FEASIBILITY ANALYSIS OF QR CODE ADOPTION

BUREAU FOR HUMANITARIAN ASSISTANCE

Overview of the Assessment

The United States Agency for International Development (USAID) Bureau for Humanitarian Assistance (BHA) plays a lead role in efforts to provide humanitarian assistance to the world's most vulnerable and hardest-to-reach people. USAID/BHA provides food commodities grown by American farmers when partner country food supplies are limited or inaccessible. In fiscal year 2019, these U.S.-sourced products accounted for approximately 41 percent of USAID's $4.38 billion food assistance budget and over 1.7 metric tons of food.

USAID/BHA requested that the USAID-funded Learning, Evaluation, and Analysis Project (LEAP III) team conduct a feasibility study to provide decision-makers with a thorough understanding of the investments, procedures, and incremental costs and benefits of implementing information technology (IT) solutions, such as an Automatic Identification and Data Capture (AIDC) system that uses Quick Response (QR) codes, across the U.S. food aid supply chain. This study gave insights as to how the

enhanced data visibility provided by these IT solutions could affect the management and governance of food aid in terms of improved accountability, planning, and reporting.

Methodology

The team worked extensively with BHA to develop a comprehensive approach to carry out an analysis that assessed the feasibility and potential impact of implementing the new IT supply chain management solutions. This approach is guided by three analytical components:

- Technical Feasibility – The feasibility of the USAID's investment will depend on the functionality of available technology.

- Operational Feasibility – The introduction of a new IT system in a large organization like BHA, and its rollout through a supply chain with many partner organizations is complex and subject to many barriers. Therefore, the overall feasibility of this investment depends on the strategy and implementation plan to roll out the IT solutions.

- Economic Feasibility – An economic cost-benefit model was used to compare the estimated costs and benefits of changing from the status quo to the proposed IT solutions. For the economic analysis to result in a strong policy argument, the team took a conservative approach and compared a defensible sunset of benefits with an upper bound for costs.

Assessment Findings

There is a strong economic argument for investment in tracking and tracing. The team met with numerous stakeholders from around the world and discussed the costs inherent in the current way food aid is tracked and traced. The lack of clarity on the current volume of food lost in the supply chain is evident to the issues that arise when an IT solution is not in place. Through surveys and interviews with different segments of the supply chain, the team has estimated that roughly 2 percent of food is lost in the supply chain each year. The respondents also indicated that about 30 percent (0.58 percentage points) of these losses could be avoided, should an AIDC system become operational.

There remain two sources of risk for this investment. The first is the potential for the AIDC system to be delayed or fail to enter operations, which could happen for several reasons, including a lack of stakeholder support. Secondly, small changes in the marginal costs of commodity packaging could be costly when extended to the entire supply chain. Even a marginal cost of five cents per bag would have a significant impact on the economic viability of this investment. Based on conversations with multiple stakeholders, the team expects any increase in the marginal cost of packaging to be primarily associated with the increased cost of getting QR codes print on woven Polypropylene bags.