

Cost Efficiency Analysis

Non-Food Items Vs. Cash Transfers



As the scale and complexity of humanitarian emergencies grow, an unprecedented number of crisis-affected people are in need of support to meet their basic needs. Common programs, such as distribution of food and non-food items (NFIs), are successful at meeting population needs, but are often criticized for being expensive and logistically complex to address increasing demand. In contexts with functional local markets, many humanitarian agencies are beginning to consider substituting cash transfer programs—where beneficiaries are directly provided with the means to purchase the goods they need and want—for traditional in-kind assistance. Some existing studies have explicitly compared the efficiency and effectiveness of cash transfer versus NFI programs,¹ but few were conducted in emergency contexts. To better understand the trade-offs, the International Rescue Committee (IRC) conducted methodologically identical analyses of its cash and NFI programs to compare their cost efficiency.

This analysis considered seven NFI distribution programs from six countries, examining the “ingredients” necessary to implement the programs, the cost of each program per dollar of value transferred, and how cost efficiency is influenced by programmatic and contextual features. The results are compared to the cost efficiency estimates for eight IRC cash transfer programs, discussed in “Cost Efficiency Analysis: Unconditional Cash Transfers.”

- **Looking at IRC distributions from 2014–2015, the average cost per dollar of value transferred to clients was approximately 25 cents in the Middle East—not very different from the cost efficiency of unconditional cash transfers in that region.** This may be, in part, due to the size of the NFI programs relative to the cash programs to which they were compared; as a result, ‘fixed’ costs like warehousing decreased per dollar of goods that moved through them.
- **However, comparing programs of the same scale in the same region reveals that cash transfer programs were more cost efficient than NFI programs.** Comparing cash and NFI programs that served fewer than 1,000 households, NFI programs cost more per dollar of value delivered than cash programs of the same scale. No data was available at the time of this analysis for cash transfer programs serving more than 1,000 households; this will be incorporated into future analyses as financial data from recent large-scale cash distributions becomes available.
- **NFI programs demand additional staff and resources to manage the warehousing of physical goods, but these costs are small relative to the value of the goods distributed when NFI programs are large.** Because NFIs have served as a cornerstone of humanitarian programming for decades, the procurement, warehousing, and transportation systems to deliver these goods are large and well established, allowing the IRC to take advantage of significant economies of scale.
- **The IRC is making a strategic shift towards cash transfers in contexts with functional markets due to these potential efficiency gains, as well as greater flexibility for clients and local markets stimulus that cash transfers encourage.**

¹ Doocy, S. and Tappis, H. “The Effectiveness and Efficiency of Cash-based Approaches in Emergencies: A Systematic Review.” The Campbell Collaboration. February 2015.

The in-kind distribution of NFIs is a common way to meet population needs in emergency responses, as compared to providing longer-term support for chronically at-risk populations. In contrast to many cash distribution programs studied with cost efficiency analysis,² the IRC's NFI programs studied here primarily gave one lump sum distribution rather than smaller deliveries periodically during a several-month period. These distributions take many forms, from specific kits to meet needs in a certain sector—like hygiene kits or women's dignity kits—to more general kits that include a wide variety of household items, such as laundry soap, cooking utensils, tarps, and blankets. In the Syria region in particular, many agencies provide winterization kits at the onset of the cold season, which include heating fuel, blankets, and tarps for weatherproofing shelters.

In addition to the variety of items, the actual distribution of NFIs can vary in practice. In places with recurrent crises the IRC keeps a pre-positioned stock of NFI items for distribution in case of sudden need. The IRC may also procure goods directly in response to a particular crisis. Where markets are not functioning at all, the IRC distributes items directly to the affected population—a task that, in some cases, requires dangerous cross-border travel into remote or conflict-affected areas.

Each of these differences in program format—the type of NFIs delivered and the procurement mechanism—could influence the cost efficiency of a program. As much as possible, this analysis included programs that delivered NFIs to serve a family's total basic needs during an emergency, and sought to ensure that

differences in the value of goods given did not drive analysis results. Programs that distributed only hygiene kits or dignity kits were excluded.

The average scale of the NFI distribution programs between 2014 and 2015 was observed to be much larger than the average scale of the cash transfer programs studied, with all but one program serving 1,000 households or more. The smallest program in this analysis—a one-time distribution to 600 households in Iraq—was still larger than the median program in the cash transfer analysis. This could influence the results of a comparison between NFI distribution and cash programs: programs at larger scale tend to be more cost efficient, because fixed costs—for example, the staff who process payroll in that country program—are spread over a larger pool of clients, driving down per-client costs.

For every program included in this analysis, IRC staff collected data from narrative documents, logframes, budgets, and expense reports to identify all the spending lines for the program. IRC staff separated all costs that were not relevant for the delivery of NFIs specifically and, for each remaining “ingredient,” they recorded the unit cost, number of units needed, and percent of that unit dedicated to the NFI delivery program versus other programs in the country at that time. For programs that produced multiple outputs—for example, some grants also funded hygiene kits or protection services for displaced people—IRC staff estimated the proportion of each line that was relevant for basic needs, specifically NFIs. All prices were translated into 2014 U.S. dollars;

Programs in this Analysis

Program	Program Location & Year	Households Served	Value of NFI Package	Items Given	Procurement
1	DRC 2014	32,010	\$54	Basic needs kit	Pre-positioned stock
2	Ethiopia 2015	5,033	118	Basic needs kit	Pre-positioned stock
3	Nigeria 2015	1,136	\$27	Basic needs kit	Normal procurement
4	Iraq 2014	600	\$22	Basic needs kit	Normal procurement
5	Iraq 2015	1,430	\$239	Basic needs kit	Normal procurement
6	Iraq 2015 #2	2,503	\$141	Basic needs kit	Normal procurement
7	Turkey 2015	1,186	\$150	Basic needs kit	Normal procurement

² See the IRC's *Cost Efficiency Analysis: Unconditional Cash Transfers*



for programs that lasted more than one year, the present value was taken using a 5 percent discount rate.

Finally, ingredients were distinguished in five categories:

- 1. Shared Costs: Support**—Administrative services, such as finance, payroll, and supply chains, which are shared jointly by all programs in a given country
- 2. Shared Costs: Program**—Programmatic management, which is shared across multiple programs in a country or sector
- 3. Capital Expenses**—Assets for program staff, such as computers, motorbikes, or satellite phones
- 4. Distribution Activities**—All staff time, transportation, warehousing costs, and materials
- 5. Value of NFIs**—The dollar value of the NFIs distributed by that grant, based on market prices

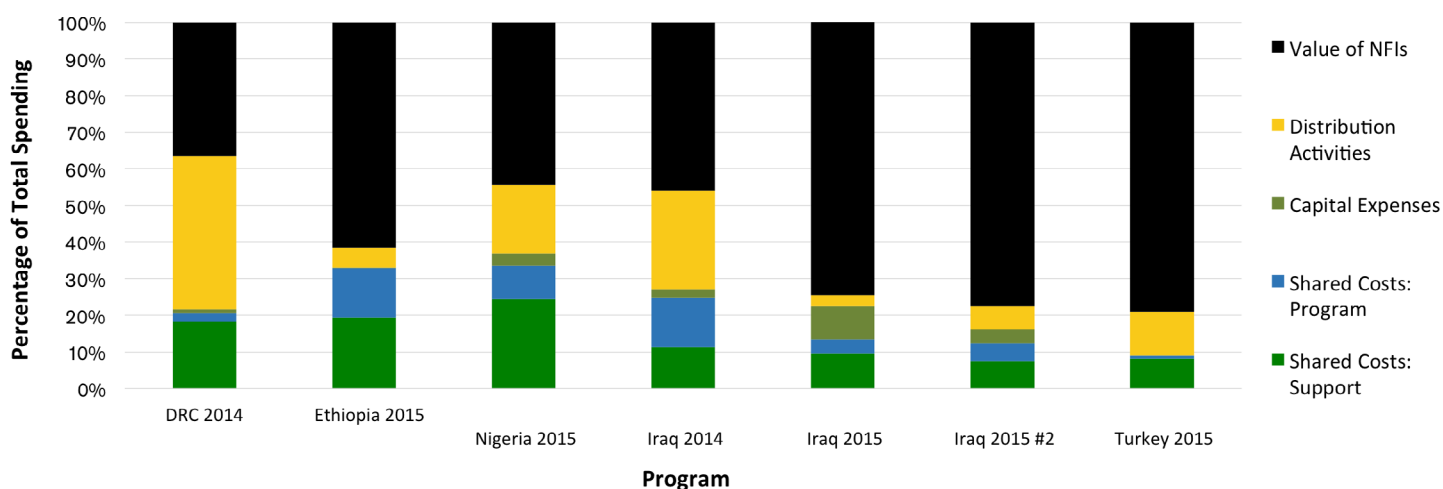
Some limitations exist to this method of analysis. Because donors place restrictions on the value or structure of country management costs funded by particular grants, grant budgets do not necessarily represent the exact amount of shared resources used by a particular program. To address this potential for biased comparisons between programs, cost efficiency data is herein presented with and without those shared program costs.

This analysis also used the purchase price of goods to estimate the value of NFIs delivered, meaning that

currency fluctuations could affect results. Because market prices for the same goods differ across countries, the value of NFIs in countries where the dollar has low purchasing power will necessarily be lower; in other words, the value of NFIs (see Figure 1.) should always be a smaller proportion of the overall costs in countries with lower price levels for the basic goods being supplied. Despite these limitations, it is still possible to learn valuable lessons about efficiency-improving changes to program selection or design.

While cost listings show that NFI programs demand additional resources to manage the warehousing of physical goods, such costs are small relative to the value of the goods distributed in very large programs. In the 2015 program in Ethiopia, for example, more than \$580,000 worth of NFIs were delivered, but the costs of two warehouse spaces and a warehouse officer during the life of the grant came to only \$14,000—less than 3 cents in warehouse expenses per dollar of NFIs handled. This can be seen, in part, as a reflection of the massive scale at which the IRC operates in these contexts, since warehousing costs can be spread over many projects. Country programs are renting warehouse space to store NFIs, as well as medical supplies, therapeutic food for malnutrition programs, and other goods. IRC staff can therefore take advantage of economies of scale to rent larger warehouses, as well as in the procurement of goods.

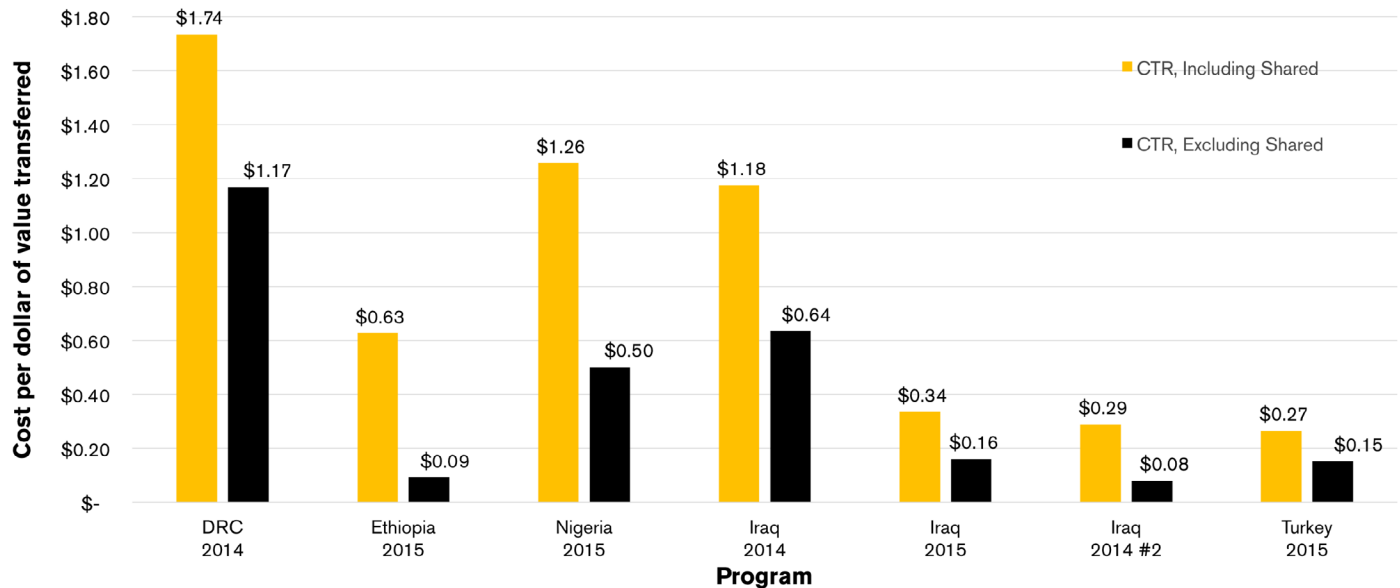
Figure 1. Cost Breakdown into Categories³



³The Iraq 2014 program in Figure 1 appears distinct from the other two Iraq programs primarily because it provided a lower-value NFI package to clients, meaning that the total value of the program—which tends to be driven by NFI purchases—was lower, and the distribution costs were therefore larger as a percentage of that total.

The average non-transfer cost per dollar of value transferred to beneficiaries is approximately 25 cents in the Middle East and around 60 cents in sub-Saharan Africa when the “shared” costs are excluded. For every dollar’s worth of NFIs delivered to clients, the IRC spends approximately 25 cents getting those items to their recipients in the Syria Response Region. In sub-Saharan Africa where goods are cheaper, the IRC spends approximately 50 cents on non-NFI costs for every dollar’s worth of NFIs distributed. When the shared costs of support functions and programmatic management are included, these numbers are roughly 50 cents in the Middle East and \$1.20 in sub-Saharan Africa.

Figure 2. Cost Efficiency of NFI Programs, Including and Excluding Shared Costs



Measuring Cost Efficiency of NFI Programs

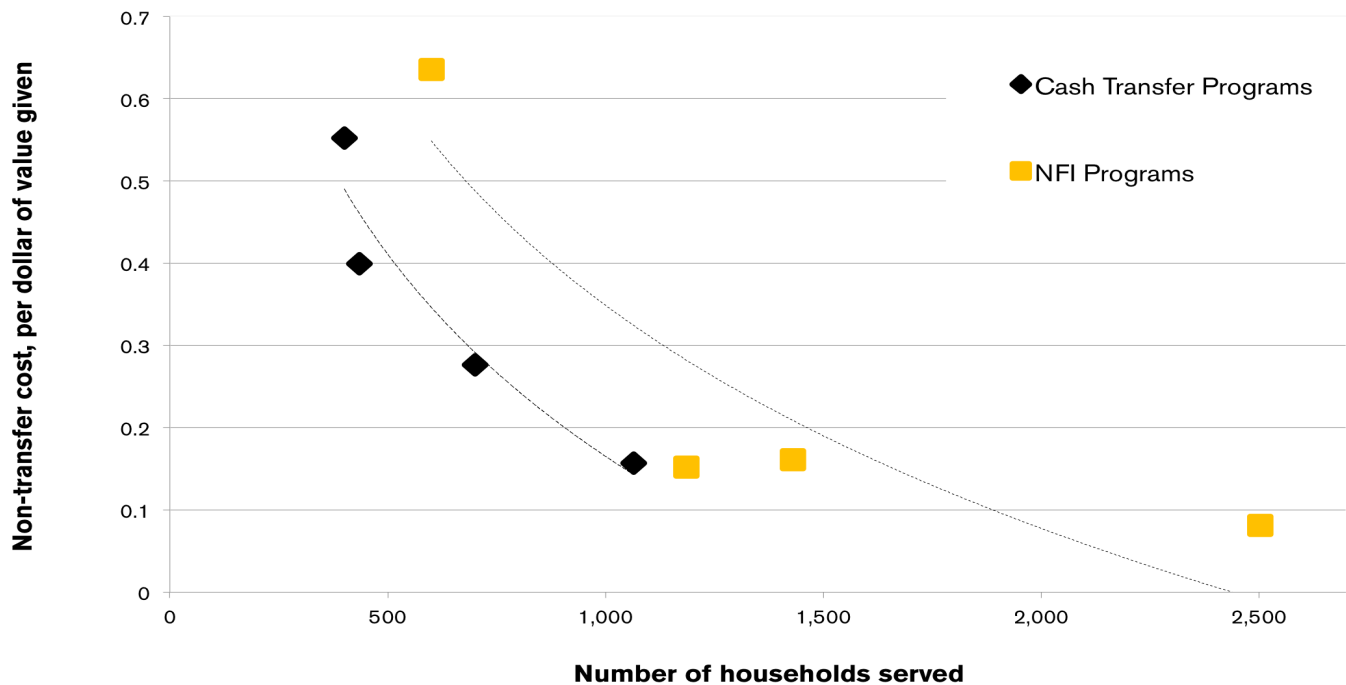
The academic literature uses the “cost-transfer ratio” (CTR) to measure the efficiency of cash transfer programs. Because the goal of this analysis is to compare NFI programs to cash programs, the same metric is used to examine NFI distributions. The CTR is the ratio of all non-transfer costs—such as management, transportation, and warehousing—to the total value that is transferred to clients, in this case, the dollar cost of the NFIs. The CTR is an intuitive measure because it shows how much is required to spend on non-transfer costs for every dollar of value delivered to clients.

$$\text{CTR} = \frac{\text{Non-NFI Costs}}{\text{Dollar Value of NFIs Distributed}}$$

The CTR has some drawbacks. Programs run in contexts where a dollar has greater purchasing power will always appear more cost efficient using this metric, simply because fewer dollars were needed to meet clients’ basic needs. When examining NFIs, there is also the question of whether the dollar value of an in-kind kit is directly comparable to giving a family that amount of money. On one hand, the IRC may be able to purchase items at a lesser cost because the organization can buy in bulk or procure more value per dollar than can clients. On the other hand, clients know better than humanitarian organizations what they need, and so the value an NFI kit has to a family may be less than the cost of the goods.

This emphasizes that cost efficiency should not be the sole measure used to compare cash and in-kind distribution programs. Many humanitarian organizations are expressing interest in cash programs because they offer greater dignity and flexibility to clients, and evidence shows that cash transfer programs have a multiplier effect on local economic activity. Cost efficiency metrics are not intended to capture every feature of a program; rather, they provide one additional piece of information among the many that decision-makers should consider.

Figure 3. Cost Efficiency of Cash Vs. NFIs, Syria Region



Comparing programs of similar scale, cash transfer programs were more cost efficient than NFI programs in the Middle East. The results are less clear in sub-Saharan Africa. The results of this analysis, and the IRC’s earlier analysis of cash transfer programs, show that for both types of programs cost efficiency increases when programs reach more households. The fact that a number of large-scale NFI programs is more cost efficient than a number of small-to-medium scale cash programs is not surprising. If we look at the cost efficiency of a cash program and an NFI program that both served 600 people, the cash program is more cost efficient than the NFI distribution in the Middle East region. The same comparison in sub-Saharan Africa programs is more complicated, because every one of the cash programs is smaller than the smallest NFI distribution, so it is not possible to compare programs of the same scale.

At the time of this analysis, no data was available regarding cash transfer programs serving more than 1,000 households, meaning a direct comparison of programs at larger scales was not possible. It seems reasonable that cash transfer programs would also be more cost efficient than NFI programs at very large scales, but it is possible that both types of programs reach some “floor” of cost-efficiency once scale is sufficiently large. The IRC will gather data through the forthcoming cost efficiency monitoring system and will explicitly test this hypothesis for larger cash programs in Africa as more information becomes available.

The results of this analysis suggest that, if the humanitarian community wants to increase efficiency by shifting to cash transfers, it needs to run such programs at scale comparable to current NFI programs. This will require the development of a new infrastructure dedicated to moving, targeting, and tracking cash rather than goods. The efficiency gains in switching from NFI distribution to cash transfer programs exist, but only if cash transfer programs are implemented at reasonably large scales. Switching from a large NFI program to a small cash program could actually decrease the efficiency of humanitarian aid in some contexts.

The investment necessary to develop targeting methods, delivery techniques, and a monitoring system for cash transfers requires context-by-context consideration. In 2015, the IRC’s Turkey country program made a strategic shift from in-kind goods to cash programming for their cross-border work into Syria. Thanks to a deliberate emphasis on building a scalable capacity for cash programming, the Turkey country program has since conducted five rounds of unconditional cash distributions each reaching between 1,700 and 4,000 households. As final financial data for these distributions becomes available, the Best Use of Resources initiative team will conduct similar analyses to quantify the cost efficiency of larger cash transfer programs.

Cost Analysis at the IRC

The IRC is committed to maximizing the impact of each dollar spent to improve our clients' lives. As the IRC's CEO wrote in a 2015 article in *Foreign Affairs*, "Donors need to not just double the amount of aid directed to the places of greatest need but also undertake reforms that seek to double the productivity of aid spending." The Best Use of Resource initiative is focused on improving the reach and impact of the IRC by using internally available data to better understand the cost of delivering key IRC interventions. Generating evidence about cost efficiency and cost effectiveness will enable the IRC to cost and compare different approaches and their related impact, ultimately allowing decisions that achieve the best use of resources.

"Cost efficiency analysis" compares the costs of a program to the outputs it achieved (e.g. cost per latrine constructed, or cost per family provided with parental coaching), while "cost effectiveness analysis" compares the costs of a program to the outcomes it achieved (e.g. cost per diarrheal incident avoided, cost per reduction in intra-family violence). Conducting cost analysis of a program requires two types of information:

- 1) Data on what a program achieved, in terms of outputs or outcomes, and
- 2) Data on how much it cost to produce that output or outcome.

Asking Ourselves "What Did a Program Produce?"

Units across the IRC produce a wide range of outputs, from obvious items like nutrition treatment or shelter kits to more intangible things like protection monitoring or case management. Cost analysis requires us to focus in on one output (for cost efficiency) or outcome (for cost effectiveness), such as the number of items produced or the number of people provided with a service. Such outputs will not necessarily encompass all the work that a program has done. For example, a WASH program may build water pipelines, latrines, and solid waste disposal pits; each of which could be defined as a single output. The Best Use of Resources initiative focuses on analyzing the IRC's key outputs, such as access to sanitation in refugee camps, malnutrition treatment, and case management services. The focus is not to dismiss other dimensions of our program's work, but to concentrate on one output, allowing for comparison of cost efficiency across programs and contexts in ways not possible if budget data at the program level was the only factor considered. The Best Use of Resources initiative team works together with IRC's Program Quality Unit to identify the most important outputs and understand how to quantify these outputs to improve the accuracy and efficacy of the results of analyses and use these improved results in programming decisions.

Asking Ourselves "How Much Did It Cost?"

After defining the output of interest, staff builds out a list of inputs that are necessary for producing that particular output. If one thinks of a program as a recipe, the inputs are all of the 'ingredients' necessary to make that dish. Budgets contain a great deal of information about the ingredients used and in what quantities, but a single grant budget will frequently cover several types of outputs, or program activities across multiple sectors. Therefore, not all line items in a program budget will be relevant to a particular output; to get an accurate sense of the costs of producing a particular output, staff categorize costs by the output they contributed to and count only those that are relevant to that particular output. Many of the line items in grant budgets are shared costs, such as finance staff or office rent, which contribute to an entire program's outputs. When costs are shared across multiple outputs, it is necessary to further specify what proportion of the input was used for the particular output. Specifying such costs in detail, while time-consuming, is important because it provides lessons about the structure of a program's inputs. We can divide costs into categories and determine whether resources are being allocated to the most important functions of program management, and enable us to model alternative program structures and quantify the cost implications of different decisions.

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