

Cost-Effectiveness Analysis Guidance for Impact Evaluations

Humanitarian Assistance Evidence Cycle

Motivation for a Cost-Effectiveness Analysis

USAID's Automated Directives System (ADS) establishes the requirements regarding program evaluation. [ADS 201.3.6.4](#) specifies that, "all impact evaluations must include a cost analysis of the intervention or interventions being studied." While an impact evaluation assesses the outcomes and effectiveness of a program or intervention, a cost-effectiveness analysis (CEA) provides a complementary perspective by evaluating the efficiency of resource utilization. By examining the relationship between costs and outcomes, a CEA helps decision-makers prioritize interventions that deliver the greatest impact relative to their costs. This consideration ensures that limited resources are allocated strategically and responsibly, maximizing the overall societal benefit. Ultimately, integrating a CEA alongside an impact evaluation allows for a comprehensive assessment that takes into account both the magnitude of outcomes and the efficiency of resource utilization, leading to informed decision-making and the optimal allocation of resources for maximum impact. These CEAs will contribute to a growing body of evidence for the drivers of cost that influence the scale and reach of USAID programming.

Analytic Approach

The goal of a CEA is to move beyond reporting total program costs and instead collect and transparently report detailed, itemized cost information.¹ The level of detail in cost data has implications for generating a more specific and useful cost-effectiveness estimate because it helps identify drivers of cost-effectiveness or the potential for cost-effectiveness of the program in another context or scale. Detailed costs allow others to examine the program model and assess whether the program cost would be the same in a different context or at scale.

¹ This brief borrows heavily from the JPAL (n.d.). JPAL Costing Guidelines. Found [here](#).



Tying Costs to the Impact Evaluation Research Questions

Because the CEA is structured the same way as the impact evaluation, your costs need to be structured to answer the same question(s) as the impact evaluation. There are three likely scenarios for conducting a CEA on an impact evaluation, all of which focus on identifying the incremental or marginal costs of the treatment group(s) compared to the comparison group:

1. If the comparison group does not have any interventions, then *all* relevant intervention costs in the treatment arm should be collected and analyzed. This will answer the question: **What does it cost to achieve the impact of this set of interventions in the treatment arm?**
2. If the comparison group receives some interventions and the treatment group receives another set of interventions (it does not matter if there is some overlap in these interventions), you will need to establish and analyze all relevant intervention costs in *each group*. To establish what the costs are for the treatment group vis-a-vis the comparison group, you need to subtract comparison group costs from the total treatment costs². This will answer the question: **What is the marginal or incremental cost to achieve the marginal or incremental impact using one set of interventions compared to another set of interventions?**
3. If the comparison group does receive some interventions and the treatment group receives those interventions *plus* some additional interventions (i.e., the impact evaluation is examining the effect of those additional interventions), then you only need to establish what are the costs that are *different than or in addition* to the costs for the comparison group. For example, if both the comparison and the treatment groups receive farmer field education but the treatment group also receives drought-resistant seeds, you will only need to consider the costs associated with the drought-resistant seeds (and not the farmer field education that both treatment and comparison groups receive). This will answer the question: **What does it cost to achieve the impact from this set of interventions that are additional to what the comparison group achieves?**

For all three scenarios, the outcome measure(s) in the CEA will match the outcome measure(s) in the relevant impact evaluation research questions.

Possible Research Questions for the CEA

Was it cost-effective to achieve this outcome measured in the impact evaluation? This will be the main research question for the CEA. This research question ties costs directly to relevant research questions that measure the impact of specific interventions or activities. By tying costs to the impact measure, you can start to build evidence on the efficiency of resources that were used to achieve impact and begin to understand if there may be strategies for achieving greater resource efficiency moving forward. Guidance is provided below on how to interpret your findings from the CEA to determine if the intervention(s) were relatively cost-effective.

² This may result in negative costs if the comparison group costs exceed the treatment group costs indicating cost savings. The CEA question would then become: What is the marginal or incremental impact using one set of interventions compared to another set of interventions and the associated cost savings per unit of impact?

The CEA should use at a minimum the implementer’s perspective of costs: often called the *program perspective*. While this perspective does not capture the true cost of providing economic development interventions to society (such as the cost of the farmer’s time or materials), it is a useful perspective for understanding the cost-effectiveness of activities. This perspective is often used to understand where cost savings can be achieved for the implementing organizations. Using an ingredient-based approach (explained below) will help answer questions about where cost savings may be possible.

Additional ways to examine the cost data may also help to answer these questions listed below, for anyone interested in digging into the cost data further:

What does it take to start-up and continue to operate this component? Costs can be divided into two large categories: development or start-up costs and recurring costs. Development costs are incurred once at the beginning of a program to set up program operations (e.g., initial meetings with community leaders, purchasing equipment) or to create program activities (e.g., developing training or outreach materials). Ongoing implementation costs are continually incurred for ongoing activities throughout implementation (e.g., rent for office space, wages for program staff, regular meetings, time cost for participants to pick up transfers, etc.). This information may be helpful to understand what the costs may be to implement the same approach in another context, especially if some of the materials can be used (lowering the overall start-up costs).

How much would this cost to scale the intervention? Understanding how to scale this intervention to more participants in the same or very similar context may be an interesting research question. This depends on whether a cost is fixed versus variable. Fixed costs do not scale with the number of participants or implementation sites (e.g., rent). Variable costs are incurred for each additional person, school, district, and so forth, included in the program. These costs might include salaries, trainings, and materials. Differentiating these costs allows practitioners to analyze how program cost-effectiveness varies at scale.

Analytic Calculation for CEA

To calculate a CEA, you need to divide all relevant costs of the treatment arm by the outcome achieved. This results in a cost per unit of outcome measure. Each cost-effectiveness analysis will result in an Incremental Cost-Effectiveness Ratio (ICER) that takes the following form:

$$ICER = \frac{\text{Costs for treatment arm}}{\text{Outcome achieved}}$$

In most cases, the outcome measures will be calculated as the average effect for households or participants across a population; in which case, your costs need to be calculated on a per household or per participant basis before they are inputted into the numerator.

To encourage standardization of CEAs, we are recommending the following outcome measures for the denominator:

- Costs per household or participant per increase in one Food Consumption Score (FCS)
- Costs per household or participant per increase in one Household Hunger Score (HHS)

- Costs per household or participant per increase in one point reduction in the Coping Strategy Index (CSI)

In a scenario in which your impact evaluation finds that the intervention increases the average household FCS by 5 points, you would calculate your CEA as follows to use the recommended standardized CEA outcome measure listed above:

$$ICER = \frac{\text{Costs for treatment arm}}{\text{number of households participating in the intervention}} * \frac{1}{5 \text{ FCS points}}$$

This will result in the intervention costs per household achieving a one-point increase in the FCS. When cost savings are present, the ICER would be negative, indicating that the intervention is both more effective and less costly than the alternative.

The numerator will present all relevant costs for each treatment arm (as identified in the “Tying Costs to the Impact Evaluation Research Questions” section above); however, itemized costs for each treatment arm should also be reported separately to inform the discussion on the CEA findings (see next section).

Interpreting the CEA Findings

Once you have a CER and the itemized cost analysis, it would be useful to provide some context as to if this activity was *relatively* cost-effective in the final evaluation. There are several ways to do this, and it may be advantageous to consider all four approaches if possible:

- **Benchmarking:** CEAs work best if you can compare your CER to CERs of other similar programs to determine if your approach was *relatively* cost (in-) effective and what cost ingredients may have been relatively (in-)expensive compared to other similar programs. However, we anticipate that the body of evidence in publicly available documents is too limited, at this time. You may have enough information within your own organization to compare or see if literature of similar programs may provide some insights for comparison to the CEA conducted.
- **Activity documentation review:** Review quarterly activity reports for any information about unexpected costs or changes in scope, implementation challenges that may have raised costs or diminished effectiveness, factors that may have contributed to over- or under-achievement of outcomes and their associated costs, etc.
- **Perception or feedback from the implementation team:** Discuss the findings with the implementation team and ask which costs were higher than expected or budgeted for, and what costs may have been lower than budgeted for. Perception data on which aspects were (not) done cost-effectively has value. Understanding the reasons for cost variances will be an important piece of information in interpreting the CEA results.
- **Expert opinion:** Seek input from experts in the relevant field or stakeholders who have experience in similar programs. They can provide valuable insights into what might be considered cost-effective in the given context and reflect on the findings from this CEA. These experts may be practice leads within your NGO/implementing organization.

Data Requirements

Most, if not all, cost data will come from the implementing organization and their finance team. This should only consider actual expenditures, rather than budgeted or any future expenditures, since it must tie to the impact evaluation data which examines the outcome of interventions that have already occurred (and therefore, already paid for). There are several complementary ways to calculate the cost data which may vary depending on how the financial system is set-up:

Component-based costing³: This approach allows for a detailed, disaggregated understanding of activity implementation costs by the components that make up an intervention (e.g., training activities, multi-purpose cash assistance distribution). Many CEAs will consider activity-based costing as many treatment arms focus on the effectiveness of different components or sets of interventions, necessitating examining costs that contribute to those components/interventions. This approach may make it easy to separate costs by start-up and recurring costs as needed.

Ingredient-based costing: This approach allows for a detailed, disaggregated understanding of the activity implementation costs by the resources (or “ingredients”) that are used during activity implementation (e.g., travel costs, per diems, office supplies). This approach can be a subset of a component-based costing approach, by examining exactly which ingredients contribute to those specific components that are part of the treatment arm. This approach may make it easy to separate costs by fixed and operational costs, as needed.

You may face some additional challenges in examining the costs; for example:

- **In-kind donations or anything that took time** (but no cost) should be considered in the CEA. Goods and services provided for free (e.g., volunteer time) were still necessary to implement the program and therefore should be added to the CEA at their estimated market value.
- **Cost to participants:** Participation in some activities may require participants to invest resources, both time and money. These might include the cost to travel to collect resources, or the time spent in trainings. It is important to note the amount of time required from participants. However, if the purpose of your research question is to understand the costs to the implementer or donor, then you may not include the participant costs. If you want to understand all costs to achieve the measured outcome, then you might consider including costs to participants.
- **Shared costs:** Some cost ingredients may be shared across different activities or components that are not part of the treatment arms, such as staff time. In this case, you should determine *what proportion* of the resource was used on the ingredient you are interested in. Use that proportion of the total costs to attribute a percentage of the costs to the ingredient in your research question.

³ This approach is typically called “activity-based costing” or “bottom-up costing” in the literature; however, the wording has been adjusted here to align with USAID Project Cycle terminology.

- **Averted costs:** If there are any costs that were replaced or discontinued as a result of the activity, you will want to subtract these costs from the CEA costs. For example, if you are considering farmer’s time and they are actually spending less time preparing for disasters as a result of the activity, you would want to calculate the value of their total time saved and subtract that from the total activity costs.

All cost data should be presented using the number of units and the price per unit.

Time period: Please take note of the time period in which costs are incurred. This is especially important if costs are incurred over more than one year. All costs need to be presented in real terms, by removing inflation. Inflation is the average change in the prices of goods in an economy over time, but these changes do not reflect a real change in the economic value of the commodity. For interventions over multiple years, you will want to use the first year of the intervention as the “base year” and report all prices in this year. If inflation in the country you operate in increases by 10 percent the next year (“Year 2”), all costs incurred in that country in Year 2 need to be reduced by 10 percent to convert them back to “real” values in the base year. This may become tricky if some costs are incurred in the local country and other costs are incurred in the U.S. or other places with different exchange rates. In your final evaluation, be clear what year your real values are reported in (i.e., what is the “base year” for the CEA).

Frequently Asked Questions (FAQs)

What if there is no measured effect in the impact evaluation?

The results of your impact evaluation may find that there was no impact, or not enough evidence to suggest there was an impact. In these cases, you do not need to tie the costs to the outcome measure. However, you should still report on the costs associated with implementing the approach to achieving the outcome, as designed in your pre-analysis plan (PAP).

What intervention costs can be excluded?

The point of costing is to estimate the resources necessary to implement the program itself—not the associated evaluation. Any costs of conducting the impact evaluation should be excluded from the CEA.

How extensive should we consider costs?

Ideally, all implementer costs that go into the interventions measured by the CER should be calculated. This includes costs for rent, utilities, support staff (e.g., monitoring staff and finance staff), etc. This may even include support staff in implementer headquarters if they played a role in the components or interventions measured in the CEA. This may be difficult to do in practice as it likely includes splitting the costs of these items (e.g., salaries) across multiple components/interventions to assign a proportionate cost to the intervention measured in the CER.

When would you want to consider other stakeholder costs (e.g. participants)?

Considering a societal viewpoint, a comprehensive CEA should encompass the expenses endured by all members of society, including program participants. When examining the perspective of a policymaker, it is important to acknowledge their concern for not only their own financial burdens but also the costs that the program in question will impose on the individuals it aims to assist. It is worth noting that time scarcity can

present a genuine challenge in certain contexts and for specific groups, such as women. Likewise, if a CEA is conducted to guide replication or scaling up of a program, it should incorporate these costs. Potential implementers would benefit from considering whether it is reasonable to expect participants to make investments.

However, when conducting a CEA from the standpoint of an implementing organization, the costs incurred by participants may not necessarily be included (e.g., time costs to pick up transfers). This approach is primarily focused on understanding the costs associated with implementation and identifying potential opportunities for cost savings.

Are there any examples of CEAs?

As this is a new requirement at USAID, there are limited examples in the resilience or humanitarian assistance space. USAID has begun to compile some resources on cost analysis, which can be found [here](#), including some publicly-available examples from cash transfers.

Additional Resources

Below is a list of further resources related to cost-collection and CEA.

- [USAID's ADS Additional Help Guidance on Costing](#): his additional help defines cost analysis and its purpose and identifies resources to help Operating Units (OUs) comply with the requirement.
- [USAID's Discussion Note on Cost Data Collection and Analysis](#): Among other things, this Note provides a general overview for technical staff in USAID Missions, Washington-based offices, and implementing partners who are interested in setting up systems and processes to collect cost data to allow for sector-specific cost analysis.
- [Comparative Cost-Effectiveness Analysis to Inform Policy in Developing Countries](#): a high-level paper outlining why cost-effectiveness is useful and what assumptions must be made in conducting CEA (Dhaliwal et al. 2013).
- [JPAL's cost guidance and cost template](#): Provides a good beginner's overview of CEA, alongside a basic and more advanced costing template.

Disclaimer

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