



Economic Impacts of World Food Program Expenditures in Sudan

The WFP program spent \$125 million in Sudan in 2020. Of this, 89% or \$111.5 million was on domestic purchases, including food and services, with most of the rest imported from other countries in the Regional Bureau of Nairobi (RBN) area. WFP also spent money in other RGB countries that, in turn, imported goods and services from Sudan. Compared to the entire economy of Sudan, \$125 million might seem small; it is equivalent to around 0.3% of a total GDP that exceeded \$41 billion in 2020. Nevertheless, each additional dollar that the WFP spent on its operations in the RBN region had a disproportionately large impact in Sudan because of the production, income, and employment spillovers it generated.

How Do WFP Operations Create Economic Benefits?

WFP's mission is "To support food security and nutrition and (re)build livelihoods in fragile settings and following emergencies." The WFP accomplishes this by spending large sums of money on food, logistics and other non-food goods and services in Sudan and other RBN countries. This spending stimulates production and incomes in the directly affected activities and countries. As the impacts of WFP operations work their way through RBN country economies, they spread across businesses and households within each country as well as to other countries, through trade.

For example, the WFP RBN contracts with traders who buy from Sudan's farmers. Farmers, in turn, purchase farm inputs and hire workers. This transmits impacts of WFP spending from traders to farmers to input suppliers and farm workers. Farm and farmworker households spend their income on goods and services supplied mostly by local businesses. As businesses expand their production to meet the demands of other businesses and households, they hire workers, purchase inputs, and generate profits. This triggers multiple rounds of impacts on production, income, employment, and spending in the Sudanese economy. It also stimulates trade with other RBN countries that export goods and services to Sudan. Because of this, the amount that WFP RBN spends represents only

part of the full impact of WFP RBN spending. There are also production, income, and trade spillovers, or secondary impacts. When added to the WFP RBN's expenditures, these spillovers can result in production and income multipliers: a dollar of WFP spending can raise production and income in Sudan and the region by more than one dollar.

The World Food Programme's (WFP) total portfolio in Regional Bureau Nairobi (RBN) countries is more than USD 745 million annually. In 2019, the RBN region moved 1.1 million MT of food throughout the region. It disbursed USD 270 million in cash to 5.4 million beneficiaries in the countries covered by RBN. It procured and supplied more than 500,000 MT of food from local, regional, and global sources. These numbers increased further with the inclusion of Sudan in the RBN beginning in December 2020. This spending is vital to the humanitarian operations of the WFP. It also has economic impacts on RBN economies, potentially creating large income and production impacts in the region.

How Do We Quantify the Economic Impacts of WFP Spending?

This study used state-of-the-art economic modelling tools to estimate the economic impacts of WFP's expenditures in RBN countries and in the East Africa region as a whole. The multi-country model to assess WFP's "economic footprint" in East Africa is grounded in the Global Trade Analysis Project (GTAP) framework

(Hertel 1997). It consists of applied general equilibrium (AGE) models of individual RBN countries linked by trade within a larger, regional RBN model. The RBN AGE model is global but flexible enough to quantify impacts of WFP spending in individual countries as well as across the East Africa region.

The initial impact of WFP's expenditures in the region are on the vendors (wholesalers) of food and other goods and services with which the RBN contracts. RBN personnel worked with the research team to itemize all of these food and non-food expenditures, by sector and vendor (see Panel A of Figure 1). A survey of WFP suppliers gathered information on where the vendors sourced each item they sold to the RBN. This made it possible to link each RBN expenditure to individual countries and production sectors (Panel B). The RBN AGE model takes these country- and sector-specific expenditures and estimates their economy-wide impacts within each RBN country as well as across the East Africa region, using simulation techniques (Panel C).

This method captures the full impacts of WFP RBN spending, including direct impacts on production sectors and indirect spillover effects within and across countries. The study focused on quantifying the impacts of WFP RBN spending on the value of production (gross sales) in each sector; total real (inflation-adjusted) income or Gross Domestic Product (GDP); and both skilled and unskilled employment. We do not consider the impacts of WFP's cash disbursements to households, which would add to the impacts shown below.

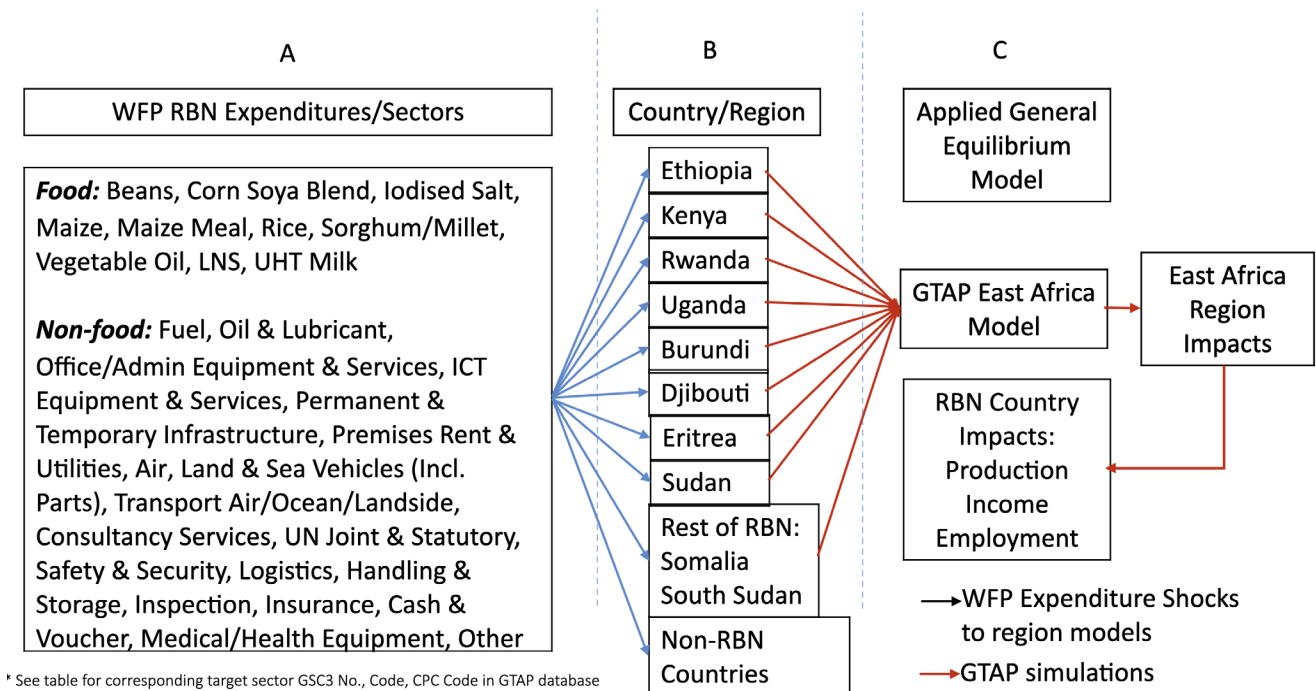
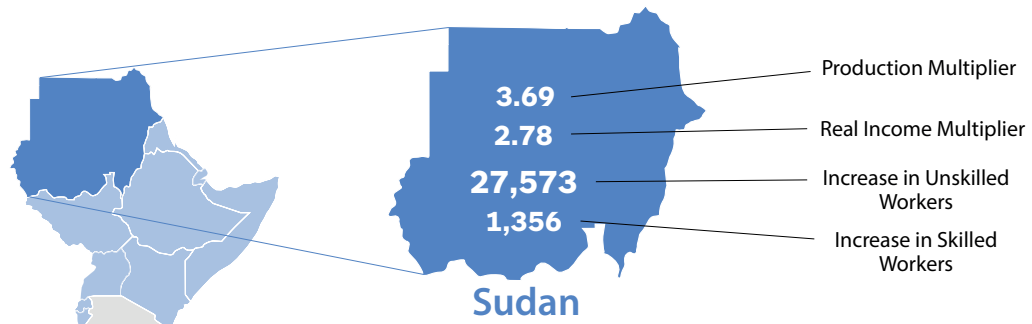
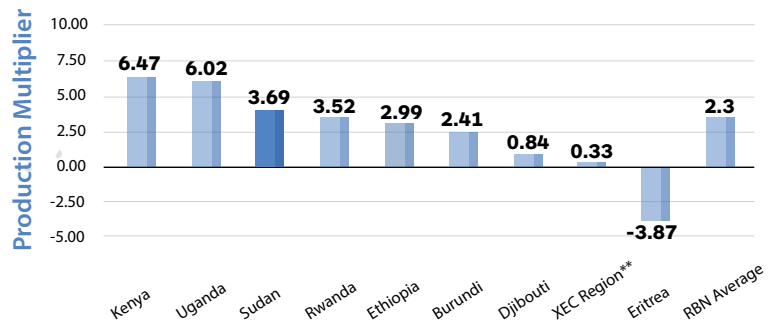


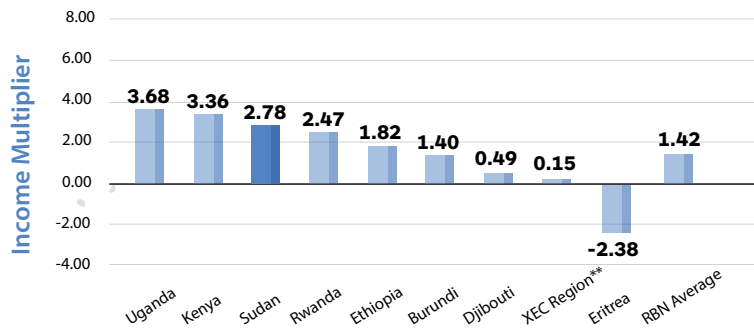
Figure 1. Modelling Impacts of WFP RBN Food Expenditures



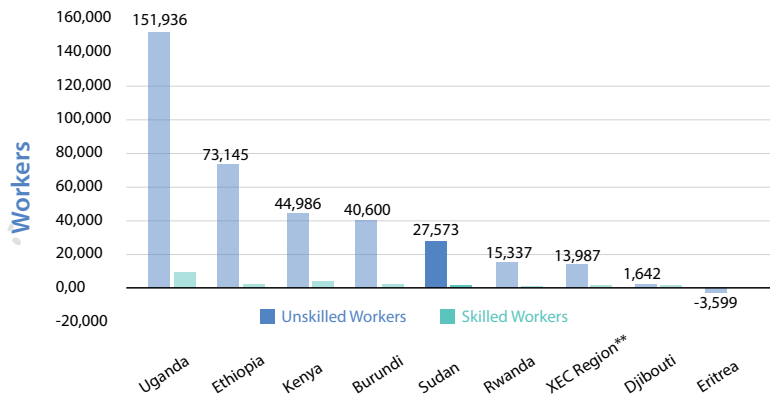
Production Increase per \$1 of WFP Spending



Real (Inflation-adjusted) GDP Impact per \$1 of WFP Spending



WFP Impact on Employment*



* Year-round equivalent jobs
 ** XEC Region (includes South Sudan, Comoros, Mayotte, Somalia and the Seychelles)

Figure 2. WFP operations have large production, income, and employment impacts in East Africa

What Did the Study Find?

Approximately 89% of the WFP RBN's \$125 million of expenditures in Sudan, or \$111.5 million, were on purchases of domestic goods and services. The rest were on imports. Of the \$13 million spent on imports, some 43% were on purchases from other RBN countries, and the rest were on imports from the rest of the world. Of WFP's total spending in other RBN countries, 9% was on exports from Sudan to those countries. The largest WFP expenditures in Sudan were on transport (\$67 million), trade including warehousing (\$19 million), refined petroleum (\$18 million), and various manufactured products (excluding refined petroleum, \$7 million).

The study found that each dollar of WFP spending in Sudan creates a \$3.69 annual increase in the country's total production. This multiplier includes the dollar of WFP expenditure plus an additional \$2.69 of production spillovers that magnify and spread impacts across production sectors. It is the third highest production multiplier of WFP spending among all countries in the East Africa region. A positive production multiplier of this magnitude tells us that WFP spending stimulates production, benefiting Sudan's farm and especially non-farm businesses.

As production expands, income flows into households, stimulating consumption demand and additional rounds of production increases in the economy. Rising demand also can put upward pressure on prices of goods and services. Price inflation raises consumption costs and creates the possibility that, even if cash income expands, real or inflation-adjusted income could fall. These inflationary concerns tend to be muted in economies like Sudan's, where workers and capital are likely to be available to support increased production.

An additional dollar of WFP spending raises Sudan's total real income, or GDP, by \$2.78 per year. This is the third highest real income multiplier from WFP spending in the region, after Uganda and Kenya. This positive real income multiplier tells us that WFP spending results in a net income and welfare gain for Sudan's households.

Production requires labour; as production expands, so does employment. WFP RBN spending creates 27,573 jobs for unskilled workers and 1,356 jobs for skilled workers in Sudan each year. The relatively large impacts for unskilled employment indicate that WFP spending stimulates demand in sectors that hire large numbers of unskilled workers. These positive employment effects reveal that WFP spending creates jobs for Sudan's workforce.¹

¹ The production and GDP multipliers were calculated by dividing the impacts on Sudan's total value of production and GDP, respectively, by the amount of WFP spending in Sudan. The total employment effect of WFP spending is the increase in total wage income divided by the average wage, converted into year-round equivalent jobs.

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References

Erwin Corong, Justin Kagin, Edward Taylor and Dominique van der Mensbrugge (2022). Economic Impact Assessment of World Food Program Expenditures in East Africa: Final Report on Aggregate Impacts. Nairobi: United Nations World Food Program.