါ်မှုများသာမက ကုန်ဈေးနှုန်းကြီးမြင့်လာခြင်း နှင့် လယ်ယာမှဝင်ငွေကျဆင်း လာခြင်းတို့ကြောင့် အစားအသောက် ကုန်ကျစရိတ် ခြိုးခြံချွေတာရခြင်း ၊ အကြိမ်ရေ လျှော့ စားရခြင်း တို့အပါအဝင် အမျိုးမျိုးသော ဖြေရှင်းသည့်နည်းလမ်းများ အသုံးပြုလာကြရ သည်။

## အစားအစာနှင့် အာဟာရ

ကျေးလက်ဒေသများတွင် အာဟာရပြည့်ဝသောအစားအစာများစားသုံးမှုနှင့် အစားအစာ အမျိုးအစားစုံလင်စွာစားသောက်မှု လျှော့ကျလာခြင်းကလည်း အစာအာဟာရမပြည့်ဝမှုနှင့် ပ တ်သက်၍ စိုးရိမ်မှုများမြင့်တက်လာစေသည်။ ပဋိပက္ခဒဏ်သင့် ဒေသများတွင် အပြင်မ ထွက်ရအမိန့်များ၊ သယ်ယူပို့ဆောင်ရေးအခက်အခဲများ ၊ လုံခြုံရေးအခြေအနေဆိုးရွားလာမှု နှင့် ရာဇဝတ်မှုများမြင့်တက်လာခြင်းကလည်း စားနပ်ရိက္ခာအကျပ်အတည်းကိုပိုမိုကြီးမားစေ ပါသည်။ အဆိုပါ အခက်အခဲများကိုကိုင်တွယ်ဖြေရှင်းနိုင်ရန်အတွက် အာဟာရဆိုင်ရာ ဗဟုသုတများ၊ အိမ်တွင်းသီးပင်စားပင်နှင့် ဥယျာဉ်ခြံမြေ စိုက်ပျိုးခြင်းများ၊ နှင့် အသေးစား မွေးမြူရေးလုပ်ငန်းများအတွက် နည်းပညာပံ့ပိုးမှုများလည်း လိုအပ်ပါသည်။

# 2 OVERALL CONTEXT

## Box 1: A note on methodologies

This report is a product of the World Bank's monitoring efforts in Myanmar. It extensively examines the country's agricultural sector and food security, analyzing recent crises' impacts using diverse methods. These methods include a series of farmer phone surveys, reaching up to 1,200 respondents, key informant interviews with food vendors, fertilizer dealers, and rice millers, a desk review of agricultural news, official data, and policy documents from diverse sources, and satellite data analysis. Annex A provides further details on the data-gathering techniques.

**Global agricultural commodity and fertilizer prices, previously escalated due to Russia's invasion of Ukraine, are stabilizing.** Factors like slower economic growth, mild winters, and the redirection of commodity trade flows contribute to this stabilization. From quarter 4 (Q4) 2022 to quarter 1 (Q1) 2023, agricultural prices remained largely steady, marking a 14 percent decrease from their April 2022 peak, with a projected 7 percent decline in 2023 (World Bank 2023a). The initial extension of the Black Sea Grain Initiative temporarily helped foodstuff exports from Ukraine reach international markets, contributing to lower prices in world markets. For example, the FAO Food Price Index, which was at 140.6 in July 2022 when the initiative was introduced, decreased by 11.6 percent by June 2023; the FAO Cereal Price Index also declined by 14 percent over this period, both partially attributable to the Initiative boosting global supplies (UN 2023). However, in July 2023, Russia ended its participation in the initiative, launched a missile attack on the port of Odesa, and targeted key grain handling facilities in Ukraine, reigniting global grain uncertainties (IFPRI 2023a). Meanwhile, the World Bank's fertilizer price index fell 18 percent in 2022 but remains significantly above the 2015–19 average (World Bank 2023a), partly due to reduced supplies after the Ukraine crisis. Synthetic fertilizers derived from natural gas, such as urea, have recently seen a significant price decline, with a further 37 percent drop expected in 2023.

**Despite high fertilizer costs in Myanmar, the USDA predicts that recent attractive market prices will encourage farmers to increase rice planting in MY 2023/24 (USDA 2023a).** However, this increase may vary by state or region. While some farmers may feel encouraged to plant rice for 2023/24, the USDA predicts Myanmar's overall 2022/23 rice production will drop by over 3 percent from 2021/22. This drop will be due to lower yields overall and smaller planting areas, particularly in conflict areas such as Sagaing, Magway, Chin, Kayah, Kayin, and Rakhine (USDA 2023a).

**Though the global cultivated rice area is increasing, dwindling rice reserves in Asia are concerning.** Globally, the second half of 2023 will see increased cultivated rice areas and production volumes. Global rice production in 2023/24 is projected at a record 520.5 million milled tons, up 8.0 million tons from 2022/23 (USDA 2023b). Despite this increase, dwindling rice reserves in Asia raise concerns. The World Bank's Commodity Outlook for April 2023 cautions about constricted global rice supply conditions during the 2022/23 season (World Bank 2023a). The USDA's June Rice Outlook reports that 2023/2024 is the second consecutive year of declining global rice supplies. The outlook notes that several Asian countries face production declines due to reduced cultivated area (India), delayed monsoon seasons (India, Thailand, and Cambodia), water shortages and increased input costs (Thailand), and diet diversification (Japan and South Korea) (USDA 2023b). Supply disruptions are anticipated due to adverse climate events last year in China and Pakistan (USAID 2023a). The USDA's April 2023 projection indicates that global rice reserves will decrease by 6 percent compared to 2022, hitting their lowest levels since 2017/18, with China and India experiencing the most significant reductions.

# 3 FOOD SECURITY CHALLENGES AND IMPACTS

## 3.1 Production and Availability

### 3.1.1. Declining cultivated areas raise concerns about crop production, while incentives to rear livestock are failing

**The steady decline in cultivated areas and harvests raises concerns about crop production in Myanmar.** Analyses based on official data (ARD-SCG 2023), qualitative interviews, and World Bank-based remote-sensing estimates conclude that current crop cultivated area and production trends might weaken production capacity (see annex A, box A.1). In the last two years, cultivated crop area has declined in Myanmar. Since September 2021, an FAO-WFP survey (2023a) has repeatedly found that around 15–23 percent of crop producers (20 percent in January 2023) are planting smaller areas than a typical year; the planting of cash crops and rice is particularly impacted in conflict-affected areas (ARD-SCG 2023). Access to fertilizer remains a major problem for cereal producers, while access to labor hinders vegetable and fruit production (FAO-WFP 2023b). Recent estimates by USAID based on satellite imagery in 11 states/regions, concluded that between the 2021 and 2022 monsoons, the cultivated area for paddy dropped by 7 percent (USAID 2023b). Based on these calculations, IFPRI estimates that paddy yields dropped by 7.5 percent during the same period (IFPRI 2023b).

**The cumulative harvested cropland in April 2023 is one-third below the average from the last four years.** The FAO-WFP survey found that 40–55 percent of crop producers (52.3 percent in January 2023) keep reporting lower harvests than a typical year (FAO-WFP 2023a). Since 2020, the World Bank has been conducting Community Welfare Monitoring Surveys. Qualitative insights from this survey, particularly the March 2023 round, found that farmers are planting less acreage (World Bank 2023b).

**As of May 2023, the WBFS reported that only 68 percent of farmers conducted harvesting during the 2023 dry season.** This represents a significant decline compared to previous seasons (81 percent in May 2022 and 96 percent in December 2021). These findings align with estimates from the World Bank Data Lab, which analyzed vegetation conditions and phenology in Myanmar's cropland areas (See annex A, box A.1). These estimates reveal that the cumulative harvested cropland in April 2023 is approximately 32 percent below the April averages from 2019–22 (figure 1). Cyclone Mocha (box 2) also impacted a significant percentage of cropland in some states and regions.

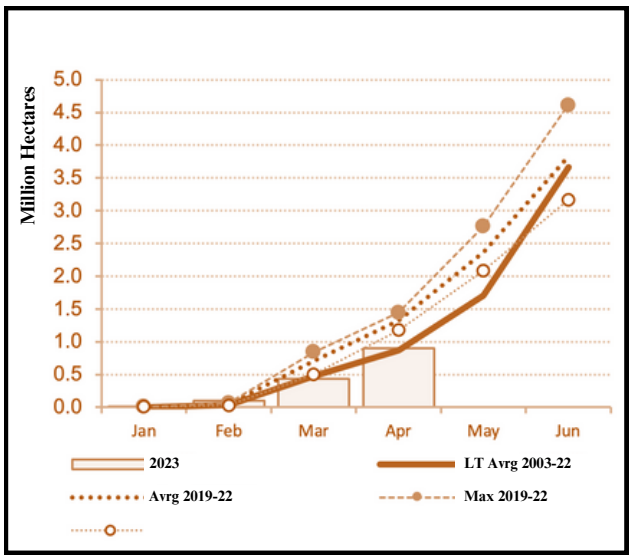



Figure 1: Comparative progress in cumulative harvested cropland in Myanmar until April 2023
*Source:* World Bank estimates.
*Note:* See annex A, box A.1 for further satellite data information.

## Box 2: Cyclone Mocha

**Early estimates indicate that Cyclone Mocha could have damaged between 2.2–2.7 percent of Myanmar's total cropland.** The FAO estimated that Mocha potentially impacted over 326,800 hectares of cropland. Using estimates calculated by the CSO and the World Bank Data Lab, [1] the damaged land could range between 2.2–2.7 percent of the total cropland (table 1). The most affected areas are Rakhine State, Sagaing Region, and Ayeyarwady.

**Extensive flooding, damaging winds, top soil erosion in crop fields, and infrastructure all impacted agriculture and fisheries (FAO-WFP 2023b).** Crop and infrastructure damage was widespread, including fencing, warehouses, livestock housing, machinery, and tools. This will reduce production capacity, hinder planting, harvesting, and transportation, and create storage and livestock care challenges. Fisheries, crucial for local diets and livelihoods, were hit hard in Rakhine. Mocha also caused extensive damage in Sittwe's coastal areas, with over 50 percent of fishing equipment destroyed, reducing production capacity (FAO-WFP 2023b).

[1] Using remote sensing techniques to analyze vegetation conditions.

Table 1: Cyclone Mocha: Potentially impacted cropland estimates

| | Potentially Impacted Crop Land (Ha) | Net Area Sown (Ha) | Impacted Cropland (% Sown Area) | Cropland (Ha) | Impacted Cropland (% Cropland) |
|---|---|---|---|---|---|
| **Kachin State** | 278 | 315,570 | 0.09 | 407,764 | 0.07 |
| **Kayah State** | 8 | 62,410 | 0.01 | 115,221 | 0.01 |
| **Kayin State** | 738 | 456,553 | 0.16 | 494,102 | 0.15 |
| **Chin State** | 17 | 54,108 | 0.03 | 27,570 | 0.06 |
| **Sagaing Region** | 143,551 | 1,860,722 | 7.71 | 2,186,999 | 6.56 |
| **Tanintharyi Region** | 1,099 | 439,129 | 0.25 | 293,836 | 0.37 |
| **Bago Region** | 1,266 | 1,341,059 | 0.09 | 1,593,067 | 0.08 |
| **Magway Region** | 2,780 | 1,237,023 | 0.22 | 1,594,458 | 0.17 |
| **Mandalay Region** | 4,928 | 1,309,022 | 0.38 | 1,656,944 | 0.3 |
| **Mon State** | 7,522 | 583,606 | 1.29 | 507,248 | 1.48 |
| **Rakhine State** | 147,319 | 459,608 | 32.05 | 676,580 | 21.77 |
| **Yangon Region** | 3,443 | 528,177 | 0.65 | 686,328 | 0.5 |
| **Shan State** | 871 | 1,303,540 | 0.07 | 2,456,989 | 0.04 |
| **Ayeyarwady Region** | 12,947 | 1,947,187 | 0.66 | 2,129,000 | 0.61 |
| **Naypyitaw** | 48 | 129,997 | 0.04 | 189,992 | 0.03 |
| **National** | 326,815 | 12,027,713 | 2.72 | 15,016,097 | 2.18 |

*Source:* Data on potentially impacted cropland from FAO-DIEM. Data on the net sown area from CSO. Data on Cropland from the World Bank Data Lab.
*Note:* Ha, hectares.

**Livestock prices are still low, and feed affordability and pasture access limit production.** Livestock remains the backbone of the rural economy, a critical source of animal source proteins, and the main pillar of food security for rural households. Despite some improvements in disease control and market access, producers in rural areas, especially swine and poultry producers, have seen significant reductions in herd/flock size. While frequent distressed animal sales further contribute to low prices (ARD-SCG 2023), feed affordability and access to pastures are still the key constraints in livestock production. Accordingly, incentives to rear livestock seem to be failing. According to the FAO-WFP survey (January 2023), 47 percent of livestock producers reported smaller herds/flocks than last year, with swine (55 percent) and poultry (50 percent) raisers being the most affected (IFPRI 2023c). Farm households also had notable shifts in livestock ownership, dropping from 70 percent in May 2022 to 58 percent in May 2023 (World Bank 2023c).[2] This decline coincides with shifts in the types of animals raised, including fewer cows and a notable increase in poultry, likely due to poultry's cost-effectiveness, rapid reproduction, and high demand.[3]

[2] However, this may be due to the increase in sample size in the 2023 round.

[3] In May 2023, the average number of cows owned per household slightly decreased to 2.8, compared to 2.9 in May 2022 and 3.3 in December 2021. The average number of poultry owned per household increased to over 80 animals in May 2023, compared to 26.4 in May 2022 and 40 in December 2021 (World Bank 2023c).

### 3.1.2. High international prices and below-average harvests increase domestic food prices, eroding households' purchasing power

**Current WFP data shows that prices for staple food commodities have steadily risen in the short and medium terms (table 2).** Among these commodities, rice and pulse prices have continued to rise over the short and long term. The FAO All Rice Price Index was at 121.2 points in March 2023, a 3.2 percent decrease from February due to ongoing or imminent harvests in prominent Asian exporting countries; yet it was still 17.6 percent higher than in March 2-022 (FAO 2023a). The latest FAO-FPMA analysis from mid-May 2023 indicates that domestic prices of Emata rice, a popular variety, rose again in April and reached record highs (FAO 2023b). March 2023 saw palm oil prices rising, yet they were still 16 percent less than September 2022, possibly due to a stable foreign exchange rate since late 2022. Egg prices dropped in March 2023 compared to the previous month but remained above the medium-term average. Prices for tomatoes and onions, crucial ingredients in Myanmar cuisine, fell in the short and medium term (table 2).

Table 2: Selected commodity price variation (%) at points across 2022–23

| Commodity | Price Variation (%) | | |
|---|---|---|---|
| | 1 Month (Feb 2023) | 3 Months (Dec 2022) | 6 Months (Sept 2022) |
| Rice | 10 | 28 | 29 |
| Palm Oil | 7 | 10 | 16 |
| Pulses | 4 | 8 | 9 |
| Eggs | 2 | 5 | 12 |
| Tomatoes | 15 | 24 | 28 |
| Onions | 17 | 42 | 36 |

*Source:* World Bank staff calculations using WFP data.

**World Bank analysis shows inflation increased sharply over the past year and a half, eroding households' food purchasing power and weighing on farming investment decisions (World Bank 2023d).** While food and fuel price inflation appear to have eased more recently, a single shock, such as an increase in crude oil prices, can significantly impact inflation and price variation. World Bank analysis indicates that exchange rate depreciation contributes to higher domestic inflation.

A single standard deviation (SD) shock to the exchange rate gradually increases inflation, reaching a peak of 0.50 percentage points in the fifth month (World Bank 2023d).

Exchange rate depreciation affects inflation directly via higher costs for imported consumer goods and indirectly via increased costs of intermediate goods. Negative shocks also influence inflation in oil or food prices. According to World Bank analysis, a one SD shock, like a unit increase in crude oil or global food prices, results in a 0.19 percent inflation rise within two months. This highlights the importance of monetary policy, aggregate demand, exchange rates, and global commodity prices, especially crude oil and food, in explaining price fluctuations in Myanmar.

**High rice, pulses, and palm oil prices, major traded agricultural commodities, may be linked to export price hikes and trading partner decisions.** Record rice prices were driven by seasonal pressures due to below-average harvests in 2021 and 2022, increased agricultural input and transport costs, heightened violence in 2023 disrupting markets, and uncertainties surrounding the 2023 main rice crop due to population displacement (FAO 2023b). As of May 2023, domestic retail prices are still rising due to concerns about a diminished monsoon season rice harvest (GNLM 2023a). Similarly, bean and pulse export prices to India have risen, driven by increasing demand in India. This has partially contributed to higher domestic prices, aided by low stocks and declining yields of domestic pulses (CNI 2023a). Edible oils—primarily palm oil—are among Myanmar's most significant import categories (USAID 2023c). The global palm oil market was again put on alert after Indonesia announced export restrictions in late December 2022.[4] To guarantee the availability and affordability of domestic supplies, the Indonesian government tightened palm oil exports in early January 2023.[5] Starting from February 2023, a larger proportion of palm oil was mandated for use in biodiesel blends. Nonetheless, Myanmar's domestic palm oil price has surged significantly above the reference price in recent weeks.[6] It is unclear whether this represents a short-term disruption in the palm oil market or is the start of a longer-term trend.[7]

[4] Following the significant increase in the international palm oil prices in response to the invasion of Ukraine in early 2022, by November 2022 the price had fallen to US$946 per ton, reflected in declining market prices in Myanmar in December 2022.

[5] Indonesia's exporters were to be permitted to ship no more than six times their domestic sales volumes (prior to that, the limit was eight times).

[6] Prices rose to 6,000–7,000 MMK per viss (roughly 1.63 kilograms), or about US$1,400–1,600 per metric ton. These prices are substantially above the World Bank's February 2023 international reference price of US$950 per metric ton and the reference price set by the Edible Oil Import Storage and Distribution Supervision Committee, ranging from 4,470–4,600 MMK per viss (around US$1,070 per metric ton).

[7] While some local news reports suggested that domestic shortages are in effect, the official newspaper Golden New Light of Myanmar kept reporting shipments of palm oil entering local ports in early March 2023.

**In Q1 2023, essential food prices varied significantly by area. Hilly regions had prices nearly double those in lowland areas (see annex B, figure B.3).** Low-quality rice prices ranged from 1,100 MMK per kilogram in Tanintharyi to 1,566 MMK per kilogram in Shan South. Due to conflicts, Sagaing, a major rice producer, had the second-highest prices. Imported palm oil prices ranged from 3,800–8,126 MMK per liter, with Kayin having the lowest prices due to its proximity to Thailand. Conflict escalation and higher logistical costs, primarily due to increased fuel prices, contributed to regional food price differences; food costs in northern Myanmar were nearly double those of other regions.

**Food costs are outpacing wages, impacting food affordability for vulnerable wage earners, particularly in rural areas.** An IFPRI report analyzed the affordability of healthy and common diets. Over 2022, the costs of a common and a healthy diet[8] increased by 50 and 51 percent, respectively (IFPRI 2023d). This increase was particularly pronounced in rural areas and regions like the Dry Zone and coastal areas, which conflicts impacted above the national average. While urban construction wages and rural agricultural wages grew 6 and 12 percent over 2022, urban and rural healthy diet expenses surged by 41 percent and 55 percent, respectively. As such, the affordability of a healthy diet relative to daily construction and agricultural wages declined by 25 percent and 28 percent, respectively (IFPRI 2023d).

[8] Common diet basket: Average regional consumed foods quantities are representative of vendor survey foods as reported by households surveyed in the 2015 Myanmar Poverty and Living Conditions Survey (MPLCS). Healthy diet basket: Average regional quantities consumed of the same foods aligned with a recommended healthy diet. Both baskets are specified in terms of calories and attain the energy needs of a representative moderately active adult woman in Myanmar (2,195 calories) (IFPRI 2023c).

## 3.1.3. Policy interventions and administrative reforms affect agricultural export performance

**After initially rising in late 2022, Myanmar's exports have been declining since February 2023.** Agricultural exports from Jan-May 2023 were 7 percent lower than the same period in 2022 (figure 9) (World Bank 2023d). Myanmar Rice Federation (MRF) data shows Myanmar exported about 2.2 million tons of rice in FY 2023 (ending March 2023), exceeding its target of 2 million tons (GNLM 2023b). This drop is partly attributed to seasonal factors and stabilizing global rice prices. Myanmar aims to boost its rice exports by 10 percent annually to compensate for India's restrictions on rice exports (USAID 2023d). India's ban on broken rice exports and 20 percent duty on white rice exports are expected to continue limiting rice trade volumes, keeping global rice prices high. Figure 2 presents Myanmar's agricultural export trends, while annex B, figure B.2 presents selected commodities' trends, variations, and volatilities.

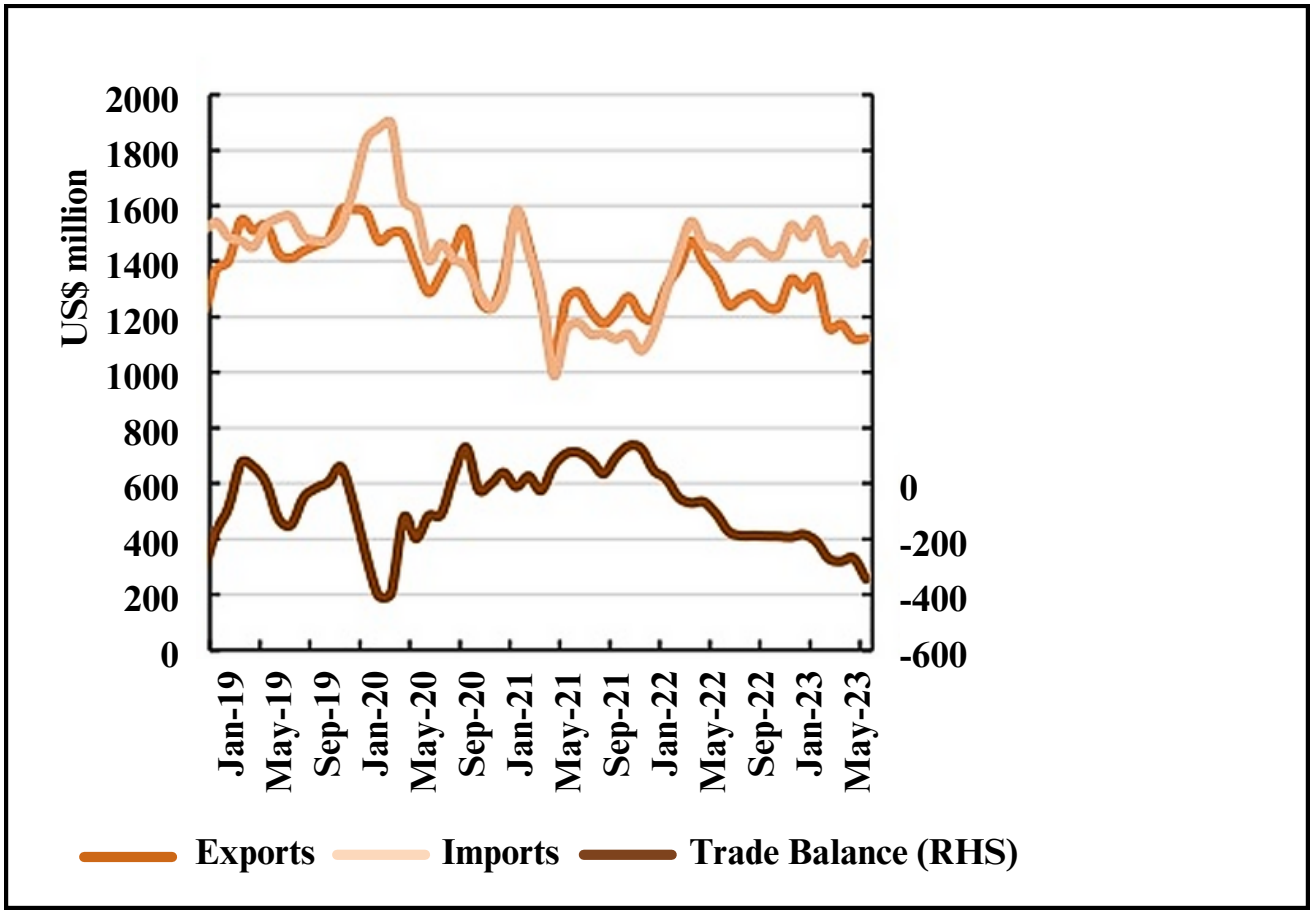



Figure 2: Myanmar's agricultural export trends

**Policy interventions appeared to impact the momentum of rice exports in February and March 2023.** The easing of border disruptions with China partly contributed to the temporary increase in rice exports in early 2023. China became the largest rice buyer in January and February 2023 (Mizzima News 2023a; 2023b), surpassing Bangladesh, but exports have since decreased due to several other factors. Seasonal factors and the moderating global rice price have reduced exports. Reports also suggest that the foreign exchange surrender requirement for rice exports through the land border, effective from March 2023,[9] also impacted rice exports. Similarly, the suspension of export licenses for rice in February 2023 (CNI 2023b) almost halted land-border rice exports to China in March 2023. Anecdotally, due to the policy interventions, the average number of daily trucks for rice exports to China through the Muse-Ruili border (Mizzima News 2023b) declined from about 50 before March 1 to about 10 after March 10.

**Bean and pulse export volume steadily increased from October 2022 to March 2023, roughly 19 percent higher than the same period last year.** This was partially due to growing demand from India and an MOU between Myanmar and India (GNLM 2023c)for black gram and pigeon pea, signed in June 2022 and lasting until FY 2026. With export prices to India increasing, domestic prices for beans and pulses have also risen since late February (CNI 2023b), supported by low stocks in the domestic market and declining yields. Despite higher prices, farmers' profitability remained impacted by increased labor and other input costs.

**In volume terms, Myanmar's corn exports performed well between October 2022 and February 2023 (USDA 2023a).** This is mainly attributable to increased exports in the December 2022 quarter compared to the same period in 2021. Despite the corn exports trending upward between October 2022 and February 2023, exports were much lower than in February 2021 and 2022. Anecdotally, delayed transport time due to more checkpoints along the road connecting Yangon and Myawaddy (CNI 2023c)lowered corn exports in February 2023, the first month for the period when Thailand imposes zero import tariff for corn. With the export price of corn declining (CNI 2023d) and conflict escalating along the Myanmar-Thailand border, corn exports in March 2023 were likely lower than the previous year. In addition, a decline in global corn prices, increased logistics costs, and disruptions could also impact corn exports. Also, corn exports to China by sea were halted (CNI 2023c) between January and March 2023 due to higher Myanmar's corn price and quality issues.

[9] Since February 23, 2023, exporters are required to convert 65 percent of their export earnings into MMK at the reference exchange rate set by the Central Bank of Myanmar (CBM), which continues to be lower than the market exchange rate. Traders at the border confirmed that they are losing about 10,000 NNK (~US$5) per bag (50 kilograms) due to this rule (USDA 2023a).

**All agricultural export items are subject to export licenses, and the government introduced further restrictive administrative procedures.** Since mid-January 2023, the SAC-led Ministry of Commerce (MOC) has significantly expanded the number of products requiring export licenses. The MOC-issued newsletter No. 1 (January 13, 2023) addressed reopening the Muse border crossing with China, providing truck requirements, e.g., a 6-wheel, 16-ton maximum.

**All export commodities will be allowed except for crops, fruits, fishery products, and mining and mineral products (USAID 2023e).** From February 2023, cargo trucks exporting goods through the land border required cargo transport permission (MOC 2023). To obtain permission, traders must first be granted export licenses through the Myanmar TradeNet 2.0 system. Traders must then register details of cargo trucks at the Vehicle Monitoring System. The MOC issued newsletter No. 6 (March 22, 2023) announced all export items requiring licenses, effective April 1, 2023. This will increase trade time for exporters and further delay agricultural exports.

**Further import restrictions were introduced in late 2022, impacting 2023 trade.** Effective November 1, 2022, payments for imports through land borders are only allowed via bank transactions. Importers must acquire foreign exchange through export earnings or other incomes—such as salary and remittances of Myanmar nationals working abroad—via banks to pay for the imports (MOC 2022). Myanmar's reliance on agricultural imports could delay necessary inputs, exacerbating farmers' struggle with rising input costs.

## 3.2 Affordability and Shocks

### 3.2.1. Most farm households report lower incomes, while remittances gain importance as income source

**While agricultural activity remains the main income source for farm households, remittances have gained importance.** Wage employment has fallen slightly. In May 2023, 96 percent of farming households relied on family farming, livestock, or fishing for their primary income, an increase on previous rounds (table 3) (World Bank 2023c). Overall findings show a shift towards greater agricultural reliance, increased remittances, a slight wage employment decrease, and stability in non-farm family businesses as primary income sources. The findings suggest income source diversification and adaptation among farming households. The WBFS reveals that only 56 percent of farm households have at least one member working for wages, lower than in previous rounds (World Bank 2023c). Receiving remittances contributes to household resilience, as remittance-receiving households are less likely to experience hunger or have poor dietary diversity at the household, adult, and child levels (IFPRI 2023d). In May 2023, the WBFS found that approximately 25 percent of farm households had members working away from home, consistent with May 2022 and December 2021, indicating a stable trend in households with members employed outside their home location. This indicates less reliance on wage-based work opportunities, which could seriously impact securing income during the lean period. This change is particularly critical in female-headed households, where the drop in wage employment (30 percent) was more sizable than in previous rounds.

Table 3: Farm households' main income sources since the beginning of 2022 (%)

| Income Sources | Total (%) | | | Male (%) | | | Female (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Dec '21 | Mar '22 | Mar '23 | Dec '21 | Mar'22 | Mar '23 | Dec '21 | Mar '22 | Mar '23 |
| Family farming, livestock, or fishing | 93 | 83 | 96 | 96 | 84 | 97 | 91 | 83 | 94 |
| Wage employment of household members | 32 | 31 | 29 | 28 | 28 | 28 | 36 | 35 | 30 |
| Non-farm family business, including family business | 20 | 21 | 20 | 19 | 24 | 19 | 22 | 18 | 20 |
| Remittances, domestic and foreign | 6 | 6 | 20 | 6 | 5 | 18 | 7 | 6 | 21 |
| Casual work (farming) | 1 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 2 |
| Others | 1 | 3 | 2 | 1 | 4 | 1 | 0 | 4 | 3 |

*Source:* World Bank estimates using WBF5 data.

**The recent Myanmar employment report (World Bank 2023b) highlights agriculture's role as a buffer against declining employment in western Myanmar.** From 2017–22, rural employment growth surpassed urban levels in the west, while the opposite trend occurred in the east. In 2022, agriculture expanded in the west and contracted in the east. Western states, especially Sagaing and Chin, saw significant agricultural employment increases and declining manufacturing, mining, construction, and services jobs. In contrast, eastern states and regions—Kachin, Shan, Kayah, and Kayin—experienced a drop in agricultural employment as manufacturing, mining, and construction sector jobs expanded. The workforce shifted from agriculture and manufacturing to construction, mining, and retail services. Male employment transitioned away from agriculture to mining, construction, and retail. The shift away from agriculture was even more pronounced for female workers, dropping by 10 percentage points from 2017–22. Box 3 presents additional details on agricultural employment and wages.

## Box 3: Agricultural employment and wages in Myanmar

**Semi-subsistence farming households mainly produce food for self-consumption and sell the surplus for extra income.** They usually have small landholdings and limited access to inputs, credit, and markets. In contrast, agricultural wage employment involves working for wages on others' farms or in non-agricultural sectors.

Wage employment is often more formal, providing regular income, but may be seasonal or temporary. Wage workers may have better access to inputs, credit, and markets but might face lower wages, poor working conditions, and job insecurity. Subsistence farming and agricultural wage employment are crucial income sources in Myanmar, and enhancing agricultural productivity can benefit both groups.

The World Bank's MSPS conducts surveys to periodically monitor localized shocks in Myanmar, quantifying their impact on household well-being based on location and other factors.[10]

A recently released report utilizes MSPS employment indicators to analyze labor market outcomes. The trends in agricultural employment derived from the MSPS can be summarized as follows:

**a) Over five years, agricultural employment fell by 6.6 percent, with steeper declines among females.** In 2022, educated youth and civil servants, including those in the civil disobedience movement, turned to agriculture due to loss of income and restricted movement. MSPS data showed a growing share of educated workers in agriculture, indicating a misallocation of highly skilled labor to a low-productivity sector.

**b) In 2017, 25 percent of agricultural workers had regular salaried jobs; this fell by 15 percent by 2022, significantly increasing informal employment.** Informal workers lack formal arrangements and protections, working as self-employed, casual laborers, or informally. Those maintaining salaried positions preserved their wages, with some high earners even experiencing modest real wage increases.

**c) Between 2017–22, agricultural employment declined in northern and eastern border regions but rose in high-altitude townships, likely due to rising poppy cultivation at higher altitudes.** In 2022, poppy cultivation reached historic levels in Myanmar and was financially rewarding, as these townships offered significantly higher average wages than other regions.
d) Rising input costs and inflation led some farmers to reduce cultivated areas, shift to lower-input crops, or use family labor, causing a decline in agriculture's MSPS workforce share. Coping strategies reduced demand for casual labor, with crop loss due to pests and floods exacerbating the issue.

[10] The first round of MSPS, carried out from November 2022 to March 2023, collected data on household demographics, education, employment, exposure to adversity, coping strategies, consumption, and prices. With a large sample size exceeding 8,500 households drawn from all fifteen states and regions, covering approximately 95 percent of Myanmar's population, the MSPS ensures proportional representation of almost every demographic group in the country.

**e) Travel restrictions and military checkpoints, especially in conflict zones, hindered labor mobility and affected the agricultural marketing network.** Market closures lowered livestock prices in Magway.

**f) Rural displacement impacted agriculture employment and marketing strategies, particularly in Sagaing, Magway, and Kayin.** Kayah was not included in the study. Sagaing farmers sold crops immediately, fearing attacks or forced displacement.

**As of May 2023, farm households in Myanmar experienced a net decrease in income compared to the previous season (figure 3) (World Bank 2023c).** While an improvement on earlier rounds —64 and 48 percent in December 2021 and May 2022, respectively—this finding indicates that most farm households had reduced income.

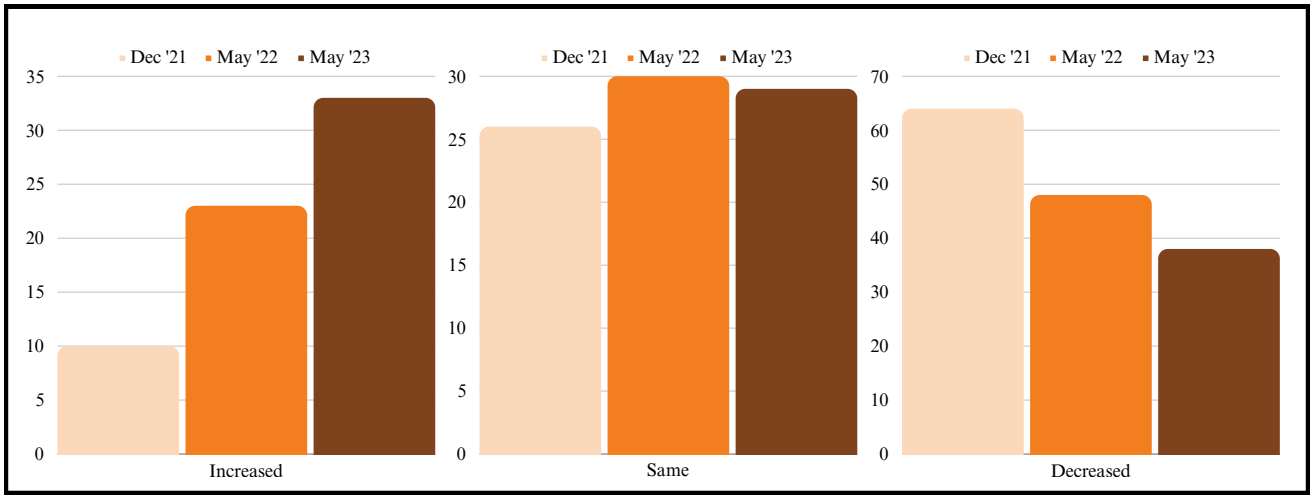



Figure 3: Farm households reporting income changes (%)
*Source:* World Bank estimates using WBFS data.

**Over the past year, high fertilizer prices and lower crop yields are the primary drivers of change in farm income (figure 4).** According to the May 2023 WBFS, 42 percent of respondents (slightly fewer than in earlier rounds) reported fertilizer prices as the main factor behind reduced income, followed by 37 percent who cited low yields, higher than in previous rounds. Other less significant factors included high cultivation costs (26 percent), rising fuel prices (22 percent), elevated labor costs (16 percent), and pest issues (13 percent), all showing relatively consistent results across survey rounds. Factors like adverse weather conditions, low demand or market prices, natural disasters, and armed conflicts received considerably less attention for their impact on income levels (World Bank 2023c).

**A recent World Bank report on overall employment in Myanmar (2023d) confirms widespread income and wage losses.** Over 70 percent of households in every state and region resorted to selling assets, depleting savings, or borrowing to manage losses. Kayah stands out as the most affected region, with 60 percent of households experiencing income losses exceeding 20 percent in 2022 and the largest decline in average wages since 2017 across all regions. To cope with such high losses, over 90 percent of households in Kayah resorted to selling assets, depleting savings, or borrowing from non-family members. This high adversity in Kayah is expected, given that UNHCR estimates that about a third of its population comprises IDPs. Even in Ayeyarwady, where average wage losses were minimal, and 62 percent of households reported no change or a small increase in incomes over the past year (the highest across all states), 74 percent of households had to reduce expenditures in agricultural inputs, health, education, or food (World Bank 2023b). In states like Kayin, Tanintharyi, and Rakhine, households were more likely to reduce expenditures than sell assets, borrow, or deplete savings to cope with earning shocks. Long-term migration—measured as a member's absence from the household unit for over 6 months—was used as a coping strategy by a limited number of households (World Bank 2023b).

**Among households reporting increased farm income, 79 percent attributed it to high demand and favorable market prices.** High yields were a relevant factor for 33 percent of households. However, their importance has decreased since May 2022 (39 percent) and December 2021 (44 percent). Other factors, such as market access, higher livestock prices, lower labor costs, and livestock multiplication, were relevant to fewer respondents. These findings emphasize the crucial role of market conditions and pricing in farm income, highlighting the need for farmers to adapt to shifting market dynamics and leverage favorable prices.

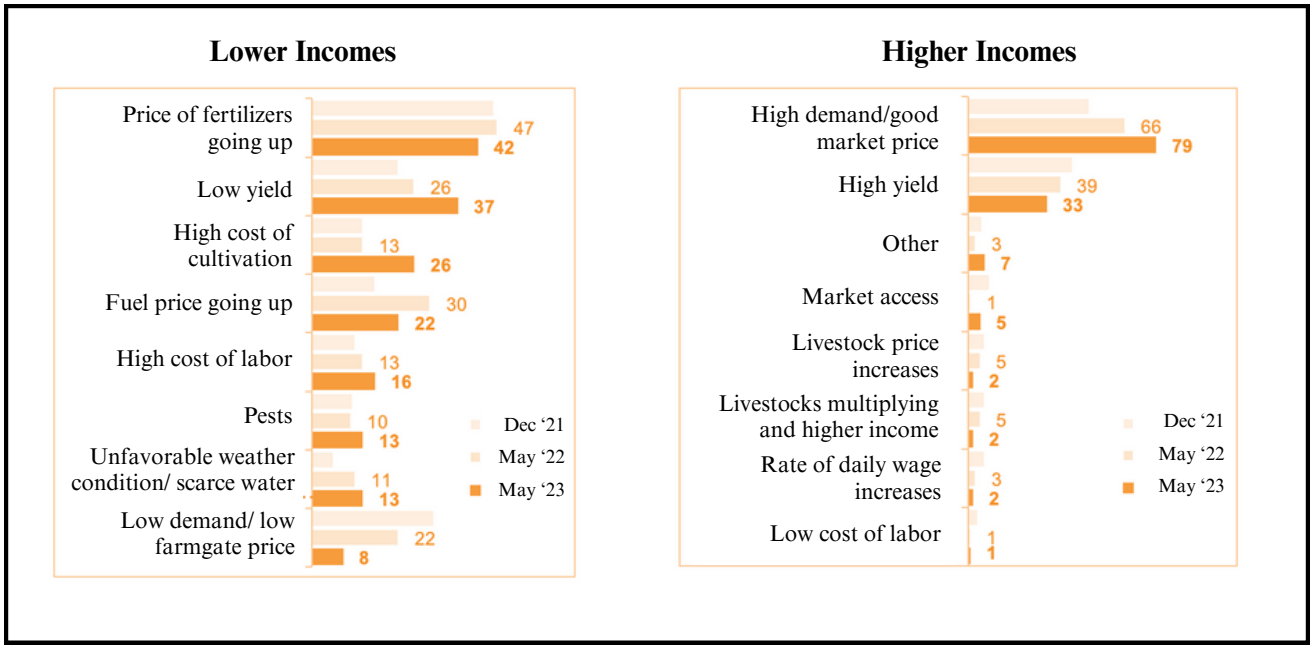



Figure 4: Factors in income changes (% of households reporting lower and higher incomes)
*Source:* World Bank estimates using WBFS data.

**While some farmers express a growing optimism regarding income expectations, around one-third of farmers' expectations remain negative.** In May 2023, the largest proportion of respondents (37 percent) expect higher farm incomes in the next 12 months (World Bank 2023c). This percentage aligns with the trend observed in earlier rounds: 30 percent in May 2022 and 25 percent in December 2021. Moreover, 35 percent of respondents expect the same farm income in the next 12 months, a slightly lower proportion than in May 2022 (40 percent) and December 2021 (49 percent), reflecting a shift in expectations towards increased income. Farmers' overall income optimism is likely due to a large share of them (62 percent) having either an increased or stable income (figure 3). Improved access to cash and increased remittances may also bolster income optimism. In May 2023, while most WBFS respondents expect higher farm incomes, 28 percent expect a decrease in the next 12 months. This percentage remained relatively stable compared to previous rounds, indicating a consistent concern among farmers about the potential for income decline.

**Farmers now have improved access to cash due to relaxed withdrawal restrictions.** In May 2023, the WBFS found that some 81 percent of farm households could access cash when needed, a substantial increase compared to previous findings: 53 percent in May 2022 and 50 percent in December 2021 (World Bank 2023c). These findings reflect the Central Bank of Myanmar's (CBM) restrictions on cash withdrawals, which occurred in March 2021 but were eased in April 2022, shortly before the May 2022 survey round (ElevenMyanmar 2022).

**Agricultural activities face various risks, yet there has been limited progress on risk management and agricultural insurance since the latest military takeover.** In early 2018, Myanmar's Ministry of Planning and Finance approved the country's first-ever crop insurance program for local farmers (Oxford Business Group 2019), led by Global World Insurance. The program covered paddy, maize, and sesame crops and aimed to protect farmers from natural disaster-related losses, enhance agricultural resilience, boost productivity, and increase income. However, the February 2021 coup significantly disrupted efforts related to risk management initiatives, agricultural insurance, and MFIs.

**Through agricultural loans, MFIs have been crucial in managing risk for Myanmar's farmers, especially women.** However, the current political instability and conflict have created a challenging environment for MFIs to operate effectively (MMFA 2022). This situation has eroded investor confidence, reduced foreign investments, and strained the resources and capacity of MFIs to serve their clients, particularly those in rural and marginalized areas. Farmers may struggle to recover from losses without sufficient insurance coverage, with long-term consequences for their livelihoods and agricultural productivity, ultimately affecting food availability and affordability (MMFA 2022).

### 3.2.2. Farm households report less frequent shocks, but recurrent impacts strain available assets

**Though the situation is still bleak, in January 2023, fewer households in Myanmar were affected by shocks than in previous survey rounds.** However, an increasing number of rural farming households specifically report the recurrent impacts of shocks on health, farming, and livelihoods. Analysis from FAO-WFP shows that, compared to the previous rounds, in January 2023, a smaller proportion of overall households was affected by shocks (FAO-WFP 2023a). Progressively, a lower proportion of respondents are impacted by the usual shocks: higher food and fuel prices, sickness or death in the family, violence/conflict. However, the frequency of shocks remains place-dependent (FAO-WFP 2023a). Being affected by economic and idiosyncratic shocks was cited by the poorest strata (more vulnerable to economic shocks).[11] Rural households specifically are more affected by all shocks. In May 2023, the WBFS revealed that approximately 33 percent of rural farming households faced additional shocks over the past year. This represents an increase compared to May 2022 (25 percent) and December 2021 (21 percent) (World Bank 2023c). Commonly reported shocks included rising food prices (50 percent), illness, injury, or death of an income-earning household member (32 percent), increased input prices (27 percent), and the direct impact of the new political situation (19 percent). These persistent shocks underscore household vulnerability to health-related crises, which can disrupt income sources and overall well-being. Higher agricultural input costs can also affect farming expenses and profitability (figure 5).

**Despite improvement over the previous year, a quarter of farm households still face pervasive security challenges within their villages, which impacts income.** In May 2023, 25 percent of respondents reported conflict impacting their livelihood in the previous 12 months, a decrease from the 33 percent in May 2022 but still signifying the ongoing impact of conflict on livelihoods (World Bank 2023c). Some 19 percent could continue their livelihoods almost as they were in the previous 12 months, an improvement from 16 percent in May 2022. While slightly better than in 2022, 10 percent of respondents in May 2023 had their livelihoods completely depleted due to the conflict, depending on other income sources. For the majority (46 percent) in May 2023, conflict did not affect their livelihoods, an improvement from 2022 (37 percent).

[11] More than 60 percent of those with unprotected sources of drinking water mentioned a shock, and only 33 percent of people with higher education or living in apartment/condo.

**Farmers still have to liquidate their assets to purchase fertilizers, buy food, acquire agricultural equipment or fuel, cover labor costs, and settle debts.** While the overall number of farms needing cash has decreased compared to previous surveys, those liquidating assets increasingly need to do so to buy fertilizers and pay for labor costs (see section 3.3 for details on the shifting agri-labor market) (World Bank 2023c).

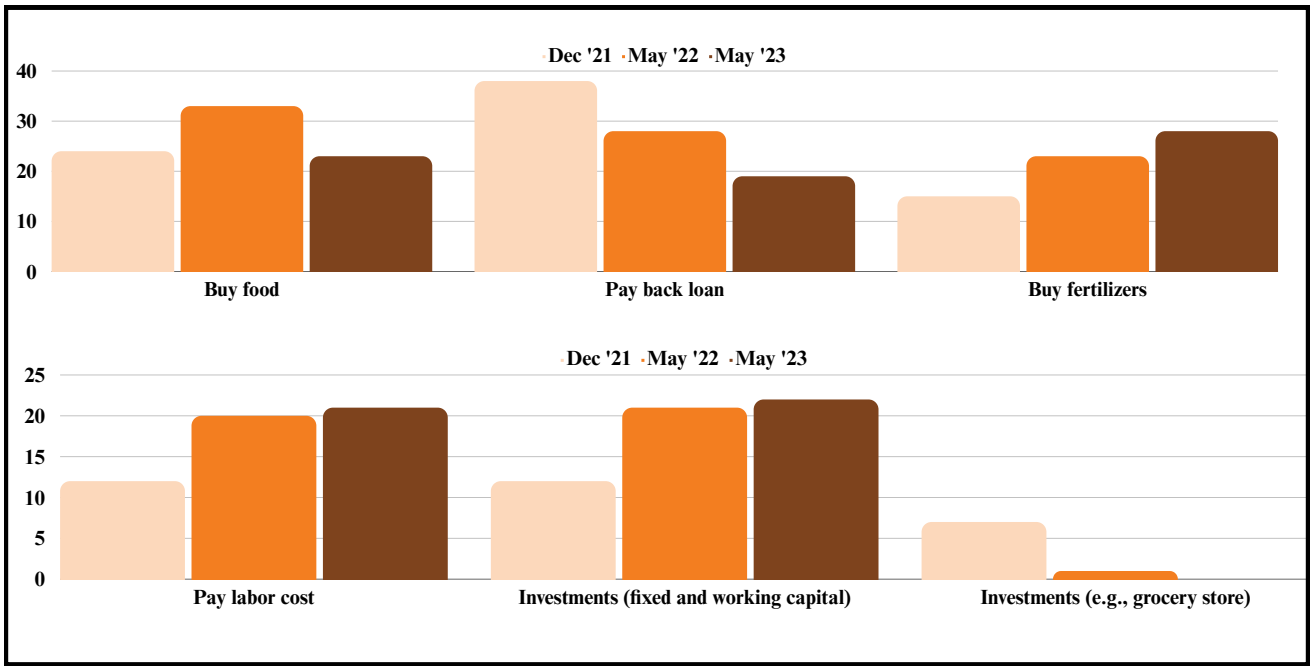



Figure 5: Purpose of liquidating assets
*Source:* World Bank estimates using WBFS data.

**Many farming households were already under great stress; negative coping strategies persist, including depletion of savings and reliance on credit (ARD-SCG 2023).** The May 2023 WBFS revealed a notable surge in asset sales for farm households experiencing additional shocks since the start of the year, with 34 percent of shock-affected households selling agricultural and non-agricultural assets, a substantial increase from previous rounds (figure 6) (World Bank 2023c). Farmers may need to sell their last draught animal or motor tiller; among the farmers adopting this strategy, 70 percent reported a decrease in harvest, compared to 51 percent who did not (FAO-WFP 2023b). Negative coping mechanisms can also increase households' indebtedness.[12] Asset depletion exacerbates households' challenges in conflict-affected areas, rural households, female-headed households, households with debt, and those vulnerable to economic shocks (FAO-WFP 2023b).

[12] 64 percent of households in debt rely on crisis and emergency coping mechanisms, compared to 41 percent of households without debt (ARD-SCG 2023).

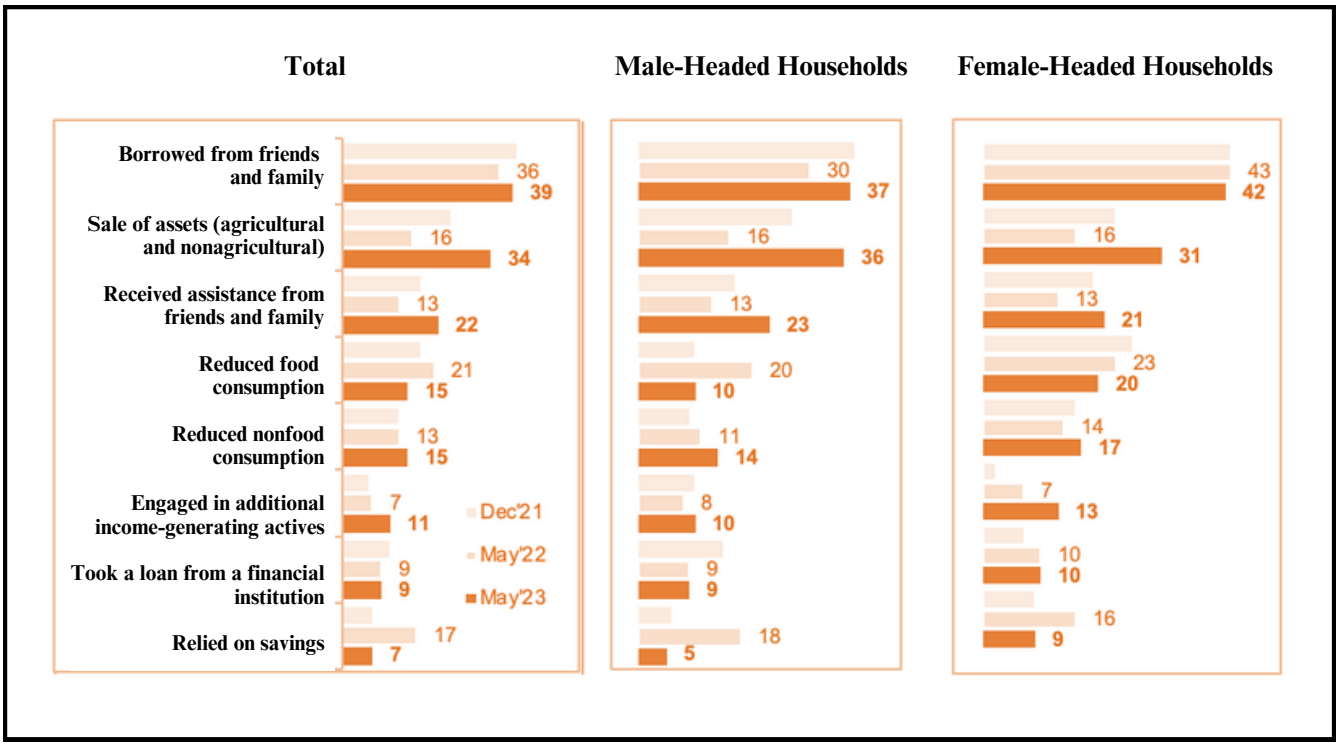



Figure 6: Purpose of farm households to chocks, 2021–23 (% of households)
*Source:* World Bank estimates using WBFS data.
*Note:* AG and NO-AG assets refer, respectively, to agricultural assets such as seeds, animals, equipment, and machinery, and non-agricultural assets, such as vehicles, furniture, appliances, and clothing.

## 3.3 Access and Utilization

### 3.3.1. Nation-wide rice sufficiency masks imbalances across areas; surplus areas bear the impact of displaced populations

**At the aggregate level, domestic rice production exceeds consumption, but this masks deeper systemic challenges.** According to official data, rice-surplus and deficit areas performed better in 2021/22 than in previous years (table 4).[13] In 2021/22, domestic rice production in Myanmar covered domestic consumption 1.53 times. While domestic rice production exceeds consumption, this masks deeper issues in Myanmar. As the country experiences conflict, economic instability, and displacement of populations, people may have less capacity to purchase and consume rice, leading to decreased demand. This decline in demand can signify economic hardship and food insecurity among the population. While access to rice and other staple foods may appear relatively high at the aggregate level, households face issues accessing specific groups or are changing their eating behaviors as a coping mechanism (see section 3.3 on deteriorating diet quality). Factors like falling farm incomes and rising prices contribute to these household-level problems, which can undermine the notion of sufficiency.

[13] Estimates for rice sufficiency are from official data for the whole crop year, including monsoon and dry seasons, and include all 15 states/regions. In 2021–22, surplus areas are Ayeyarwady, Bago, Kachin, Kayin, Mon, Rakhine and Sagaing. Deficit areas are Chin, Kayah, Magway, Mandalay, Nay Pyi Taw, Shan, Tanintharyi and Yangon.

Table 4: Rice production, consumption, and surplus/deficit status (2017–18 to 2021–22)

| | 2017–18 | 2018–19 | 2019–20 | 2020–21 | 2021–22 | Variation |
|---|---|---|---|---|---|---|
| **National** | | | | | | |
| **Production (million baskets of paddy)** | **1,248** | **1,343** | **1,274** | **1,265** | **1,315** | **1.33%** |
| **Consumption (million baskets of paddy)** | **838** | **844** | **848** | **854** | **858** | **0.61%** |
| **Surplus (+) / Deficit (-) (tons of rice)** | **4,102** | **4,988** | **4,266** | **4,112** | **4,571** | **2.75%** |
| **Rice Sufficiency (%)** | **149** | **159** | **150** | **148** | **153** | |
| **Population (millions)** | **53.39** | **53.86** | **54.34** | **54.82** | **55.04** | **0.8%** |
| **Rice-Surplus Areas** | | | | | | |
| **Production (million baskets of paddy)** | **1,028** | **1,098** | **1,049** | **1,045** | **984** | **-1.07%** |
| **Consumption (million baskets of paddy)** | **520** | **523** | **523** | **526** | **427** | **-4.82%** |
| **Surplus (+) / Deficit (-) (tons of rice)** | **5,076** | **5,750** | **5,251** | **5,187** | **5,577** | **2.38%** |
| **Rice sufficiency (%)** | **198** | **210** | **200** | **199** | **231** | |
| **Population (millions)** | **31.91** | **32.12** | **32.31** | **32.52** | **25.82** | **-5.2%** |
| **Rice-Deficit Areas** | | | | | | |
| **Production (million baskets of paddy)** | **220** | **245** | **226** | **220** | **331** | **10.72%** |
| **Consumption (million baskets of paddy)** | **318** | **321** | **324** | **328** | **432** | **7.96%** |
| **Surplus (+) / Deficit (-) (tons of rice)** | **-974** | **-762** | **-985** | **-1,075** | **-1,006** | **0.81%** |
| **Rice sufficiency (%)** | **69%** | **76%** | **70%** | **67%** | **77%** | |
| **Population (millions)** | **21.48** | **21.74** | **22.03** | **22.30** | **29.22** | **8.0%** |

*Source:* World Bank staff estimates.
*Note:* *Production and consumption rounded to the nearest million baskets of paddy. Rice sufficiency is the ratio of production to consumption. Variation calculated as Compound Annual Growth Rate (CAGR) between 2017–18 and 2021–22.

**Population is another key factor that could explain the changes in rice consumption.** In surplus areas, the population declined by 5.2 percent per year, bringing consumption down by 4.82 percent per year. Conversely, the population increased by 8 percent in deficit areas, and consumption rose by 7.96 percent. Regardless of the scale of changes in production, in net terms, the balance in both deficit and surplus areas recovered in the last year: +390 tons in surplus areas, and +69 tons in deficit areas. Therefore, surplus areas can keep providing for deficit areas, yet the main challenges are still related to transport disruptions. Even checkpoints reportedly request permits for goods transportation.[14]

**Myanmar's population size influences rice demand. The country's population rose by 3.1 percent between 2017–18 and 2021–22, but the growth rates were uneven across areas.** Population growth in rice-deficit areas far exceeds the national growth rate. Between 2017–18 and 2021–22, populations in rice-deficit areas increased 36 percent from 21.48 million people to 29.22 million (table 5). The substantial increase in population in rice-deficit areas indicates a higher demand for rice and agricultural resources in those regions, which can have implications for food security and resource allocation. In the same period, the population in rice-surplus areas fell by 19.1 percent, from 31.91 million to 25.82 million people.

Table 5: Population in rice-surplus and deficit areas

| Population (million) | 2017–18 | 2018–19 | 2019–20 | 2020–21 | 2021–22 | Variation | |
|---|---|---|---|---|---|---|---|
| | | | | | | CAGR (%) | 2017–18 to 2021–22 (%) |
| National | 53.39 | 53.86 | 54.34 | 54.82 | 55.04 | 0.8 | 3.1 |
| Rice-Surplus Areas | 31.91 | 32.12 | 32.31 | 32.52 | 25.82 | -5.2 | -19.1 |
| Rice-Deficit Areas | 21.48 | 21.74 | 22.03 | 22.30 | 29.22 | 8.0 | 36.0 |

*Source:* World Bank staff estimates.
*Note:* CAGR, Compound Annual Growth Rate.

**Analysis of IDP flows reveals that roughly 90 percent of flows affect areas with a rice surplus, affecting rice sufficiency.** Massive IDP movements are increasing food demand and causing severe food security issues in receiving areas (see box 4). Based on UNHCR data as of April 2022, around 560,900 IDPs have left their original areas of residence, while 370,500 IDPs have relocated to other states and regions within Myanmar. Regarding rice self-sufficiency, both surplus and deficit areas show negative net flows, i.e., more incoming than outgoing IDPs. However, surplus areas bear nearly 90 percent of the total IDP flows. The flow impact varies across regions and states, with Rakhine (+237,000 IDPs), Kachin (+91,500 IDPs), and Bago (+15,100 IDPs) being the most affected surplus areas.

[14] The Irrawaddy (2023) Resistance Fighters Attack Myanmar Military Checkpoints Used to Extort Farmers, April 3.

Sagaing (-227,300 IDPs) and Kayin (-74,000 IDPs) see significant IDP outflows. Adjusting for population enables a reassessment of rice self-sufficiency. Areas with negative net flows have lower consumption rates, increasing their net rice balance. Consequently, Kayah (-92,600 IDPs) and Shan (-55,300 IDPs) emerge as surplus rice areas, aligning with Myanmar government statistics (CSO-MPF 2023) (table 6).

Table 6: Non-adjusted and adjusted rice sufficiency per state and region (2021–22)

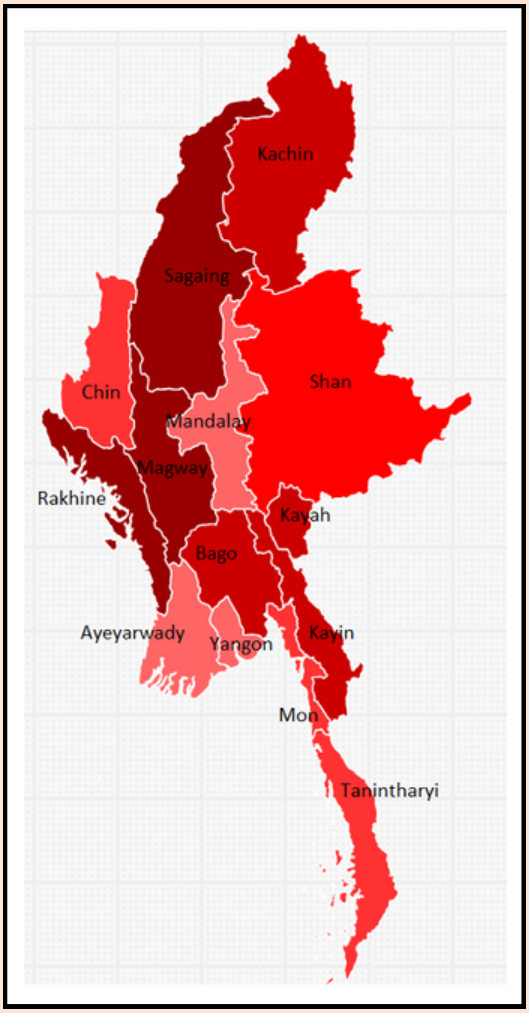
| | World Bank Estimates | | | | | | | CSO Estimates | |
|---|---|---|---|---|---|---|---|---|---|
| | Non-Adjusted Rice Sufficiency | | Internally Displaced People, IDPs (Apr 2022) | | | IDP-Adjusted Rice Sufficiency | | Net Balance | Status |
| | Net Balance | Status | Outgoing flows | Incoming flows | Net flows | Net Balance | Status | | |
| **Ayeyarwady** | 2,843 | Surplus | | | | 2,843 | Surplus | 2,807 | Surplus |
| **Bago** | 1,537 | Surplus | 900 | 16,000 | 15,100 | 1,535 | Surplus | 1,526 | Surplus |
| **Chin** | -53 | Deficit | 36,300 | 13,000 | -23,300 | -50 | Deficit | -52 | Deficit |
| **Kachin** | 45 | Surplus | 3,100 | 94,600 | 91,500 | 33 | Surplus | 66 | Surplus |
| **Kayah** | -3 | Deficit | 92,600 | | -92,600 | 10 | Surplus | 0 | Surplus |
| **Kayin** | 127 | Surplus | 74,000 | | -74,000 | 137 | Surplus | 126 | Surplus |
| **Magway** | -125 | Deficit | 45,000 | | -45,000 | -119 | Deficit | -148 | Deficit |
| **Mandalay** | -420 | Deficit | | | | -420 | Deficit | -424 | Deficit |
| **Mon** | 154 | Surplus | 7,600 | | -7,600 | 155 | Surplus | 145 | Surplus |
| **Naypyitaw** | -22 | Deficit | | | | -22 | Deficit | -10 | Deficit |
| **Rakhine** | 101 | Surplus | | 237,000 | 237,000 | 68 | Surplus | 95 | Surplus |
| **Sagaing** | 769 | Surplus | 227,300 | | -227,300 | 801 | Surplus | 765 | Surplus |
| **Shan** | -2 | Deficit | 65,200 | 9,900 | -55,300 | 6 | Surplus | 34 | Surplus |
| **Tanintharyi** | -61 | Deficit | 8,900 | | -8,900 | -60 | Deficit | -58 | Deficit |
| **Yangon** | -320 | Deficit | | | 0 | -320 | Deficit | -130 | Deficit |
| **Nation** | **4,571** | **Surplus** | **560,900** | **370,500** | **-190,400** | **4,598** | **Surplus** | **4,743** | **Surplus** |

*Source:* World Bank staff estimates from IDP data, UNICHR report; CSO-MPF 2023.
*Note:* CSO, Central Statistical Office. The net balance of rice in tons.

## Box 4: IDP distribution and food security

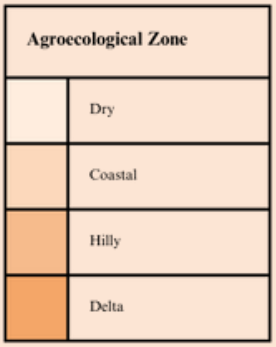
**The displacement of people due to conflict disrupts agricultural activities, reducing food production and availability.** Areas affected by conflict, with substantial IDP populations or which are impacted by disasters, face severe challenges in accessing food, healthcare, and other essential services.

Sagaing, Rakhine, and Magway currently have the highest IDP populations in Myanmar, accounting for almost 65 percent of total IDPs. Figure 7 shows the geographical distribution of IDPs by region/state. Notably, the path of Cyclone Mocha moved across areas containing the highest IDP proportion, exacerbating existing problems.




| Location | % of IDP Population | IDP Population |
|---|---|---|
| **Sagaing Region** | 41.3 | 765,200 |
| **Magway Region** | 11.1 | 205,600 |
| **Rakhine State** | 12.5 | 231,500 |
| **Tanintharyi Region** | 3 | 55,300 |
| **Mon State** | 1.9 | 34,600 |
| **Kachin State** | 6.3 | 116,400 |
| **Kayin State** | 6.1 | 113,100 |
| **Kayah State** | 5.3 | 98,100 |
| **Shan (South) State** | 3.7 | 69,400 |
| **Chin State** | 2.6 | 49,000 |
| **Shan (North) State** | 0.8 | 15,400 |
| **Bago (East) Region** | 5.3 | 98,100 |

Figure 7: Distribution and number of IDPs across Myanmar, June 2023
*Source:* UNHCR 2023.
*Note:* The darkest red represents the highest IDP population. UNHCR data notes no IDPs in Mandalay, Ayeyarwady, and Yangon.




**Though not directly focused on IDPs, the WBFS in May 2023 revealed that coastal and hilly regions had the poorest access to specific food groups (table 7).** These areas also had the lowest Household Dietary Diversity Scores, indicating limited food variety and potential nutrient deficiencies. Almost half of Myanmar's IDPs reside in these regions, highlighting the exacerbation of food security challenges due to significant IDP populations and the impacts of conflict and disasters.

Table 7: Households unable to access specific food groups by agroecological zone (%)

| | Vegetables | Grains | Fish | Cooking Oil | Beans and Pulses | Meat | Fruit | Dairy | Average Across Food Groups |
|---|---|---|---|---|---|---|---|---|---|
| **Dry** | 1 | 5 | 4 | 1 | 4 | 2 | 6 | 12 | 4.375 |
| **Coastal** | 4 | 4 | 9 | 2 | 9 | 7 | 11 | 17 | 7.875 |
| **Hilly** | 3 | 8 | 9 | 5 | 9 | 11 | 5 | 19 | 8.625 |
| **Delta** | 1 | 2 | 1 | 0 | 2 | 3 | 3 | 13 | 3.125 |

*Source:* World Bank 2023c.

**Since 2017–18, several states and regions have transitioned from having a rice surplus to a deficit.** This shift persists in Chin, Magway, Mandalay, Naypyitaw, Tanintharyi, and Yangon. When adjusting for domestic IDP flows, Kachin and Rakhine also fall into the rice-deficit category. These 2021–22 rice-deficit regions, including IDPs, face multiple challenges impacting rice production. These issues include unfavorable weather patterns, natural disasters, ongoing conflict, rising rice prices, increased input and transport costs, subpar harvests, and market disruptions. Regions like Southern Shan, Kayin, and Tanintharyi experience high rice price volatility, affecting affordability. In hilly regions like Chin and Kachin, food prices, including rice, can be notably higher than in the lowlands. Additionally, potential policy changes to safeguard domestic rice supplies, such as limiting rice exports due to global price increases and domestic pressures, could disrupt the rice market.

**Myanmar's rice-producing areas could meet local demand, but market integration, affordability, and decreasing incomes pose barriers. Production-consumption disparities exist across regions.** However, despite incoming IDPs and pending Cyclone Mocha damage assessments, Kachin, Bago, and Rakhine remain significant rice suppliers. Caution is required due to IFPRI's 7 percent estimated drop in paddy production for the 2022 monsoon season. The global rice market outlook for 2023–24, marked by reduced production and higher prices, might encourage Myanmar rice traders to prioritize global markets, possibly causing shortages and higher domestic prices.

## 3.3.2. A quarter of farm households report issues accessing food, mostly impacted by logistics and availability

**In May 2023, the WBFS found that 25 percent of the respondents could not obtain at least one of the eight food items listed in the survey during the week before the interview.** While this percentage represents an improvement compared to May 2023 (29 percent), it only brings the access level back to its original state in December 2021 (figure 8). These findings suggest that, throughout the three rounds, roughly a quarter of respondents consistently faced difficulties accessing certain food items.

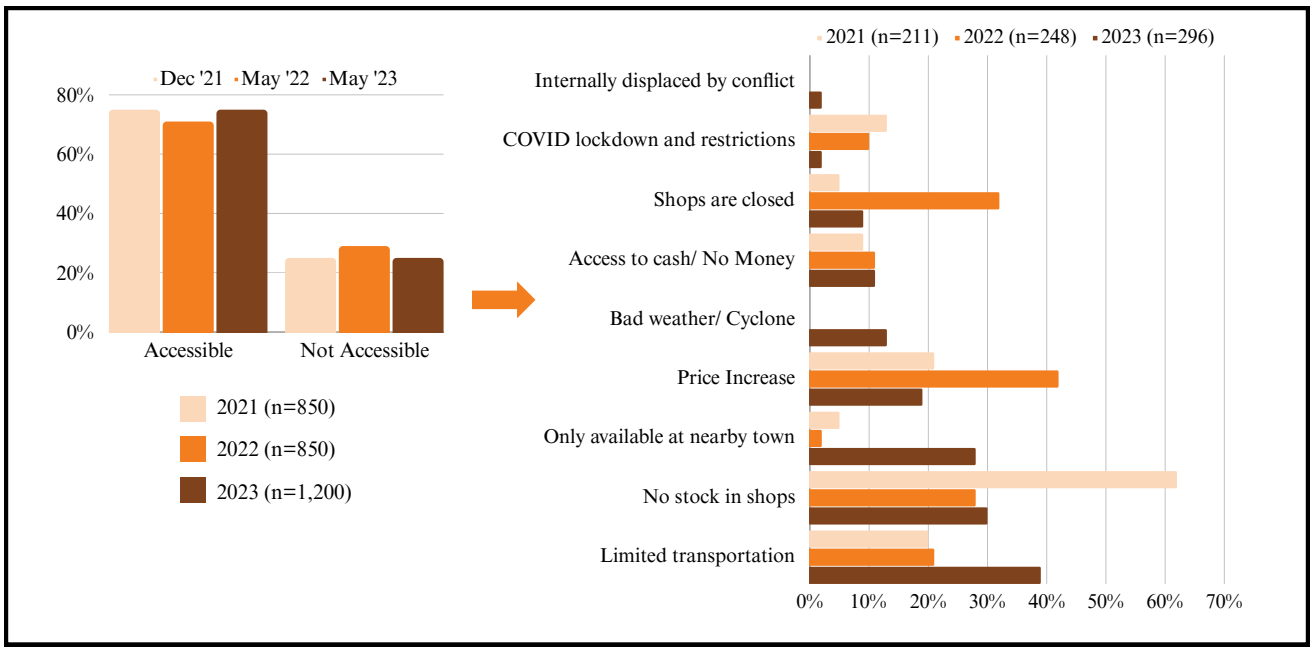
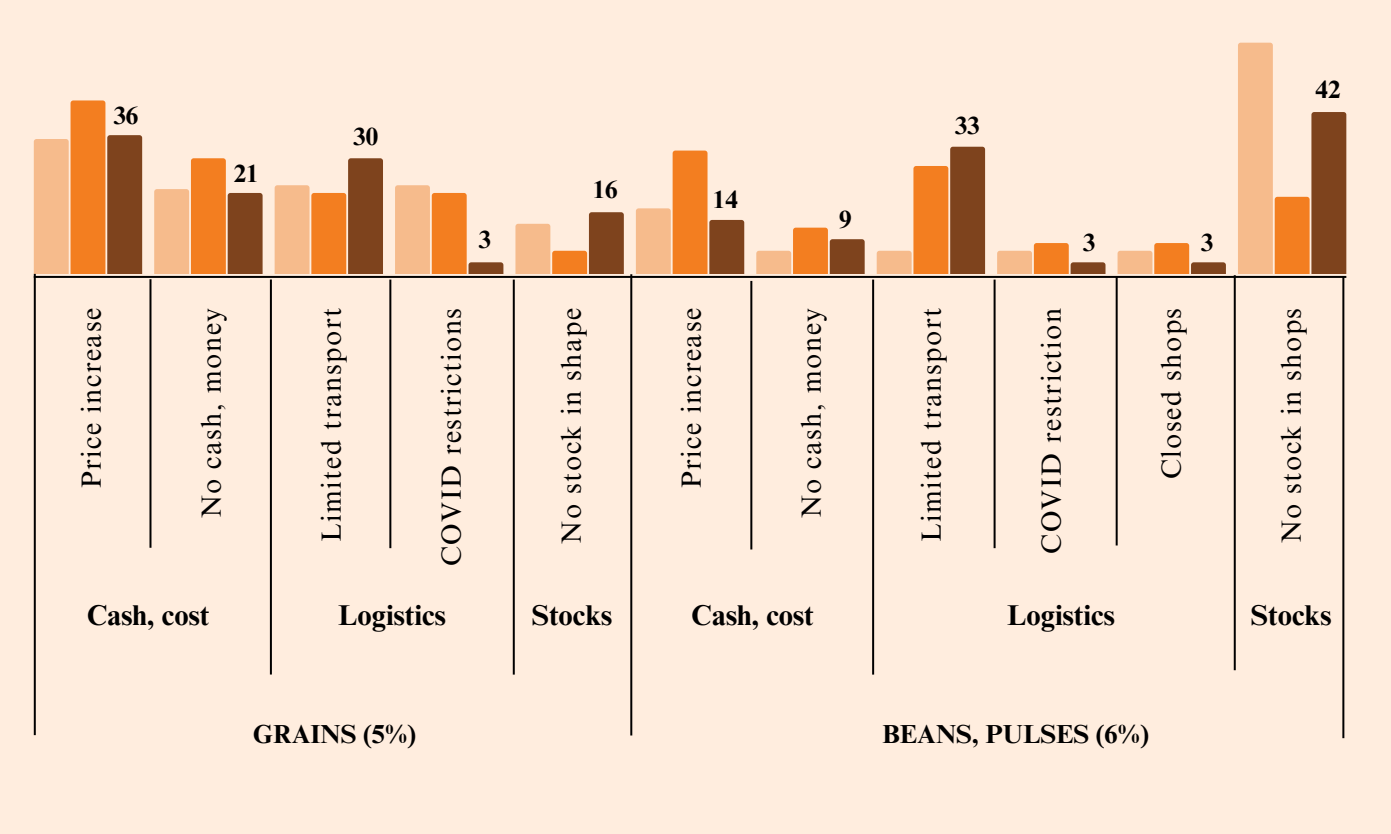


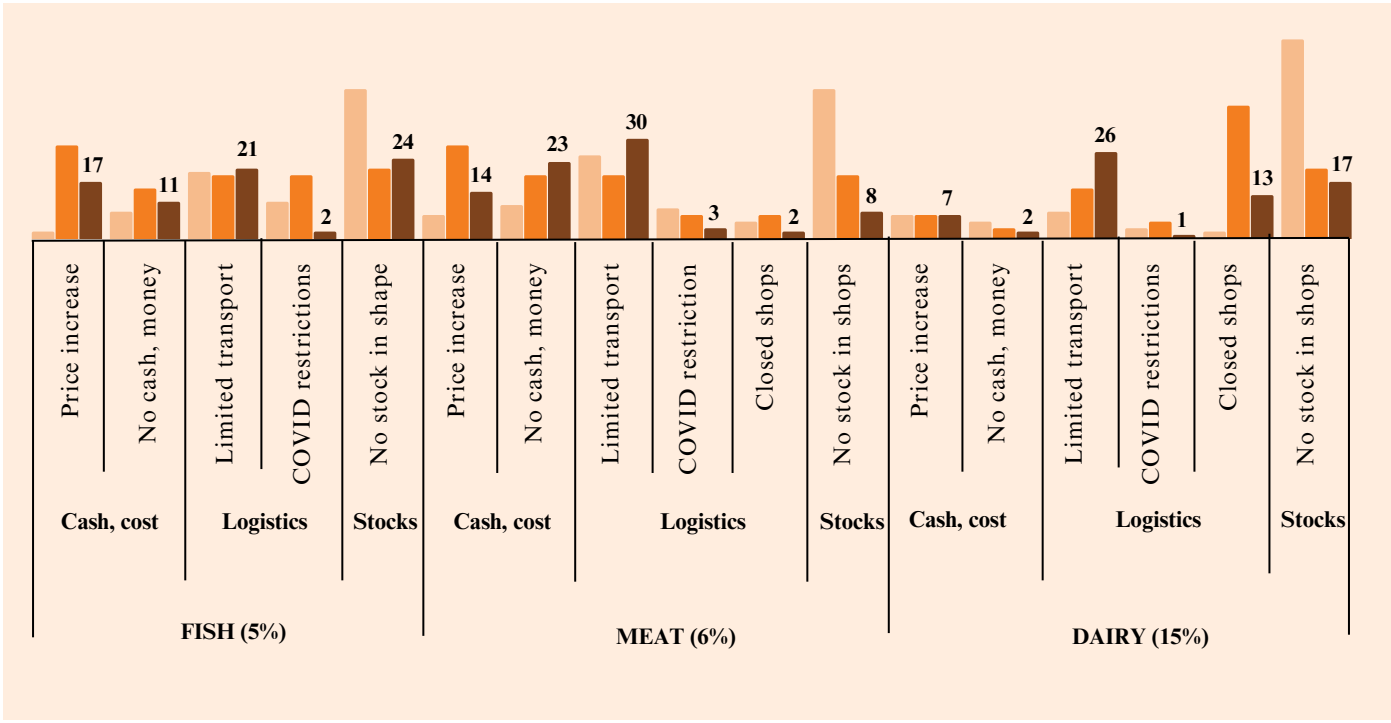

Figure 8: Overall findings for household food access within the last week
*Source:* World Bank 2023c.

**Households face diverse challenges in accessing food, including transportation, availability, and affordability.** The reasons for food inaccessibility have changed significantly (figure 9). Logistical problems persist, particularly for fruit and cooking oil. Store shelves face stock issues for various food items, except dairy products, cooking oil, and meat. Price and cash availability remain hurdles for cooking oil, grains, meat, and fish (figure 9). COVID-19-related restrictions have diminished in importance. Food access issues have fluctuated slightly across three rounds of the WBFS. Notable changes occurred for fruit and dairy products, but cooking oil access has stabilized after price peaks. Conflict and seasonal variations impact food consumption and diet quality, with differences based on survey months, influenced by increased conflict and agricultural variations (FAO-WFP 2023b).

## a. Access to grains and pulses




## b . Access to fish, meat, and dairy



### c. Access to dairy, fruit, vegetables, and cooking oil

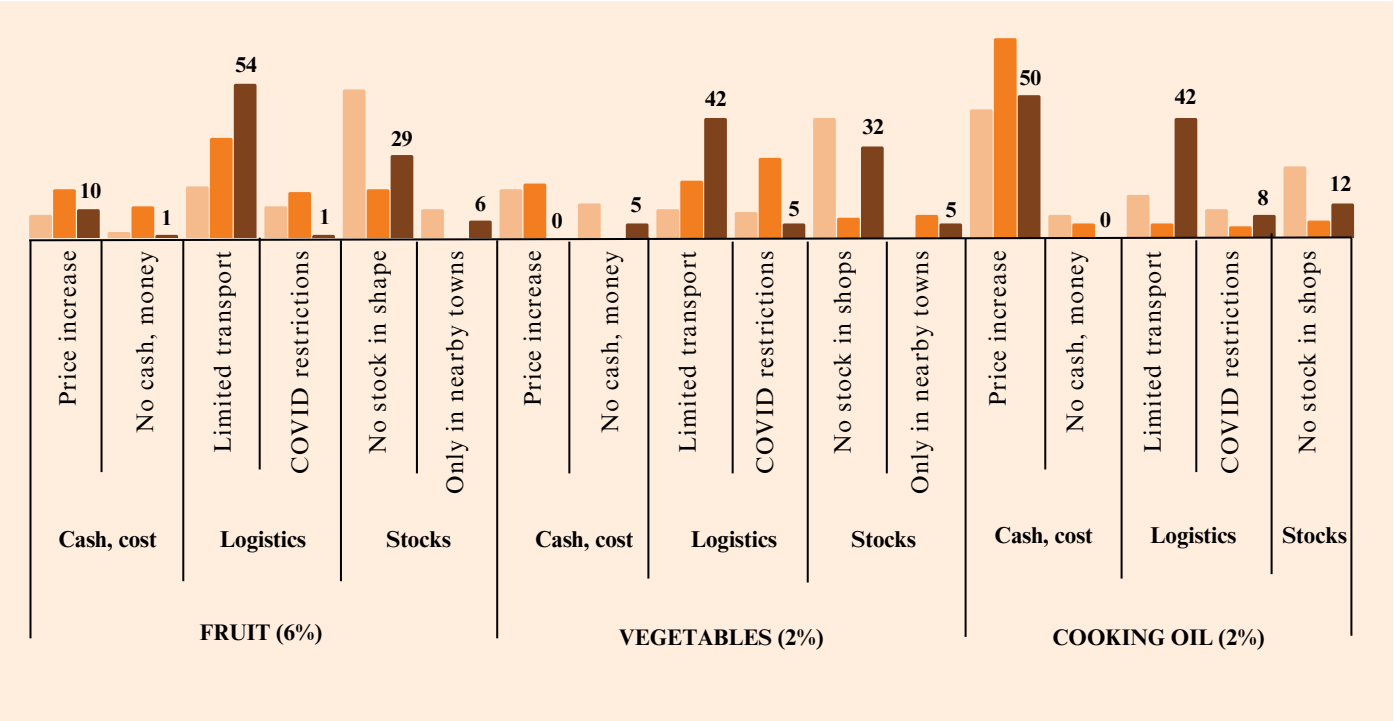



Figure 9: Farm households' reported issues in accessing food items
*Source:* World Bank estimates using WBFS data.
*Note:* The percentage in parentheses refers to the percentage of households that could not access that particular food item the week before the interviews.

### 3.3.3. Food insecurity is rising, with households increasingly worried about food quantity, quality, and diversity

**Since the military takeover in 2021, food security and nutrition in Myanmar have steadily worsened.** According to an FAO and WFP (2023b) assessment, in January 2023, 27 percent of households were food insecure,[15] and 29 percent were recently moderately or severely food insecure, based on FIES.[16] In October/December 2022, 4 percent of households were in moderate to severe hunger, with the highest rates observed in Chin, Mon, and Kayin states (IFPRI 2023c). Moreover, the percentage of households with a low food consumption score increased from 9.4 percent in December 2021/February 2022 to 15.7 percent in October/December 2022. In late 2022, the highest scores were in Chin (48.3 percent), Kayin (23.1 percent), and Magway (22.7 percent) (IFPRI 2023c).

**Income fluctuations and rising food prices are driving changes in food-related behavior. Over 68 percent of households spend over half their income on food (ARD-SCG 2023).** In May 2023, the WBFS found that 38 percent of households resorted to less preferred, cheaper food, while 13 percent borrowed food or sought help from others. Others reduced meal portions, restricted adult consumption to prioritize children, and lessened daily meal frequency (9 percent for over 3 days per week) (figure 10). These findings suggest that nearly 700,000 individuals went without a meal at least three times in the week before the survey (World Bank 2023c). These coping strategies adversely affect food consumption and dietary diversity, exacerbated by increased conflict and seasonal agricultural variations.

[15] Based on remote Consolidated Approach for Reporting Indicators of Food Insecurity (rCARI). rCARI is an aggregated food security index used to report on a population's comprehensive food security. The indicators used to calculate this are (a) food consumption scores, (b) livelihood coping mechanisms, (c) income sources, and (d) income changes due to the shock (WFP).

[16] Food Insecurity Experience Scale (FIES) is experience-based measures of household or individual food security. The FIES Survey Module (FIES-SM) consists of eight questions regarding people's access to adequate food and can be easily integrated into various types of population surveys (FAO).

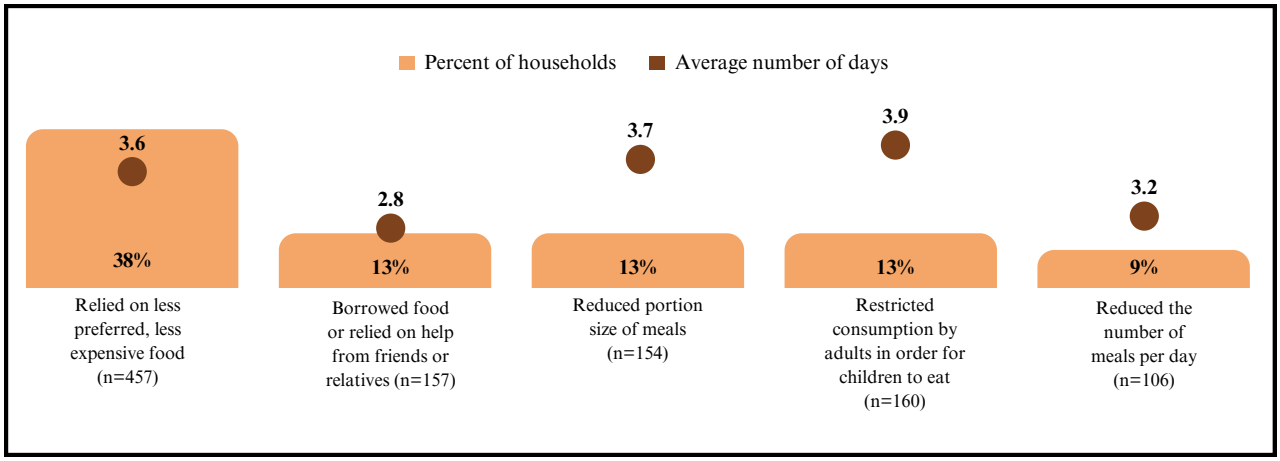



Figure 10: Days households had to employ a strategy to cope with a lack of food in the last week
*Source*: World Bank estimates using WBFS data.

**The states and regions of Chin, Kayah, Kayin, Rakhine, and Sagaing (annex C) showed the poorest food security outcomes across all indicators, while Bago and Magway experienced market decapitalization (FAO-WFP 2023b).** Mon, Shan (annex D), Tanintharyi, and Yangon also exhibited high levels of poor food consumption, surpassing the average scores for poor and borderline food consumption and recent food insecurity (FAO-WFP 2023b). The cumulative effect of these factors leaves households with no remaining assets to support sustainable livelihoods or even meet basic food consumption needs, further worsening the overall food security situation (FAO-WFP 2023b).

**A growing number (48 percent) of farm households in Myanmar are worried about having enough food at home (World Bank 2023c).** This finding from May 2023 is a notable rise compared to earlier survey rounds (figure 11). More respondents (8 percent) skipped a meal in the last month due to food shortage, while 3 percent went without eating for an entire day. Disturbingly, this 3 percent potentially represents over a million individuals and over a quarter of a million rural households. A 2023 IFPRI report also confirmed this trend, with approximately 4 percent of households experiencing moderate to severe hunger in Q4 2022 and 11.1 percent reporting this issue more than ten times within that period (IFPRI 2023c). These findings indicate a growing food security crisis among Myanmar's rural farm households.

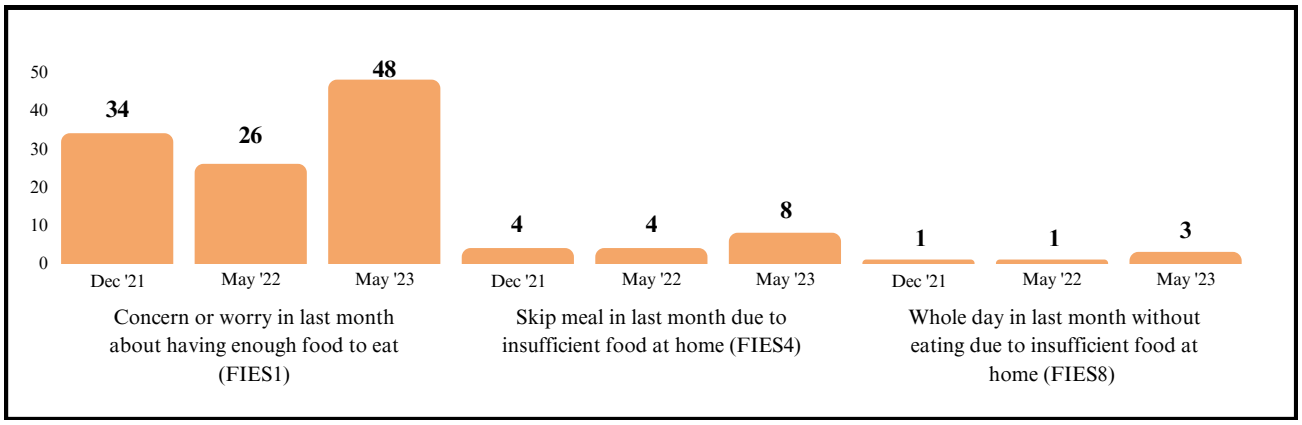



Figure 11: Farm households' self-reporting on food security status (% of households)
*Source*: World Bank 2023c.

**Nationally, there was a rise in inadequate food consumption among households (figure 12), influenced by a decrease in the consumption of nutritious milk, dairy products, meat, fish, and eggs (IFPRI 2023c).** Urban areas had significantly higher consumption rates for these food groups than rural areas, and this trend likely continued into 2023. Notably, households with high levels of physical insecurity are more likely to experience hunger and have inadequate diet diversity, particularly among adults and women of reproductive age. Some 32 percent of female-headed households experienced insufficient food consumption, 9 percentage points higher than male-headed households, indicating a widening gender gap (FAO-WFP 2023b).

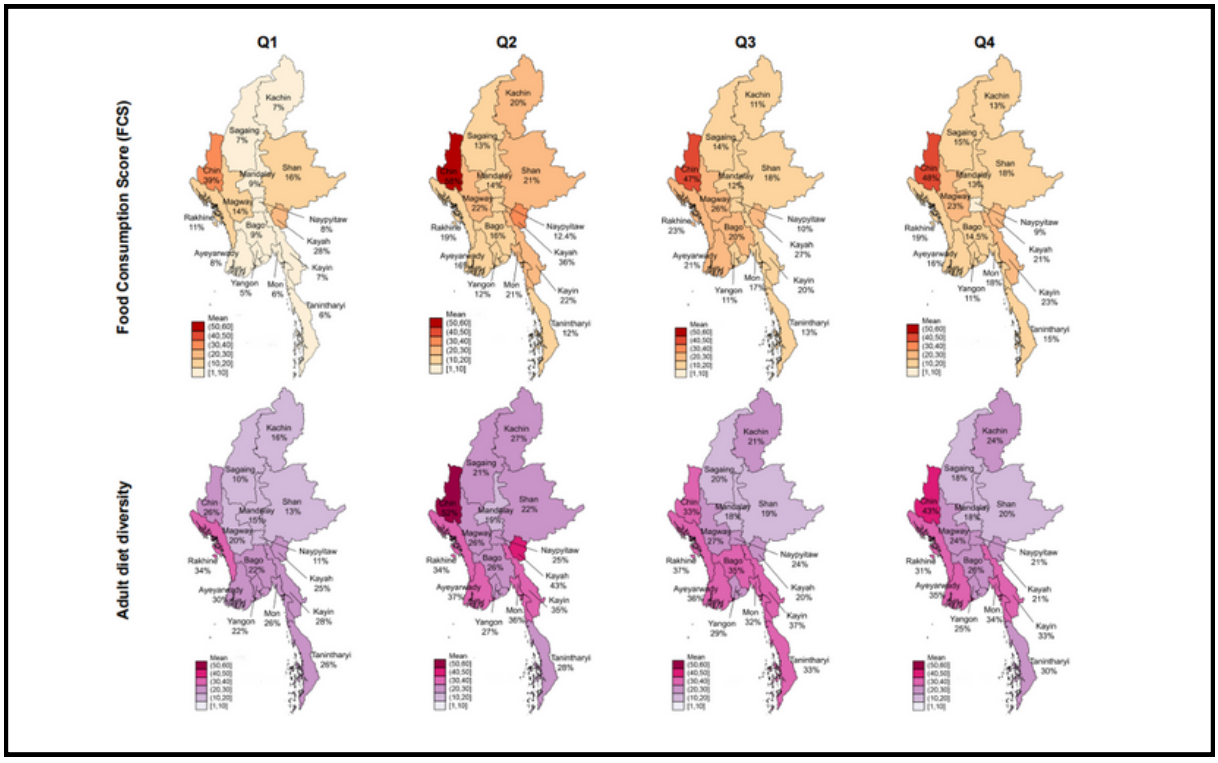



Figure 12: Proportion of households with low food consumption scores and adult diet diversity by state/region
*Source:* IFPRI 2023c.
*Note:* The darker the color, the larger the percentage of people with a low FCS and less diverse diet.

**Consumption of nutritious food dropped significantly, exacerbating already low consumption levels.** In May 2023, the WBFS saw a sharp decrease in the consumption of various food categories compared to previous rounds, particularly for poultry, fish, dairy products, pulses, nuts, and potatoes (figure 13). Grains, fruit, and vegetables (despite a slight decrease) maintain consistent consumption among farm households. These findings suggest that farming households find accessing and affording nutritious food challenging. These consumption trends align with other findings (Mahrt et al. 2023) and could be attributed to limited availability, increased prices, transportation constraints, or other socio-economic factors.

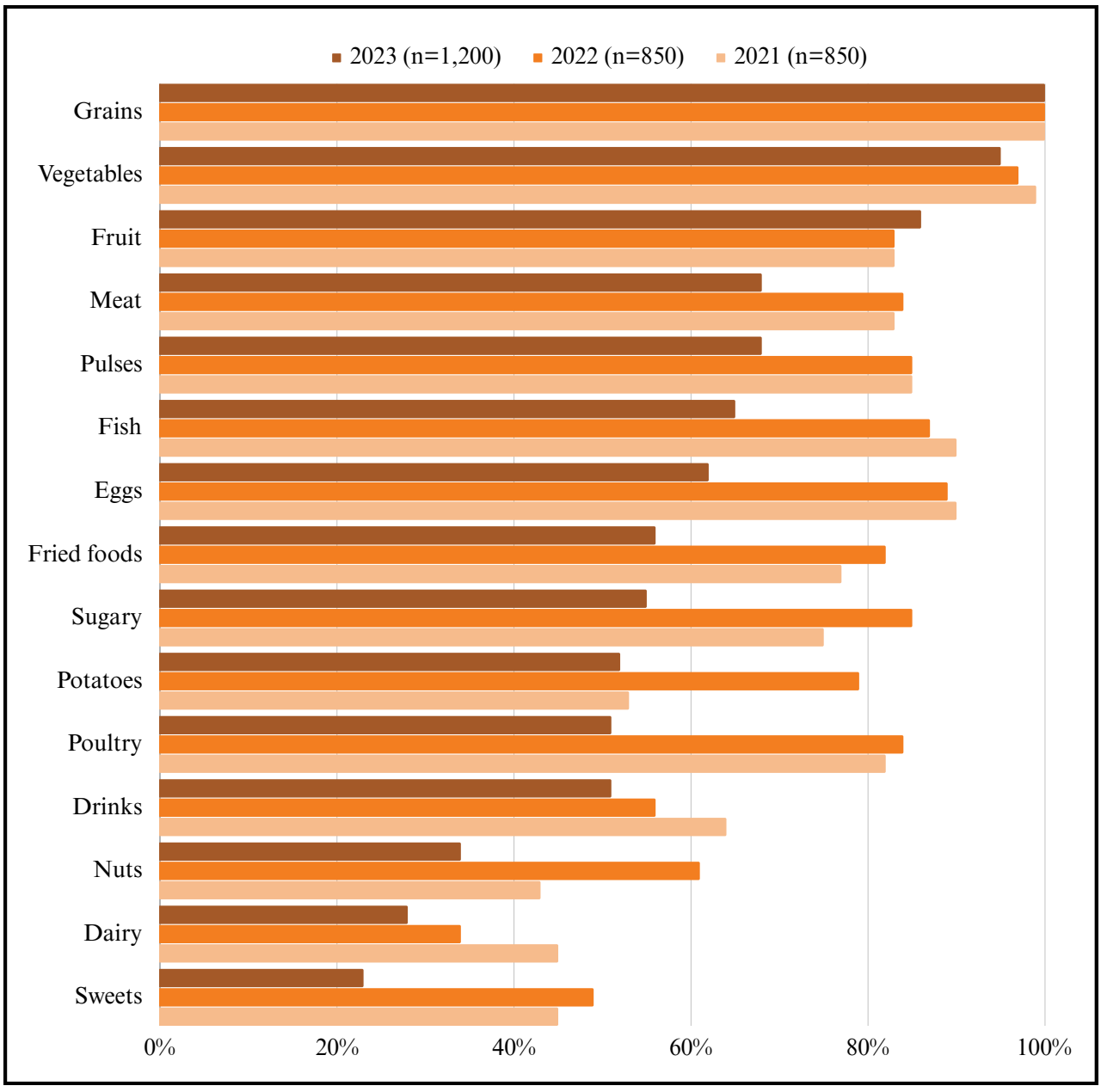



Figure 13: Farm households that consumed nutritious food in the last week (%)
*Source*: World Bank estimates using WBF5 data.

**Dietary diversity is also deteriorating across Myanmar.** The WBFS used the Household Dietary Diversity Score (HDDS) to assess household food diversity across several years.[17] A higher HDDS is generally associated with better nutritional status and health outcomes, indicating a broader range of nutrients consumed. A low HDDS may suggest a limited variety of food groups and potential dietary nutrient deficiencies. Across all agroecological zones and most regions and states in Myanmar, households experienced reduced dietary diversity in Round 3 (table 8 and figure 14). WBFS evidence of reduced dietary diversity supports earlier research on reduced consumption of specific nutritious foods (IFPRI 2023c). Poor diet diversity is particularly a problem in states affected by conflicts, with restrictions on mobility due to curfews and checkpoints, increasing transport costs, feelings of insecurity, and reports of crime. [18]

[17] This widely used tool counts the number of food groups consumed within a specific period, 24 hours, in the case of the WBFS. Over time, monitoring changes in the HDDS provides insights into dietary patterns, food access, and food security to help assess populations' dietary needs and design targeted interventions. The HDDS ranges from 0 to 12. For this study, we used 12 out of 15 food groups: grains, potatoes, pulses, nuts, vegetables, fruit, meat, poultry, fish, dairy, eggs, fried foods, sweets, sugary items, and drinks. Each group scored 1 for consumption and 0 for non-consumption, resulting in scores from 0 to 12 per household. The average HDDS was found by dividing the sum by the surveyed households.

[18] Chin, Nay Pyi Taw, and Sagaing saw the biggest increases in the prevalence of low adult diet diversity from Q1 to Q4, rising by 16.7, 9.7, and 7.9 percentage points, respectively. The highest prevalence rates were found in Chin, Kayin, Ayeyarwady, and Mon, where more than a third of all adults have inadequate diet quality in Q4 (IFPRI 2023c).

Table 8: Households' dietary diversity score by agroecological zone

| Agroecological Zone | 2021 | 2022 | 2023 | Difference 2022 to 2023 |
|---|---|---|---|---|
| Hilly | 9.66 | 10.04 | 7.66 | -2.38 |
| Dry | 9.50 | 9.92 | 8.18 | -1.74 |
| Delta | 9.87 | 10.15 | 8.24 | -1.91 |
| Coastal | 9.41 | 9.74 | 8.11 | -1.63 |
| **Total** | **9.64** | **9.99** | **8.05** | **-1.94** |

*Source:* World Bank estimates using WBFS data.

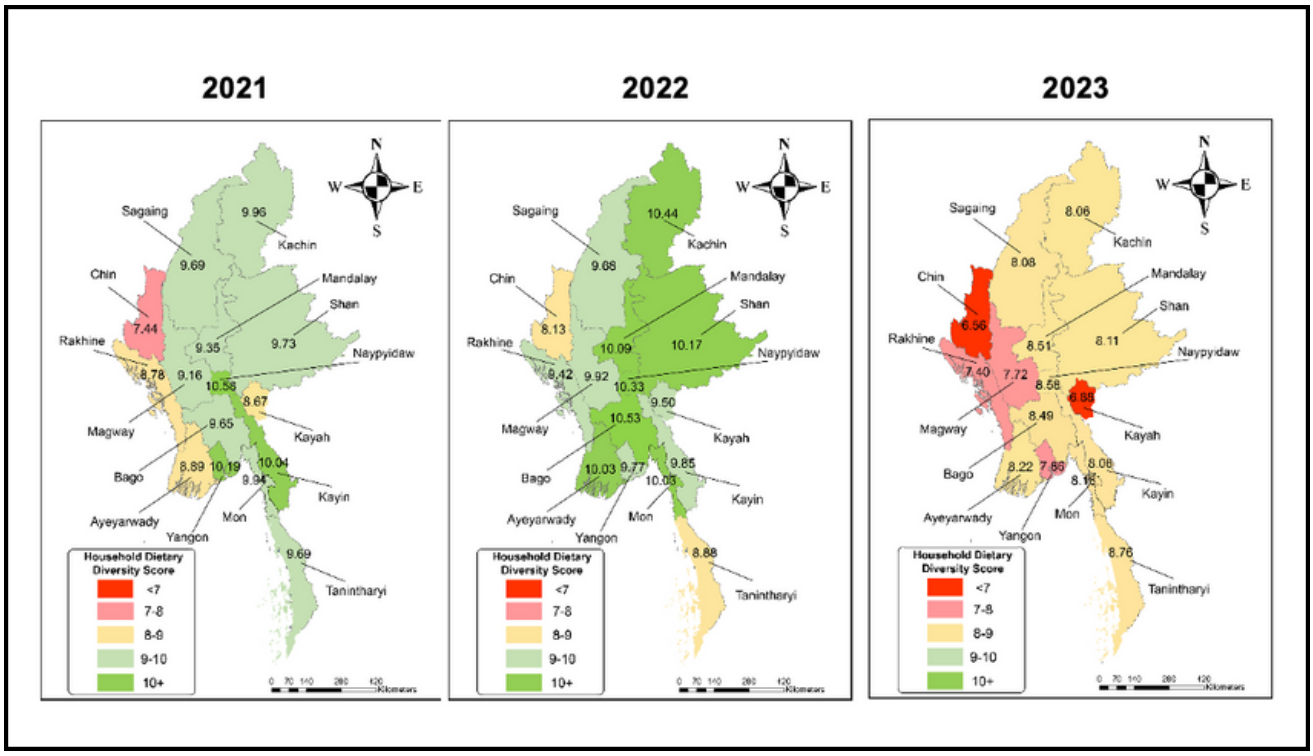



Figure 14: Households' dietary diversity score by regions and states
*Source:* World Bank estimates using WBFS data.

# 4 OUTLOOK AND RISKS

**Looking ahead, the agriculture sector in Myanmar will continue to face persistent challenges.**

## Crops and livestock

**Myanmar's declining cultivated areas and yields present a growing concern for food security, while overdependence on rice is worrying.** Reduced crop production, particularly in conflict-affected regions, and challenges in accessing fertilizer and labor raise doubts about the nation's agricultural capacity. Myanmar's agricultural sector heavily relies on rice cultivation, with minimal diversification observed in the past decade. Approximately 40 percent of farmers' income from commercial crops comes from rice (IFPRI 2022). Encouraging diversification into high-value commodities is necessary to mitigate the risks of relying on a single crop.

**Displacement and population dynamics also play a pivotal role: substantial population growth in rice-deficit areas is intensifying demand for rice and agricultural resources, potentially straining food security and resource allocation.** Massive internal displacement movements, primarily affecting rice-surplus areas, have escalated food demand and sparked severe food security concerns, further challenging the notion of self-sufficiency. In this complex landscape, transportation disruptions compound the issue, impacting the equitable distribution of food resources.

**Livestock farming, a vital source of animal proteins and the linchpin of the rural economy, faces significant challenges.** Despite slight improvements in disease control and better market access, there have been substantial reductions in herd/flock sizes in rural areas, particularly among swine and poultry producers. Low market prices, influenced by frequent distressed sales of animals, continue to be a challenge. The affordability of feed and access to pastures remain key constraints in livestock production.

# Inflation and food prices

**Inflation has surged over the past 18 months, eroding households' purchasing power for food and dampening farming investments.** While there has been some recent relief in food and fuel prices, it is important to note that a single shock, like a crude oil price increase, could significantly impact inflation and price stability. Exchange rate fluctuations impact inflation directly through increased costs of imported consumer goods and indirectly through higher intermediate goods costs. In the current challenging environment, it is essential to focus on actions that non-governmental stakeholders and the private sector can implement to enhance food security and protect vulnerable populations.

**The prices of essential food commodities, particularly rice and pulses, remain high.** Despite a slight decrease in rice prices in March 2023, they remain 17.6 percent higher than the previous year. The sustained high prices will continue to challenge food accessibility and affordability in Myanmar.

# Agricultural trade

**The decline in rice exports, attributed to both seasonal factors and global price stabilization, is a concerning development.** Policy interventions, including foreign exchange requirements and export license restrictions, have disrupted trade significantly, as have transportation delays and escalating conflict along the Myanmar-Thailand border. The introduction of restrictive administrative procedures further exacerbates these challenges, increasing trade time and causing delays in agricultural exports.

**Import restrictions on agricultural inputs compound these issues, affecting farmers already grappling with rising input costs.** This complex web of obstacles threatens Myanmar's food security by impeding agricultural trade, diminishing farmers' incomes, and potentially raising food prices. These results ultimately jeopardize the availability and affordability of essential food items for the population. Upstream support should focus on providing critical crop inputs to food-insecure and nutritionally vulnerable households. Downstream support should target post-harvest processing, input supply, value addition, storage, packing, transportation, and marketing activities to improve competitiveness.

# Income and employment

**Income sources among farming households have shifted: there is an increasing reliance on agriculture as the primary income source and a decrease in wage employment.** This shift from wage-based work could have serious implications for securing income during lean periods, especially in female-headed households where the wage employment drop is more pronounced. This shift indicates a potentially vulnerable income structure for these households.

**The agricultural employment landscape has also seen significant shifts.** Rural employment growth has surpassed urban levels in western Myanmar but declined in the east. Agriculture's contraction in the east and the shift of the workforce to construction, mining, and retail services could have implications for food production and access to food in those regions.

**A significant proportion of farmers still expect their income to decrease in the coming months.** High fertilizer prices and lower crop yields have been key factors affecting farm incomes, with many farmers citing these challenges as their main income constraints. These factors could disrupt food production and availability.

# Risks and shocks

**There has been limited progress on risk management and agricultural insurance since the military takeover in Myanmar.** The ongoing political instability has created a challenging environment for MFIs to operate effectively, affecting farmers' access to financial resources and insurance coverage. Farmers may struggle to recover from losses without sufficient insurance coverage, which could impact agricultural productivity and food availability.

**Rising domestic migration in Myanmar presents a complex challenge to food security.** While some migrations are driven by employment opportunities, offering potential income gains, others result from conflict-driven displacement, particularly in the Chin and Kayah regions. Conflict-related migration disrupts communities, causing asset and income loss, and recurrent displacement leads to negative coping strategies like reduced food consumption. For some, the inability to migrate due to financial limitations and transportation barriers compounds household challenges, potentially worsening food insecurity.

# Food security and coping strategies

**Myanmar is grappling with a severe deterioration in food security and nutrition, a crisis that has deepened since the military takeover in 2021.** Recent assessments indicate alarming levels of food insecurity, with 27 percent of households classified as food insecure and 29 percent experiencing moderate to severe food insecurity. This dire situation is underscored by stagnant rates of moderate to severe hunger, with certain states like Chin, Mon, and Kayin particularly hard-hit. Households with low food consumption scores have surged from 9.4 percent in early 2022 to 15.7 percent by the end of the year.

**Challenges in accessing essential food items in Myanmar persist.** These ongoing access issues are multifaceted, encompassing transportation, availability, affordability, and external circumstances, such as logistic problems and stock shortages on store shelves. Moreover, prices and available cash continue to pose significant challenges, particularly for cooking oil, grains, meat, and fish. Falling farm incomes and rising prices exacerbate household-level issues, jeopardizing the idea of self-sufficiency and emphasizing the need to address these deeper problems.

**Increasing numbers of households are adopting food-related coping strategies, including reduced food expenditures, smaller portions, and even skipping meals.** Over 68 percent of households allocate more than half of their income to buying food, and nearly 700,000 individuals have gone without a meal at least three times in the past week. Rural farming households, in particular, have seen a significant decline in food security, with concerns about having enough food at home and instances of meal skipping becoming increasingly common.

# Diet and nutrition

**The consumption of nutritious foods has decreased, particularly in rural areas.** Urban areas fare better in terms of food consumption but remain affected by disparities. Furthermore, the consumption of nutritious foods such as poultry, fish, dairy products, pulses, nuts, and potatoes has sharply declined, posing challenges for farming households.

**Dietary diversity is diminishing nationwide, raising concerns about nutrient deficiencies and overall health.** The decline in dietary diversity is evident across all agroecological zones and most regions and states in Myanmar. Conflict-affected areas have particularly poor dietary diversity, restricted mobility due to curfews and checkpoints, rising transport costs, heightened insecurity, and reported crime incidents, further limiting access to a diverse diet. Nutritional support from development partners is crucial for communities in Myanmar, alongside capacity-building assistance for home gardens and small livestock production, i.e., pigs and poultry. These actions can benefit communities, especially mothers with children under five, and combat the impacts of stunting and malnutrition.

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# A METHODOLOGICAL NOTES

## Food security and report rationale

**We attain food security when all individuals have reliable access to adequate, safe, nutritious food, aligning with their dietary preferences for a healthy lifestyle.** It involves the physical availability of food driven by production, stocks, and trade, economic and physical considerations like income, markets, proximity to food sources, food behavior and dietary diversity, and how these aspects shift over time, influenced by weather, political stability, and economic factors. Addressing these interrelated aspects is crucial for sustainable food security.

**As part of a semi-annual series, this report presents findings from the first half of 2023 on the compounded crises in Myanmar.** Based on monitoring efforts, the report focuses on agricultural production, food availability, affordability, and consumption, and how these factors impact food security in Myanmar. The aim is to analyze the agricultural sector's challenges in-depth to offer essential insights for stakeholders seeking to address these pressing issues.

## Farmer phone surveys

**Myanmar Survey Research (MSR), at the behest of the World Bank, conducted a study on the livelihood of farmers in rural Myanmar.** With data rounds in December 2021, May 2022, and May 2023, the research sought the views of farm households from various regions proportional to each area's rural population. Initially, 850 respondents were involved, but Round 3 encompassed 1200 participants. The study reveals the impact of Myanmar's ongoing crises, including the military takeover, on farmers' food security and income. Cyclone Mocha's arrival during this period amplified awareness about weather implications on farming activities.

**The survey, comprised mainly of closed-ended questions, sought to examine the impact of recent crises on farmers' food security, livelihood, and income.** However, it was conducted via phone, introducing a potential bias by including only households with mobile phones. As mobile phone penetration in Myanmar is below 90 percent, the survey could have excluded vulnerable households without phones or network coverage in remote areas. Thus, the computer-assisted telephone interviewing survey may not fully represent the population.

**Moreover, the initial farm phone survey in late December failed to fully capture the monsoon paddy harvest and marketing activities, potentially affecting the results.** Thus, it is key to factor this into any survey analysis.

## Key informant interviews

**Key informant interviews (KIIs) via phone were conducted to understand the situation of food and vegetable vendors, rice millers, and fertilizer dealers at least 25 years old, with a minimum of 5 years of work experience in their businesses.** These KIIs included individuals from eight different states and regions.

## Desk review and analysis of secondary data

**The research employed secondary data from two main sources: a desk survey that collated agricultural news from various outlets and a review of governmental data on agricultural production and area.** The desk survey included news concerning the agricultural sector reported from December 1, 2022, to April 30, 2023, journals, newsletters, government agencies, ministries, private sector professional associations, agribusinesses, finance institutions, and governmental bodies. It also covered related public policies and regulations.

**We examined the secondary data regarding agriculture and food security to assess food security status, unemployment, and production in crops, livestock, and fishery sectors.** The analysis utilized official datasets, reports from Myanmar institutes, and resources from international organizations like FAO, IFPRI, Mercy Corps, UNHCR, OCHA, U.S. Department of Agriculture, WFP, and World Bank.

# Price analysis

**The study on food prices analyzed the levels and fluctuations of retail prices for chosen food commodities both nationwide and by regions and states.** Data originated from the WFP retail monthly price records, used for their monthly price monitoring reports. We modified available WFP dataset values to compute percent changes, average values, standard variations, and normalized values. Volatility was calculated using standard deviations from monthly changes over rolling three-month intervals. Data for rice, palm oil, pulses, eggs, tomatoes, and onions were adequately available for rice, palm oil, pulses, eggs, tomatoes, and onions were fit for an adequate time interval and across states and regions.

**We undertook nationwide temporal analysis from January 2021 to March 2023 and spatial analysis across various states and regions.** The temporal examination involved studying month-on-month and annual trends in price volatility and levels during Q1 2023. The spatial review analyzed Q1 2023 price level and volatility variations across states and regions. Normalization from 0–1 was carried out to classify into low (below 0.25), medium-low (0.25–0.5), medium-high (0.5–0.75), and high (above 0.75) categories to chart price levels and volatilities.

# Satellite data analysis on agriculture performance

**Uncertain and delayed access to administrative data hinders the performance evaluation of vital sectors like agriculture.** Therefore, assessment using alternative data from satellite imagery and remote-sensing technology has been attempted (further information in box A.1).

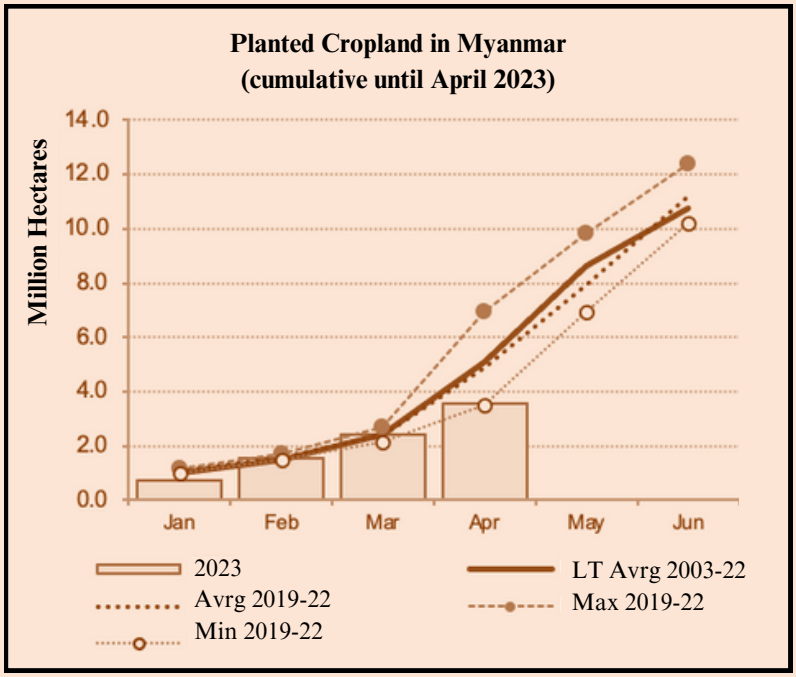
## Box A.1: Measuring agricultural sector performance using satellite data

**Remote-sensing techniques enable real-time surveillance of Myanmar's agricultural land cover, vegetation, and crop status.** Recently, IFPRI and USAID utilized satellite imagery to measure vegetation greenness in Myanmar.

Their findings suggest a 7 percent drop in rice cultivation area and a 7.5 percent yield reduction between the 2021 and 2022 monsoon seasons. Similarly, the World Bank used high-resolution satellite imagery in 2023 to study Myanmar's vegetation conditions and phenology in cropland areas.

**The analysis involves Enhanced Vegetation Index (EVI) data from the MOD13Q1 and MYD13Q1 datasets, complemented by the European Space Agency World Cover 2021 dataset for cropland extents.** We applied the Landsat-Derived Global Rainfed and Irrigated-Cropland Product (LGRIP), part of the Global Food Security-support Analysis Data (GFSAD) project, to exclude non-agricultural areas (like forests, water bodies, etc.) from the EVI calculation. The LGRIP also segregated cropland into irrigated and rainfed areas. Early results from the compiled data have allowed tracking of planting, harvesting processes, and monitoring of vegetation health in croplands compared to past records. Two EVI-based metrics were developed to measure vegetation health: the difference anomaly (DA), which determines the deviation from the long-term average, and the Vegetation Condition Index (VCI), a normalized index where higher values (0–100) signify better vegetation conditions.

**Our analysis shows that progress in cropland planting and harvesting for April 2023 was roughly a third below the 2019–22 average (figure A.1).** The total national cropland planted in this period is estimated to be 30 percent less than the 2003–22 April average and 27 percent less compared to the 2019–22 monthly average. Yet, the total harvested cropland is about 4 percent over its long-term April average but approximately 32 percent below its recent April averages. This suggests that the harvested cropland in April 2023 was only about two-thirds of the same period in the past four years.



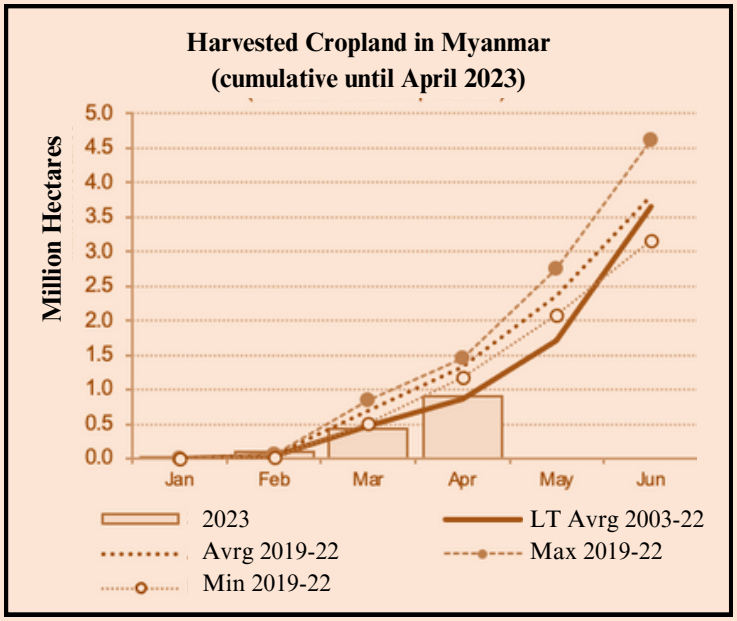



Figure A.1: Comparative progress in cumulative planted and harvested cropland in Myanmar
*Source:* World Bank staff estimates.

**Our analysis of the nationwide vegetation condition using both the DA and the VCI indicators shows similar trends.** These illustrate a widening range of values from April to September, with average values peaking in July for DA and September for the VCI (see figure A.2). The DA slightly surpassed the long-term average. The VCI fluctuated from January to April 2023 between 44 and 51 percent of its long-term average. Nonetheless, both the DA and VCI are around the midpoint of their short trends, suggesting a slight deterioration in vegetation conditions in Myanmar during the first four months of 2023 compared to the same period since 2019.

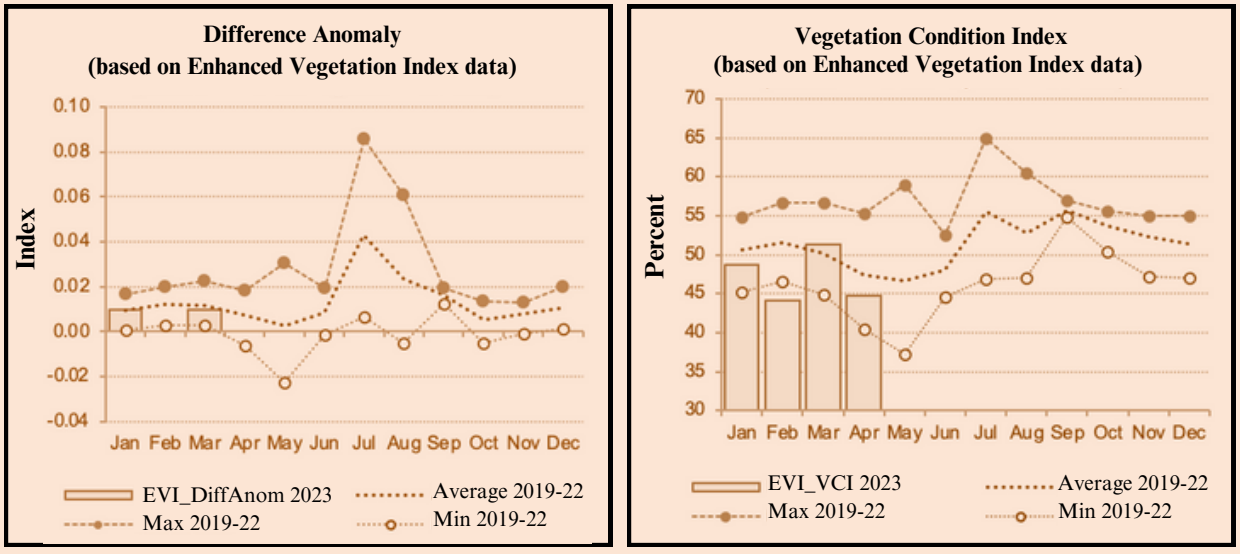
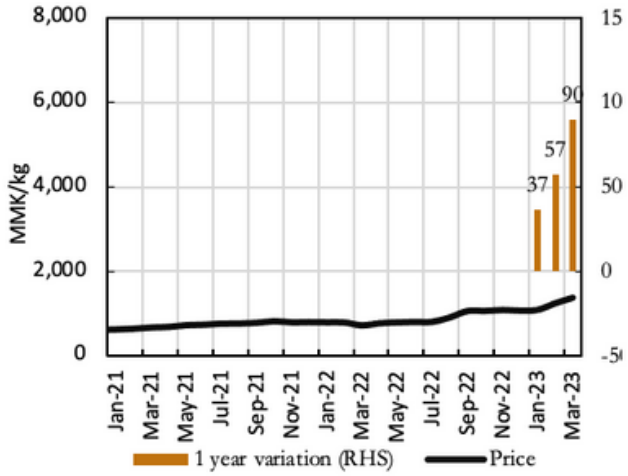



Figure A.2: Changes in vegetation condition in early 2023
*Source:* World Bank staff estimates.

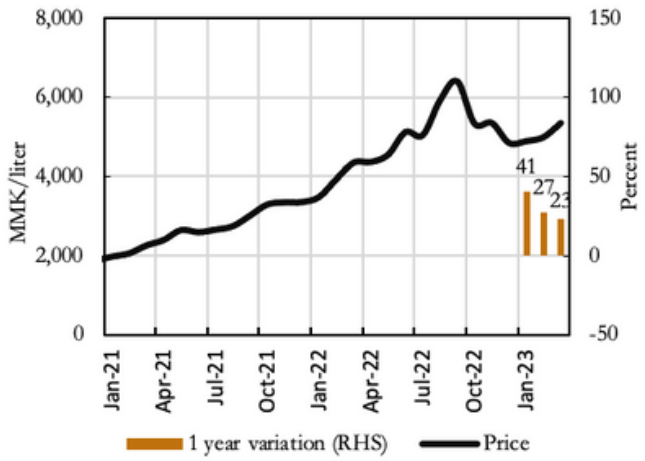
**While remote sensing and satellite imagery are valuable for assessing agricultural production, they have limitations.** Issues such as clouds, snow/ice, aerosols, or shadows can obscure pixels and hinder high-quality vegetation data acquisition over an extended period. The quality and resolution of these pixels significantly influence the robustness of our findings. Moreover, our analysis mainly covers seasonal crops, as tracking the yearly dynamics of perennial crops is challenging. Ground verification is crucial to align satellite data with on-field observations. Despite these challenges, our results provide reliable indicators of current farming trends, especially where access to trustable agronomic and land-use data is scarce.

# B COMMODITY PRICE TRENDS, VARIATIONS, AND VOLATILITIES

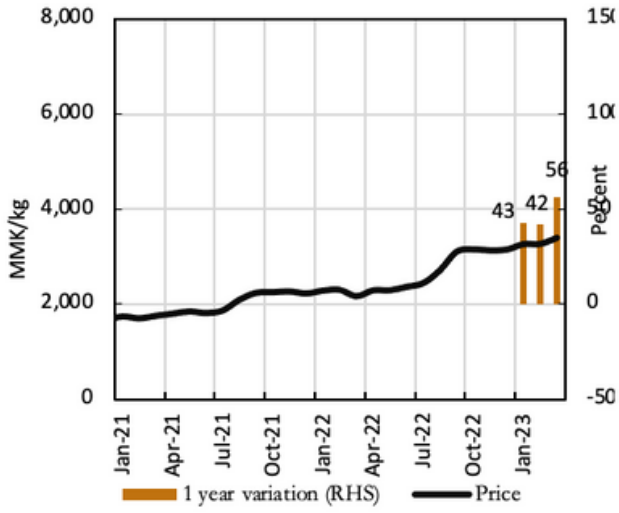
**Rice (low quality)**




**Palm oil**




**Pulses**




**Eggs**

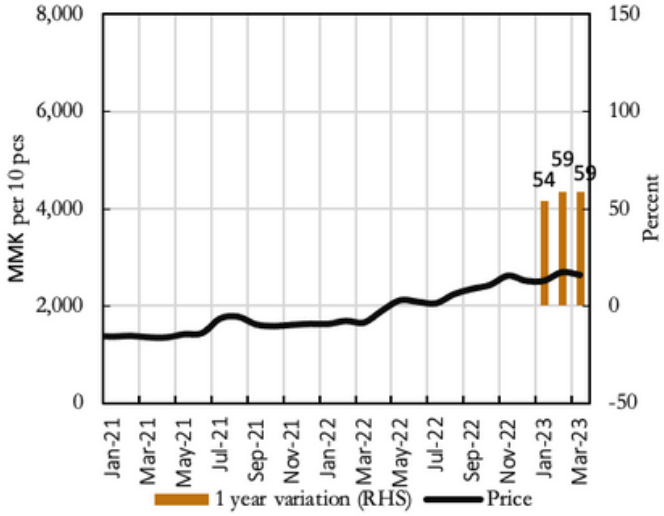



Figure B.1: Trends and price variations of selected commodities
*Source:* World Bank staff calculations using WFP data.

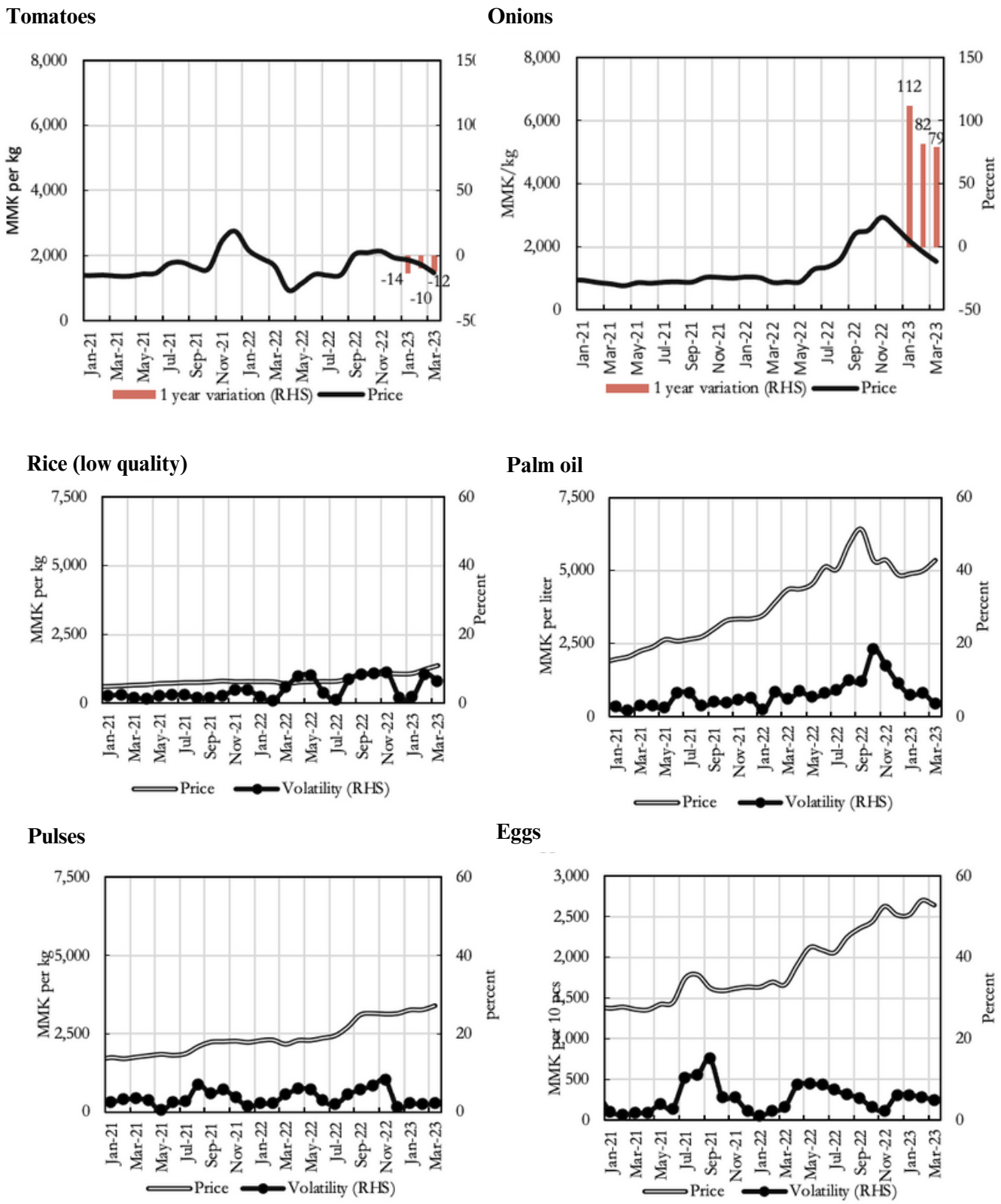



Figure B.2: Volatilities of selected commodities

*Source:* World Bank staff calculations using WFP data.

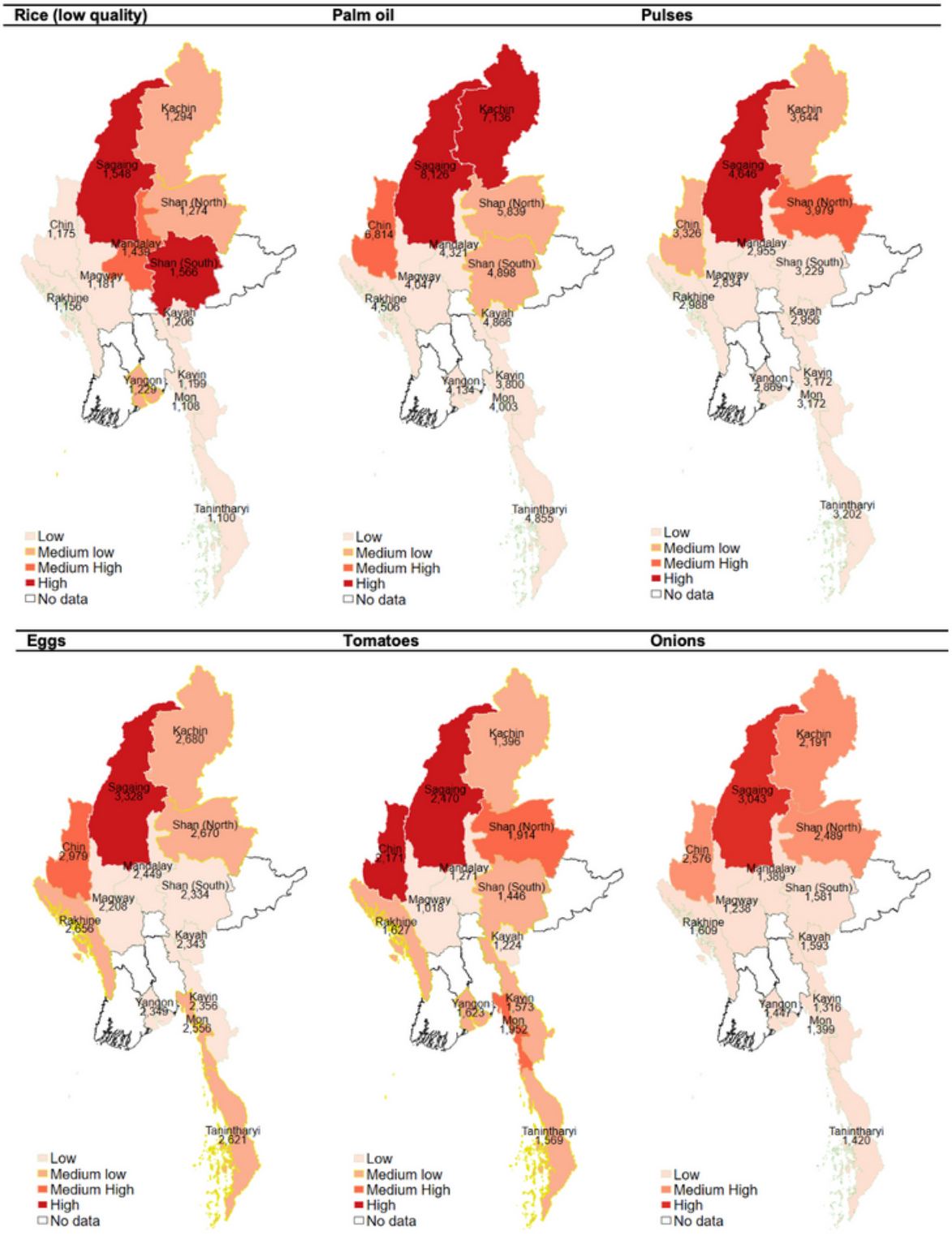



Figure B.3: Spatial differences in price level for basic commodities, Q1 2023

*Source:* World Bank staff calculations using WFP data.

*Note:* Prices are MMK per kilogram and MMK per ten eggs. The darker the color, the higher the prices. Prices are normalized between 0 and 1 to categorize into four different groups—low (values lower than 0.25), medium-low (values between 0.25 and 0.5), medium-high (values between 0.5 and 0.75), and high (values greater than 0.75).

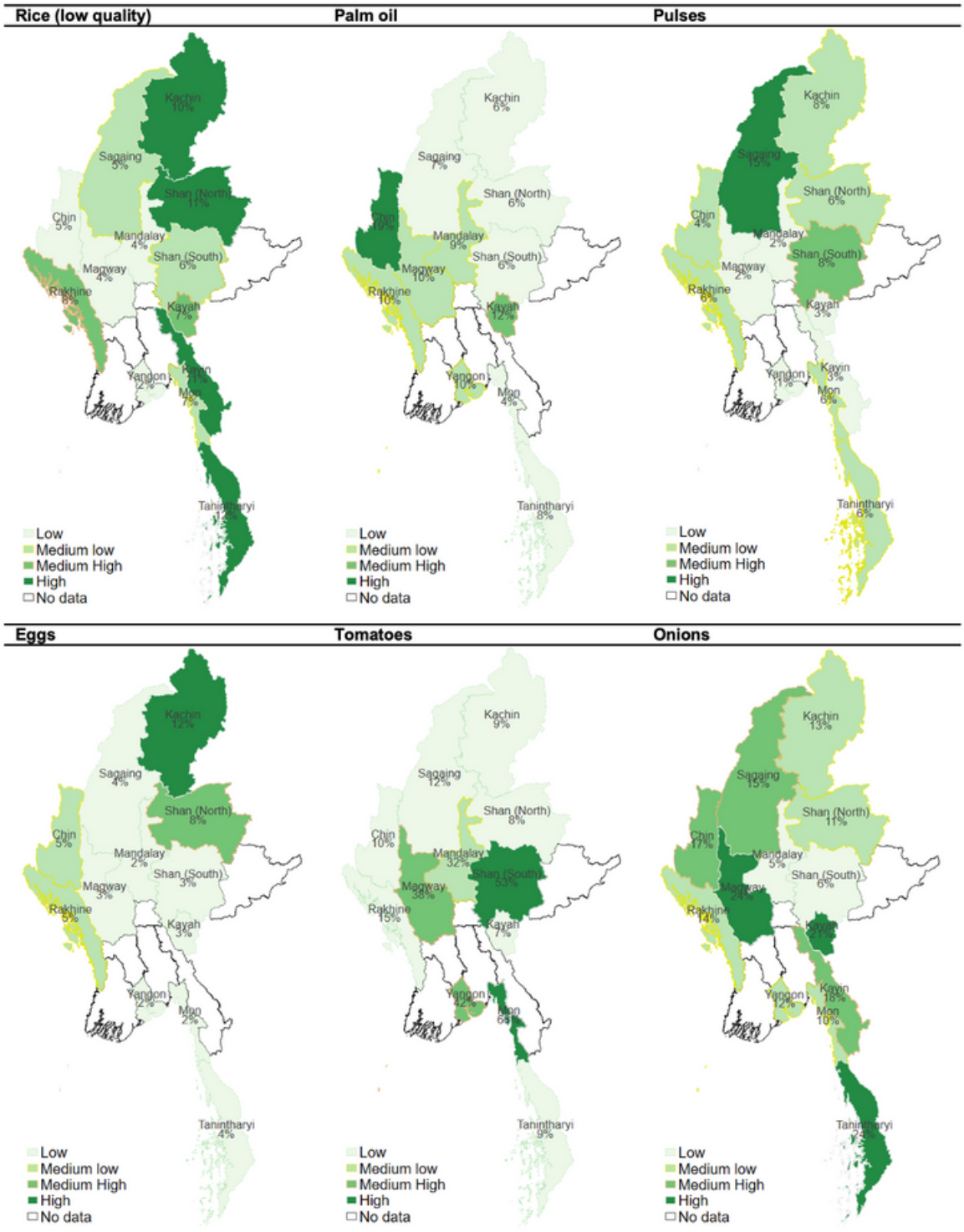



Figure B.4: Spatial differences in price volatility for basic commodities, Q1 2023 (%)

*Source:* World Bank staff calculations using WFP data.

*Note:* The darker the color, the higher the volatilities. Volatilities are normalized between 0 and 1 to categorize into four different groups—low (values lower than 0.25), medium-low (values between 0.25 and 0.5), medium-high (values between 0.5 and 0.75), and high (values greater than 0.75).

# C FOOD SECURITY IN SAGAING REGION

**Sagaing region is a predominantly Bamar region in the northwest of Myanmar (figure C.1).** Round 3 of the WBFS (May 2023) [19] found crop farming remained the dominant occupation for farm households in Sagaing, although this declined compared to previous survey rounds.

## Access to food in Sagaing, May 2023

**In Sagaing, 91 percent of households reported access to grains, below the national average of 95 percent, despite improvements from previous rounds (figure C.2).** While fish access also improved from previous rounds, it remains slightly below the national average of 95 percent.

Figure C.1: Sagaing Region, Myanmar

**In Round 3, more households could access meat in the last week, higher than the national average of 95 percent, and a significant improvement on Rounds 1 and 2 (86 percent and 93 percent, respectively).** However, in Round 3, fewer respondents in Sagaing could access dairy products than the national average (80 percent vs. 85 percent). The access rate is still 8 percent lower than in Round 1, suggesting that dairy accessibility or availability remains problematic.

**Though improved in Round 2, in Round 3, fruit access was worse in Sagaing (91 percent) than the national average (94 percent).** However, vegetable access was higher (100 percent) than the national average in Round 3, surpassing Sagaing's scores in earlier rounds. While better vegetable access will enhance nutrition in Sagaing, the below-average access to other nutritionally important food is concerning.

**Accessibility to cooking oil is high, equaling the national average and significantly improving since Round 2.** Access to beans and pulses in Sagaing was 95 percent, in line with the national rate. Access significantly improved since Round 2 (88 percent) but remains worse than Round 1 (97 percent). Figure C.2 compares household food group access in Sagaing to national findings.

[19] WBFS data collected in December 2021 (Round 1), May 2022 (Round 2), and May 2023 (Round 3).

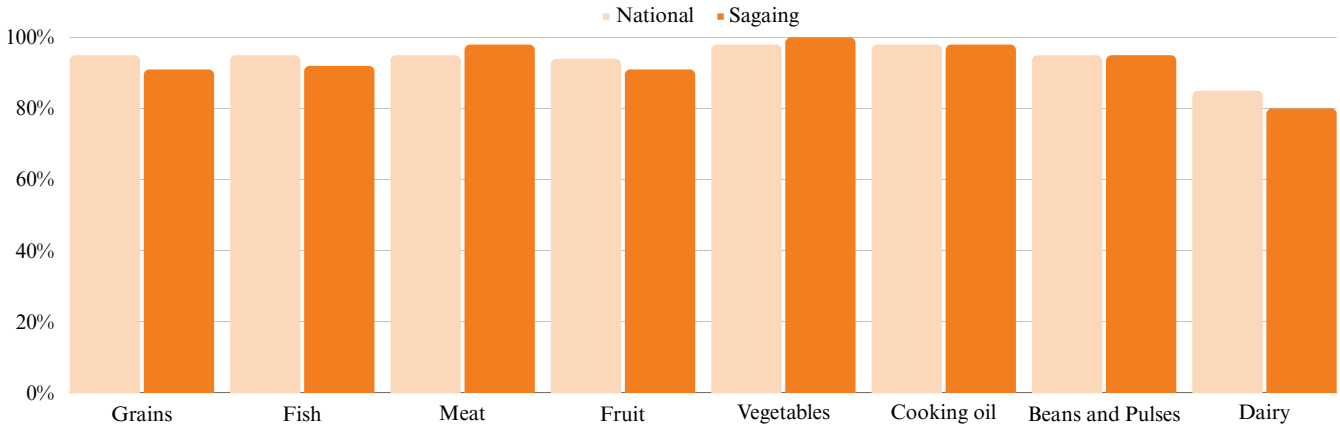



Figure C.2: Sagaing access to food
*Source:* World Bank 2023c.

## Barriers to access

**Although overall food accessibility has shown improvement over previous surveys, the situation continues to be challenging.** Sagaing residents still struggle to access particular food items like grains, fish, fruits, and dairy, falling below national averages. Limited transportation emerged as a significant obstacle to obtaining these foods, affecting access to grains (50 percent), fruits (82 percent), pulses (71 percent), and fish (40 percent), among others. Increased internal displacement due to conflicts in Sagaing accounted for the lack of grain access (25 percent). Also, adverse weather conditions, notably cyclones, disrupted the availability of fish and meat. Limited in-store stock and rising prices further escalated these problems. This shortage in stock particularly impacted fruit access (27 percent), while price hikes constrained access to grains (25 percent). The unavailability of dairy products was largely due to reduced store stock and closures. Despite improved food accessibility, food insecurity is still problematic, and negative food-related behaviors are worsening.

## Consumption and coping strategies

**Round 3 survey results indicate declining food consumption in Sagaing, suggesting altered eating habits or food scarcity.** Possible reasons may include limited access, changing preferences, or external factors such as economic conditions or supply disruptions. The HDDS fell from 9.68 in 2022 to 8.08 in 2023, suggesting reduced dietary variation, potentially affecting health. Also, 51 percent of the participants expressed concern about food adequacy, a significant increase from previous surveys, pointing to higher food insecurity (figure C.3). Also, 14 percent reported meal skipping due to food shortage, an increase from earlier rounds. Crucially, 9 percent spent an entire day without food, indicating severe escalating food insecurity and a need for nutrition-focused interventions.

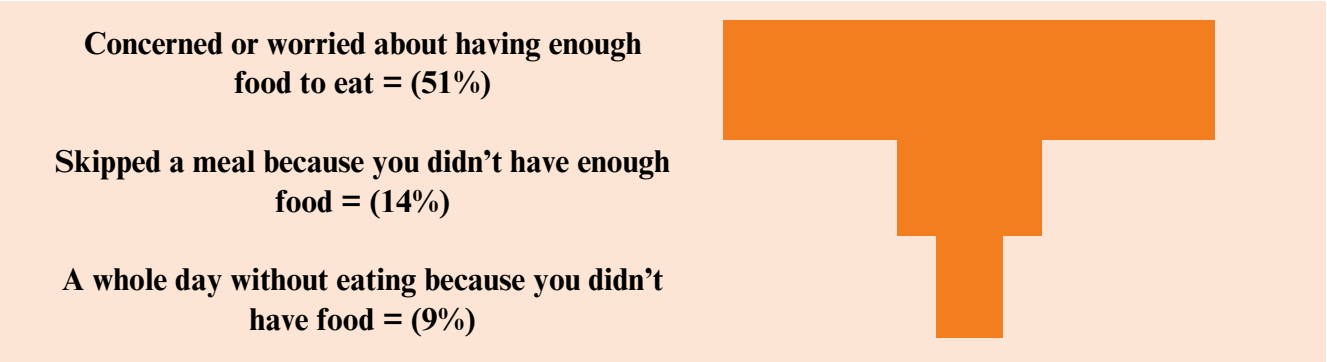



Figure C.3: Food security in Sagaing
*Source:* World Bank 2023c.

# D FOOD SECURITY IN SHAN STATE

**Shan State is the largest state in Myanmar (figure D.1) and is home to several ethnic groups. Throughout all three rounds of the WBFS,[20] crop farming is consistently the dominant occupation, surpassing the national average.**

## Access to food in Shan

Figure D.1: Shan State, Myanmar

**Access to grains is consistently robust: 98 percent of respondents had access in Round 3 of the WBFS, surpassing the national average of 95 percent.** This figure represents a rise from the Round 2 (92 percent) and Round 1 (95 percent) findings in Shan State. Access to fish mirrors this trend, remaining high. In Round 3, 98 percent could access fish in the last week, exceeding the national average of 95 percent. This represents an improvement from Round 2 (93 percent) and Round 1 (94 percent).

**In Round 3 (May 2023), Shan State had a high percentage of respondents reporting meat access (99 percent), exceeding the national average (95 percent) and scores from the prior two rounds (95 and 97 percent, respectively).**

Only Bago and Tanintharyi reported higher meat access rates. Additionally, 88 percent of respondents had dairy product access, a minor increase from an 85 percent overall average and the state's Round 2 score (87 percent), but still less than in Round 1 (91 percent).

In Round 3, 99 percent of participants in Shan State reported weekly fruit access. This figure exceeds the overall total of 94 percent and represents an improvement from 97 percent in Round 2 and 95 percent in Round 1. Access to vegetables remained consistently high across surveys, maxing out at 100 percent in Round 3, up from 98 percent in Round 2. All surveyed participants in Shan State had access to cooking oil in the recent week, well above the overall average of 98 percent, and significantly improved compared to 81 percent in Round 2 and 95 percent in Round 1.

[20] WBFS data collected in December 2021 (Round 1), May 2022 (Round 2), and May 2023 (Round 3).

About 98 percent of respondents in Shan State reported access to beans and pulses in Round 3, surpassing the total average (95 percent) and showing improvement from 96 percent in Round 2 and 93 percent in Round 1. Figure D.2 compares household food group access in Shan State to national findings.

**While access to food in Shan State typically exceeds national averages, it is crucial to highlight that people's food behaviors are undergoing significant changes due to various factors, including affordability and access challenges.**

## Barriers to access

**Several barriers hinder access to various food groups in Shan State. While generally accessible, of those respondents who could not access grain, 67 percent cited price increases as the main obstacle.** This figure is higher than in previous rounds (50 percent in Round 2 and 20 percent in Round 1) and the national average (36 percent). Among the few respondents who could not access fish, stated issues were decreased stock, rising prices, and poor weather. Meat accessibility notably improved, with only one person in Round 3 blaming poor transportation, unlike past rounds where money shortages and shop closures were cited. Fruit accessibility also ameliorated, with a sole respondent pointing to limited transportation as an issue, an improvement from prior rounds. Though only a few respondents had trouble accessing beans and pulses, they named insufficient funds, poor transportation, and price hikes as barriers. For dairy products, respondents mentioned transportation (43 percent) and price issues (29 percent) as enduring challenges. Despite this, dairy remains generally accessible in Shan State.

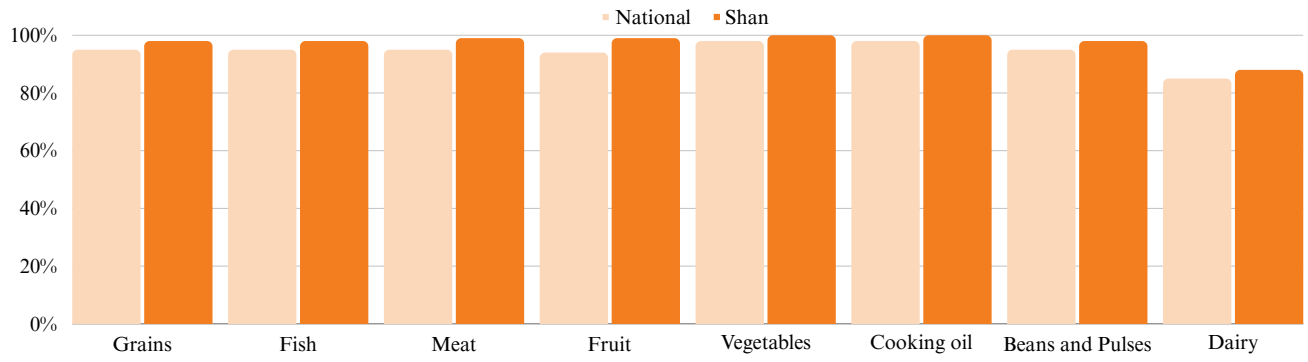



Figure D.2: Shan State access to food
*Source:* World Bank 2023c.

**Despite Shan surpassing the national average in securing basic food items, household changes to food behaviors indicate serious underlying problems.**

# Consumption and coping strategies

**In Round 3, most food item consumption fell in Shan State, barring grains, which people consistently consumed across all rounds (100 percent).** Potatoes, pulses, nuts, and dairy products all saw decreased consumption from Round 2 to Round 3. Vegetable and fruit consumption also fell yet remained relatively high, while meat, poultry, and fish saw sharp declines. Shan State had higher consumption rates for potatoes and nuts but lower rates for fruits and eggs than the national average.

Shan State saw a decrease in 2023, with the HDDS dropping from 10.17 to 8.11, signaling reduced food consumption. This suggests less diversity in diets, possibly leading to potential nutritional deficits. It also indicates an increased dependency on select staple foods, which could result in an imbalanced diet.

**Survey results reveal that over the past year, 48 percent of participants expressed concern about having sufficient food, denoted in figure D.3.** This percentage depicts an upturn from the previous rounds: Round 2 at 27 percent and Round 1 at 24 percent. This high and rising concern about food availability underscores the severity of this situation.

**In Round 3, 8 percent of participants had skipped a meal within the past year due to food scarcity, a figure falling in line with the national average but exceeding past survey rounds, indicating a distressing rise in food insecurity and its effects on meal consumption.** Only one participant reported going a full day without eating within the same timeframe due to absent food, marking the first such instance in Shan State. Even though this situation is less prevalent than the national average, the overall results underline the considerable challenges Shan State's residents face, as they often lack sufficient food and exhibit poor dietary variation despite broader progress in food availability. The persistent proportion of people skipping meals and the lower HDDS score underscore continuing difficulties and advocate for targeted efforts to alleviate food insecurity and enhance regional dietary diversity.

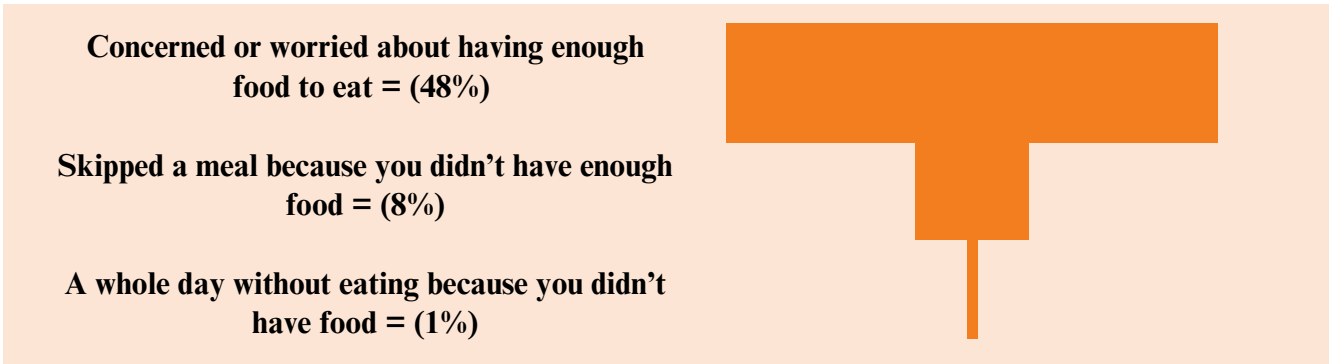



Figure D.3: Food security in Shan
*Source:* World Bank 2023c.

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