

## ANALYSIS OF FOOD AID SUPPLY CHAIN DATA FOR THE PERIOD APRIL 2011-SEPTEMBER 2016

Summary of a Report from the Food Aid Quality Review Project (FAQR)

### BACKGROUND

In January 2019, the FAQR Supply Chain workstream completed a comprehensive data report. Though the report is not publicly available, the objectives and content of the report are summarized below.

The objective of this study was to deepen our understanding of USAID/FFP food aid procurement and shipping practices in order to identify potential efficiency gains. The team examined USAID/FFP procurement data (under Title II humanitarian food aid operations) from April 2011 through September 2016. The goal was to highlight patterns in prices paid for specific products and the prices paid for procurement and shipping these products, and the cost-effectiveness of these transactions. This study highlighted several important factors that influenced the prices paid for food products and the costs associated with storing and shipping these products. If these factors can be addressed, then efficiency gains may accrue to USAID/FFP and partners, with potential increases in total amounts of food aid supplied.

### KEY FINDINGS

USAID/FFP, the world's largest contributor of food aid, responded to assessed needs by providing more than 4.5 million MT of bulk commodities and over 2 million MT of packaged commodities between April 2011 and September 2016. These donated food aid products reached hundreds of millions of individuals and families. The total value of these food aid products was over \$3 billion and the cost of shipping these items from the United States to recipient countries was more than \$1 billion.

Between 2011 and 2016, there were two major recipients of food aid (Ethiopia and Sudan), with the third largest “destination” of food aid products being ‘transit’ warehouses located on foreign soil. Most of the prepositioned products were also ultimately destined for Ethiopia and Sudan.

USAID/FFP operations are generally very timely; once products have been delivered by suppliers, most shipments are delivered to recipient countries within one month, contrary to a widely-held belief that food aid takes at least 6 months to reach recipient countries. That said, the study also identified some potential cost-saving opportunities.

The prices of most, but not all, commodities purchased by USAID/FFP trended downwards over the 2011 to 2016 period, in line with falling global food prices in the wake of the 2011/2012 food price crisis. This is good news for procurement officers and for budgets because the same amount of money spent on food aid assistance can reach more beneficiaries.

Food production is a highly seasonal business, and there are seasonal patterns of demand for agricultural products as well. National and global storage capacity is insufficient to completely “smooth out” all seasonal fluctuations in commodity prices, and these fluctuations potentially can be tapped for efficiency gains. Importantly, there is marked seasonality in shipping costs, too.

Taking advantage of seasonal swings in product prices and shipping costs requires decision-making and procurement timeframes that extend beyond the peaks and troughs of these products/services’ market

prices. Changes in purchasing rules, and perhaps in legislation, may be required to extend these timeframes, and the benefits of doing so are likely to be substantial.

Class of shipping service (US-flagged versus other vessels) can be a key factor in determining the overall cost of moving food aid products. Advance planning and forward shipping contracts could allow for efficiency gains without compromising commitments to meeting legal requirements.

## VALUE-ADDED TO USAID/FFP

The factors highlighted in the report may be familiar to individuals directly involved with procurement and shipping (including inland transportation) of food aid products, but the hope is that the data and analytical results presented will provide more concrete empirical evidence to support ongoing and new efforts to improve the efficiency of USAID/FFP processes and decisions.

Economic efficiency is not the *only* characteristic of food aid procurement/delivery systems that matters. Supplying large amounts of aid to food-insecure populations in timely fashion requires supply chains that are fast and well-organized. Better planning by using improved supply chain decision support tools could lead to significant efficiency gains while also ensuring that appropriate food aid products reach the right beneficiaries at the right time. Developing and implementing effective decision support tools in humanitarian operations is not easy (Holguín-Veras et al. 2012), but the potential benefits of doing so are huge. In Iraq operations, for example, WFP used the OPTIMUS supply chain optimization tool to reduce food distribution costs by more than 17 percent, while still supplying 98 percent of calories and additional micronutrients to targeted beneficiaries (Peters et al. 2016).

## NEXT STEPS

The next step in the FAQR food aid supply chain research agenda is to finalize the development and test of an economic optimization tool capable of identifying alternative options for purchasing, routing, and prepositioning products to meet the needs of food aid beneficiaries more quickly and more cost-effectively.

### FULL REPORT:

Tasci, Keziban, Ramzi Talhouk, Ozlem Ergun, Stephen Vosti, Shelley Walton, Patrick Webb, and Quentin Johnson. *Analysis of Food Aid Supply Chain Data, April 2011-September 2016*. Boston, MA: Northeastern University, 2019. (Not publicly available.)

### OTHER WORKS CITED:

Holguín-Veras, José, Miguel Jaller, Luk N. Van Wassenhove, Noel Pérez, and Tricia Wachtendorf. “On the unique features of post-disaster humanitarian logistics.” *Journal of Operations Management* 30, no. 7-8 (November 2012): 494-506. <https://doi.org/10.1016/j.jom.2012.08.003>.

Peters, Koen, Ozlem Ergun, Hein Fleuren, Rui Gonçalves, Dick den Hertog, Mirjana Kavelj, Sérgio Silva, and Mallory Soldner. “The Nutritious Supply Chains: Optimizing Humanitarian Food Aid.” *Operations Research* (May 2016). <https://doi.org/10.2139/ssrn.2880438>.

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