EDUCATION COST-EFFECTIVENESS BRIEF – Gindegi Goron

Bangladesh | 2023

Executive Summary

In 2023, the International Rescue Committee (IRC) implemented a 7-month early childhood development (ECD) program for the Play to Learn (PTL) initiative with Sesame Workshop. PTL's Gindegi Goron delivered remote and in-person health, nutrition, and ECD support for caregivers of 0-2 year old children in Cox's Bazar's Rohingya and host community. From May to December 2023, Gindegi Goron reached 1,268 children and their mothers.

The International Centre for Diarrheal Disease Research (ICDDR,B) led an impact evaluation of the Gindegi Goron program in collaboration with the IRC and Sesame Workshop research teams. The evaluation included a cost-effectiveness analysis conducted by the IRC's Best Use of Resources team, analyzing the cost-effectiveness difference of two treatment arms: (1)"Remote" treatment, which includes the provision of interactive voice recording (IVR) messages, ECD kits, and live facilitator calls, and (2) "Hybrid" treatment, which includes the addition of in-person home visits to the base Remote treatment.

The cost to implement Remote is $98 per child, while the cost to implement Hybrid is $203 per child. The largest cost difference between Remote and Hybrid results from the treatment arms' spending on National Staff, with Hybrid requiring 15% more staff time than Remote.

Impact evaluation researchers found that, compared to Remote, Hybrid had no significant marginal impact on the program's primary outcome of interest, early child development, or on home stimulation. Combined with costing more than twice as much as Remote per child, the addition of home visits to the Remote treatment cannot be considered cost-effective and should not be implemented as they were tested in this model. Remote appears to be a cost-effective treatment which yields the same moderately positive impact on early child development as Hybrid. Remote showed a 0.22 increase in standard deviations for ECD outcomes while demonstrating comparatively high-cost efficiency to other IRC-implemented ECD interventions and potential returns to scale.

Project Description

Since 2012, violence against the minority Muslim population in Myanmar has resulted in the displacement of hundreds of thousands of people from the Rohingya ethnic group, now the world's largest stateless people. More than 1 million members of the Rohingya community now live in host communities and the world's largest refugee camp in Cox's Bazar, Bangladesh. The scale of displacement has created dangerous living conditions for Rohingya children, who are at heightened risk of poor health and development due to poverty, malnutrition, and a lack of home stimulation. Moreover, the host community has faced numerous challenges while accommodating the displaced population, which also impacted their living conditions[1].

Gindegi Goron, a Rohingya phrase which means "developing future," is an early childhood development (ECD) program that first started in Bangladesh during the COVID-19 pandemic. At the onset of the pandemic, the IRC pivoted the integrated ECD approach to remote-only service delivery. From September through December 2020, the IRC delivered interactive voice response (IVR) messages to promote healthy development for pregnant and lactating women and their infants. Based on feedback from women in the camp and host communities, the IRC added live phone calls from trained facilitators to this approach. Once it was possible to offer in-person services again, the IRC also added monthly home visits. The pilot indicated success in behavior change in areas related to supporting healthy child development, and existing implementation evidence suggests that integrated ECD services have a positive impact on child development and caregiving practices.

The intervention assessed in this study is an adaptation of the original home visiting approach planned by IRC in Bangladesh. From May 2023 to December 2023, the IRC implemented a cluster-randomized controlled trial (RCT) to assess the differential impact of remote-only ECD service delivery with that of a hybrid program that combines home visits with remote services. Researchers randomly assigned lactating women and their 0-2 year old children from the Rohingya refugee camp and host

Remote

- Each 0–2-year-old child per household received an ECD kit to promote positive early child development. The kits included play materials and picture books.
- Mothers received IVR messages, including complementary SMS messages, related to responsive parenting and how to support their children's health, nutrition, safety and hygiene, and early learning opportunities. Mothers received one IVR message per week for seven months, or 28 total IVR messages. Each IVR message lasted 1-1.5 minutes.
- Mothers received phone calls from a live facilitator to follow-up on the content of the IVR messages. Mothers received one phone call per month for seven months, or 7 total phone calls. Each phone call lasted 5-20 minutes. A total of 622 child-mother pairs received the Remote treatment. This count assumes a 1:1 ratio between the number of children and mothers per household

Hybrid

- Each 0–2-year-old child and mother per household received the same Remote base treatment.
- Mothers received home visits which included age-based developmental activities, a recap of IVR message content, and toy-making activities. Mothers received one home visit per month for 7 months, or 7 total home visits. Each visit lasted 30-45 minutes.
- A total of 646 child-mother pairs received the Hybrid treatment.

[1] Amin, R., Azam, S., Kane, E., Mahmud, A., Murphy, K., Wilton, K. (2021). Gindegi Goron. International Rescue Committee, Understory Consulting. https://nurturing-care.org/wp-content/uploads/2021/07/Gindegi-Goron.pdf

community to a Remote treatment group, Hybrid treatment group, or a control group which received ECD kits after the completion of RCT data collection.

This brief assesses the cost-effectiveness of both treatment arms of the Gindegi Goron program and is guided by the following research question:

1. What is the impact of the remote-only ECD intervention on children's early child development as well as caregiver wellbeing and behavior (e.g., health seeking behaviors, nutrition/feeding practices, responsive caregiving, and supporting early child development), compared to the hybrid treatment?

BUR evaluated cost-effectiveness against the program's primary outcome of interest, early child development. The impact evaluation, led by ICDDR,B, measured the program's overall effect on ECD with a mean cognitive score informed by Bayley Scales of Infant and Toddler Development. Secondary outcomes included home stimulation measured by family care indicators to assess the home environment of young children and caregiving practices related to promoting positive cognitive, motor, and language development. ICDDR,B collected both quantitative and qualitative baseline and endline data.

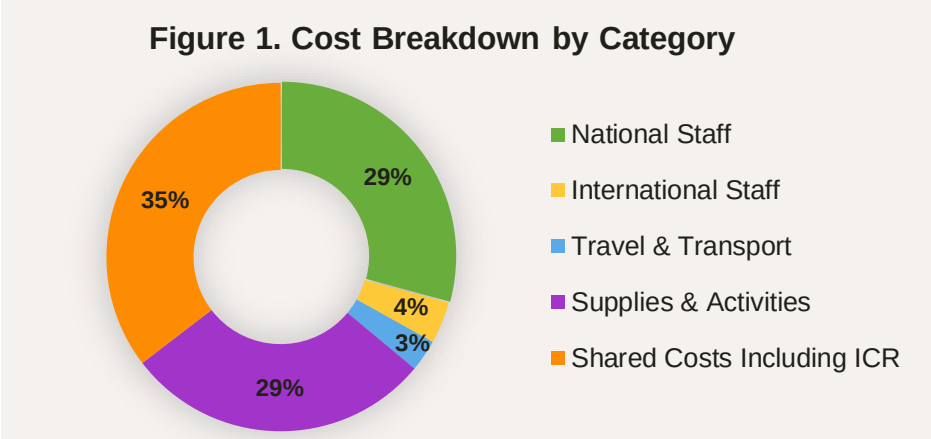
Project Costs

IRC's Best Use of Resources (BUR) team calculated the cost to the implementing organization through financial data, as well as staff time and effort allocations. Caregiver opportunity costs to participate are not included in this analysis as this data could not be reliably collected.

These cost estimates also exclude spending incurred during the program's start-up period, as well as spending related to research costs and time and effort to other activities during the implementation period. Research costs are never included in IRC cost analyses, as research costs are not incurred for standard program implementation. The start-up period for Gindegi Goron took place from January 2020 until the start of implementation on May 22nd, 2023. Start-up activities included staff recruitment and training, IVR platform set-up, and content development. Start-up costs are excluded from this analysis given that they occurred during previous iterations and piloting of the program. Activities such as IVR platform set-up and content development are anticipated to be a one-time cost that would not be incurred for future rounds of implementation. However, content for future iterations of programming would need to be adapted based on the child's age, as well as learnings and key takeaways from the impact evaluation.

Gindegi Goron reached 1,268 child-caregiver pairs and cost $192,196 in total for 6 months of implementation. The Remote treatment arm cost $60,931 to implement for 622 households, while the Hybrid treatment cost $131,660 for 646 households.

Direct program costs comprised 65% of total project spending while support costs, including Shared Program Costs (SPC) and Indirect Cost Recovery (ICR), comprised 35% of total project spending. The largest categories for spending were Program National Staff and Supplies & Activities, which each comprised 29% of total project spending.



Support costs are a necessary expense to keep country offices operational and facilitate program implementation. These include costs such as field office rent, finance staff, procurement, and human resources. While these resources are not directly attributable to one program, they support all programs in that office. As a result, a portion of shared costs is included in every analysis. The percentage included is based on the total spending for the analyzed activities, divided by the total overall program spending for the grant funding the analyzed program during the same time frame Given that grants funding a singular program usually fund additional activities, shared costs are allocated proportionally across the programs they support.

For the average IRC-implemented project, support costs comprise around 30% of total project spending. For Gindegi Goron, support costs were slightly higher, comprising 35% of total project spending due to higher staff support costs across country programs and smaller country program budgets.

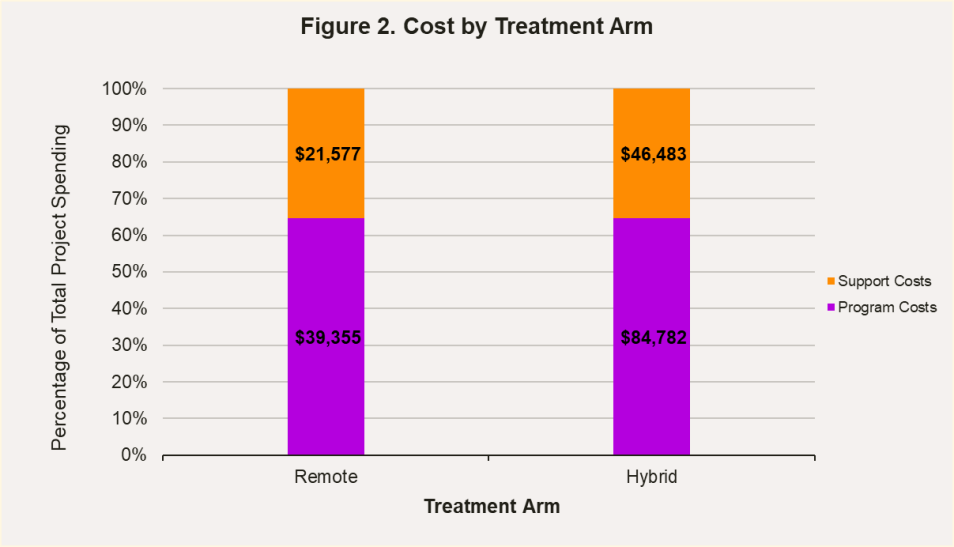
Excluding support costs, National Staff and Supplies & Activities were the largest cost categories, driven by the staff and material-heavy implementation model of both the Remote and Hybrid treatment arms. High National Staff spending is expected given full-time staff's involvement with overseeing project implementation, including the delivery of ECD Kits, IVR messages, facilitator phone calls, and home visits.

National Staff responsibilities included but were not limited to acquiring permission to distribute ECD kits in host communities and camps, distributing the kits, conducting trainings for live facilitator calls and home visits, supervising and coaching facilitators, coordinating IVR messages and home visits, and collecting monitoring data.

High Supplies & Activities spending is also expected given the material, incentive facilitators, and technological costs incurred to provide ECD kits, IVR messages, live facilitator calls, and home visits. The facilitators conducting home visits differed from the facilitators conducting monthly follow-up calls with caregivers, which increased personnel costs by 157%, more than doubling the cost of staff-time.

The single largest cost of the Gindegi Goron program was the ECD kits at $20,922 or a unit cost of $16.50 per child, which program staff distributed to all 1,268 participating households. The kits included play and educational materials such as a Lego set, baby rattle, pyramid ring, melamine bowl, soft ball, picture book set, stickers, and puzzles.

Cost by Treatment Arm

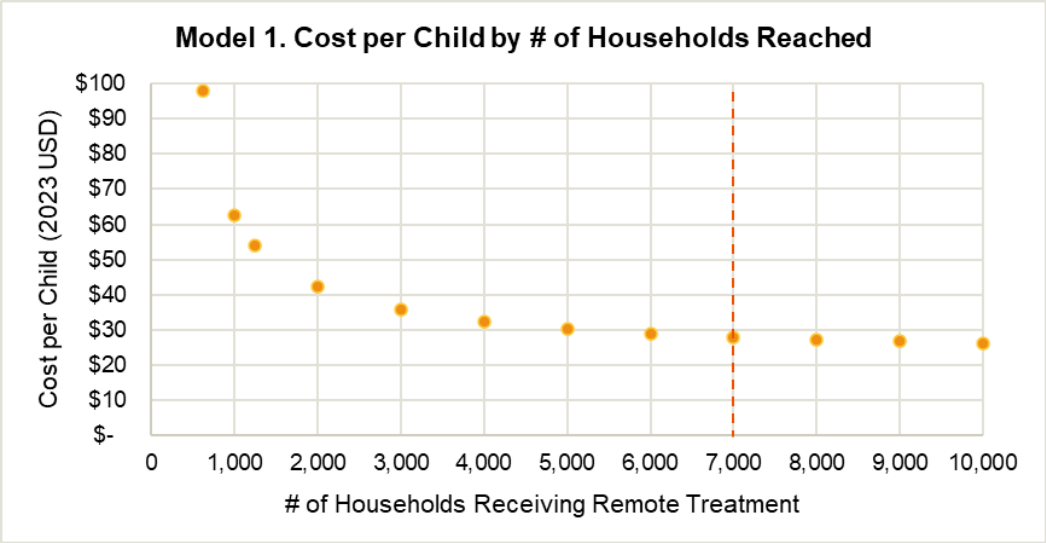


The full cost to implement Remote is $98 per child, compared to $203 per child to implement Hybrid. Implementing six home visits per household in addition to the base treatment over the 7-month implementation period more than doubles the cost of the Gindegi Goron program.
Program National Staff is the largest cost category for both treatment groups. National Staff comprise 57% of Remote's total spending and 42% of Hybrid's total spending, as Gindegi Goron is a staff-heavy program. National Staff time comprises 77% of the additional cost to implement home visits.

Supplies & Activities is the second largest cost category for both treatment groups. Supplies & Activities comprise 36% of Remote's total spending and 25% of Hybrid's total spending. High Supplies & Activities costs are expected given the materials and personnel required to deliver the core package of activities to both treatment groups. Home visits alone comprised 37% of Hybrid's total Supplies & Activities spending.

We believe economies of scale can improve Gindegi Goron's cost-efficiency. We estimate that doubling the number of households receiving the Remote treatment per program cycle reduces the cost per child by 45% from $98 to $54 by spreading fixed costs across more clients. We estimate that returns to scale level off at ~7,000 households, at which point increasing scale no longer necessitates a lower cost per child.
We believe that doubling the number of households receiving the Remote treatment from 622 to 1,244 would result in impactful cost-efficiency gains. To achieve economies of scale, program teams may consider how to optimize outreach strategies, seek bulk discounts on ECD kits and key supplies where possible, and leverage local partnerships to expand reach while maintaining program quality. We project that returns to scale will begin to level off at 7,000 households reached, at which point any cost-efficiency gains from scaling the number of households reached may be negligible. BUR built the below model to demonstrate how the program's cost per child decreases as the number of households reached increases to examine theoretical economies of scale. Our projections account for the additional per-unit cost of ECD kits provided

to each additional household reached, but do not consider potential changes to staff time or training costs that may scale with the number of households reached.



Results of the Impact Evaluation

The impact of the Gindegi Goron program was measured in a randomized evaluation led by the International Centre for Diarrheal Disease Research, Bangladesh (ICDDR,B) in collaboration with the IRC and Sesame Workshop research teams. The following key findings were identified by the impact evaluation and grouped by outcome.

Early Child Development:

- Both Remote and Hybrid had positive, statistically significant effects on early child development.
- The study found that Remote compared to the control group showed a 0.22 increase in standard deviations for the cognitive composite score. For Hybrid, the study found a 0.35 increase in standard deviations for the cognitive composite score. These scores demonstrate a moderately positive and statistically significant impact on early child development.
- The impact evaluation did not find a statistically significant difference between Remote and Hybrid for early child development outcomes.
- **Overall, both treatments had positive, statistically significant effects on early child development, but Hybrid did not yield a statistically significant marginal impact compared to Remote alone.**

Home Stimulation:

- Both Remote and Hybrid had positive, statistically significant effects on home stimulation.
- The study found that Remote compared to the control group showed a 0.95 increase in standard deviations for the family care indicator (FCI) total score. For Hybrid, the study found a 0.82 increase in standard deviations for the FCI total score. These scores demonstrate a large positive and statistically significant impact on home stimulation.
- The impact evaluation did not find a statistically significant difference between Remote and Hybrid for any home stimulation or maternal outcome.

- **Overall, both treatments had positive, statistically significant effects on home stimulation, but Hybrid did not yield a higher impact than Remote alone.**

All results were statistically significant at the $p < 0.1$ level

Cost-Effectiveness Findings

To reach the most children with impactful programming, home visits should not be implemented as they were tested in this model. Due to being 2x the cost for a similar impact, home visits cannot be considered a cost-effective addition to the base Remote treatment.

The impact evaluation detected no statistically significant incremental impact on the program's primary outcome of early childhood development when implementing Hybrid, which included home visits in addition to the core Remote treatment of providing ECD kits, IVR messaging, and live facilitator calls.

For home visits to be considered cost-effective, their impact on eary child development would have to be significantly higher than the IVR treatment to justify the over 2x increase in the cost per child. While home visits did show increased effectiveness for camp populations, they did not have a statistically significant marginal impact on early child development for the Hybrid treatment group, which included both camp and host communities.

Remote is an effective treatment which provides the same outcomes as Hybrid at a lower cost per child.

A scan of relevant literature[2] reveals that the Remote treatment produced impacts similar to comparable parenting interventions which have been shown to have positive effects on children's cognitive development.

The Remote treatment demonstrates comparatively high cost-efficiency to other ECD programs implemented by the IRC[3].

The average cost of 22 ECD programs previously analyzed by the BUR team is $192 while the cost to implement the Remote treatment arm of Gindegi Goron is well below average at $98.

The Remote Early Learning Program[4] (RELP), an ECD program implemented by the IRC as part of the Ahlan Simsim initiative in 2022, serves as the most direct cost comparison to Gindegi Goron given their similar base treatment models. RELP delivered early childhood education (ECE) to 1,015 child-caregiver pairs by equipping caregivers with activities to do with children in the household. Children received ECD Kits, and

[2] Jeong, J., Franchett, E., Ramos de Oliveira, C., Rehmani, K., Yousafzai, A. (2021). *Parenting interventions to promote early child development in the first three years of life: A global systematic review and meta-analysis.* PLOS Med. https://doi.org/10.1371/journal. pmed.1003602

[3] IRC Cost Analysis Education Dataset (2024). Filter "Education Level" Column to "ECCD" only. International Rescue Committee. https://www.rescue.org/cost-analysis

[4] Haywood, Athena. 2023. "Education Cost-Effectiveness Brief – Remote Early Learning Program." The International Rescue Committee.

caregivers attended 2-3 weekly 40-minute instructional remote group WhatsApp calls with teachers for 11 weeks. Gindegi Goron's Remote treatment provided ECD kits to children, weekly 1-minute long IVR messages to caregivers, and monthly 5-20-minute facilitator calls to caregivers for 28 weeks. RELP cost $260 per child, while Gindegi Goron's Remote intervention cost $98 per child.

Both programs were cost-effective with moderate to large positive impacts on early childhood development. Their cost difference is largely due to the intensity of each program model, contextual cost differences (e.g. labor and procurement), and the costs included in their cost analyses. RELP delivered a higher dosage and frequency of calls to caregivers during a much shorter implementation timeframe, which likely drove up the cost of programming. RELP delivered a total average of 31 35-40-minute calls to caregivers over three months, while Gindegi Goron's Remote treatment delivered a total average of 7 13-minute calls and 28 IVR messages to caregivers over seven months. Additionally, the cost of labor and basic materials is higher in Lebanon than in Bangladesh. Lastly, caregiver opportunity costs to participate in the program (an estimated $50 per child) are included in the RELP cost analysis, but not in the Gindegi Goron analysis.

Given the promising impact and comparatively low cost per child of $98, the Remote treatment is a cost-effective intervention which should be scaled to reach at least double the number of households to maximize cost efficiency. Doubling the number of households served per program cycle from 622 to 1,244 would reduce cost per child by 45% to $54.

Spreading fixed costs across more clients and procuring a larger number of ECD kits at a potentially discounted rate will lower the cost per child of the program and ultimately benefit a greater number of children in the host and Rohingya communities.

Program costs can vary substantially across contexts and implementing organizations despite similar implementation models.

This cost analysis is specific to the Bangladeshi context. Even if the inputs required to run an effective remote early childhood development intervention remain the same in a different context, the cost of those inputs may differ substantially, leading to varied cost results. When planning for future program implementation, teams must be guided by the inputs required (see Ingredients List in annex) and consider how to leverage local partnerships to procure quality resources at the right price. Transparent and detailed cost data, in addition to the publication of final cost-effectiveness results, is critical to make such detailed reflection possible.

The implications of the cost findings presented in this analysis may look different for local NGOs. Local NGOs often have greater ability to serve the hardest-to-reach populations, but lack the funding to do so cost-efficiently and at scale. When funded at the same scale as international NGOs, we believe IRC and local NGOs could play complementary roles: local NGOs can use their contextual expertise and community relationships to scale up programs such as Gindegi Goron cost-efficiently, while international NGOs like IRC can supplement with technical assistance.

The costs of this program do not currently include IVR content development or start-up costs. Implementing this program in another context may require start-up costs, such as translation or cultural and age-appropriate content adaptation, to be considered to provide an accurate representation of costs.

Analysis Method: Cost-Effectiveness at the IRC

The IRC is committed to maximizing the impact of each dollar spent to improve our clients' lives. 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 effectiveness requires two types of information:

1) An impact evaluation on what a specific program achieved, in terms of outcomes.
2) Data on how much it cost to produce that outcome.

Teams across the IRC produce a wide range of outcomes, but cost-effectiveness analysis requires that we know - based on impact research - exactly which outcomes were achieved and how much they changed, for a given program. For example, an impact evaluation might show a village that received IRC latrines and hygiene promotion had a 50 percent lower incidence of diarrhea than a village next to it which did not receive the IRC intervention. If so, we know the impact of our program: a 50 percent decrease in diarrhea incidence. Cost-effectiveness analysis is possible only when there is an impact study that quantifies the change in outcomes as a result of IRC intervention.

As such, IRC gathers data on how much the evaluated program costs when implementing impact evaluations. First, IRC staff build a list of inputs that were necessary to implement the evaluated program. If one thinks of a program as a recipe, the inputs are all the 'ingredients' necessary to make that dish. Budgets contain a great deal of information about the ingredients used and in what quantities, so reviewing the program budget is the first place to start. However, many of the line items in grant budgets are shared costs, such as finance staff or office rent, which contribute to multiple programs, not just the one included in the impact evaluation. When costs are shared across multiple programs, it is necessary to further specify what proportion of the input was used for the particular program. 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, enabling us to model alternative program structures and quantify the cost implications of different decisions.

A full explanation of the IRC's cost analysis methodology can be found here: ***www.rescue.org/report/cost-analysis-methodology-irc***

More on IRC's costing work can be found at ***rescue.org/cost-analysis***

Please contact costanalysis@rescue.org for more information

Airbel Impact Lab
Research & Innovation at the IRC

The cost to the implementing organization was led by the Best Use of Resources team at the IRC. The University of Pennsylvania team led the cost to client analysis. For questions or more information please contact us at **costanalysis@rescue.org**.

Preferred Citation
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Impact evaluation, led by ICDDR,B, in collaboration with the IRC and Sesame Workshop research teams:
Hamadani, J., Mehrin, S., Sarker, B. 2024. *Impact Evaluation of an Integrated early childhood development (ECD) Approach in Cox's Bazar—A Cluster Randomised Controlled Trial.* ICDDR,B.

Other citations:
Jeong, J., Franchett, E., Ramos de Oliveira, C., Rehmani, K., Yousafzai, A. (2021).
Parenting interventions to promote early child development in the first three years of life: A global systematic review and meta-analysis. PLOS Med.
https://doi.org/10.1371/journal. pmed.1003602
IRC Cost Analysis Datasets, (2024). International Rescue Committee.
https://www.rescue.org/cost-analysis

Annex: Ingredients List

Bangladesh | 2023 USD

PROGRAM COSTS	Remote (Treatment)	Hybrid (Treatment PLUS)	TOTAL
Program Staff	**$ 17,838**	**$ 45,801**	**$ 63,639**
M&E Coordinator	$ 423	$ 461	$ 884
Sr Manager MEAL	$ 1,229	$ 1,341	$ 2,570
Officer - Accountability	$ -	$ 46	$ 46
Education Coordinator	$ 183	$ 708	$ 890
Sr. Manager - ECD	$ 1,565	$ 3,712	$ 5,278
Officer - Community Mobilization	$ 3,485	$ 9,355	$ 12,840
Officer - MEAL	$ 1,065	$ 2,691	$ 3,756
Assistant Officer - Community Mobilization	$ 4,697	$ 12,770	$ 17,467
Technical Manager - ECD	$ 899	$ 2,709	$ 3,608
Technical Advisor ECD, TTA ECD (*International*)	$ 296	$ 943	$ 1,240
Education Project Manager (*International*)	$ 1,084	$ 3,449	$ 4,533
Benefits (cumulative)	$ 2,914	$ 7,614	$ 10,527
Program Supplies & Activities	**$ 22,255**	**$ 32,577**	**$ 54,832**
Project monitoring and client feedback survey	$ 833	$ 1,769	$ 2,602
SMS for ECD content dissemination	$ 1,139	$ -	$ 1,139
IVR quiz roll out and maintenance	$ 1,841	$ 163	$ 2,004
ECD Facilitators (Host + Camp)	$ 6,686	$ 16,151	$ 22,837
ECD Facilitators' Phone Bill	$ 537	$ 1,064	$ 1,600
ECD kits	$ 10,263	$ 10,659	$ 20,922
Bi-monthly refresher training for ECD facilitators	$ 744	$ 2,174	$ 2,917
Visibility materials	$ 119	$ 310	$ 429
Mobile bill for facilitators	$ 94	$ 286	$ 380
Travel	**$ -**	**$ 5,666**	**$ 5,666**
Program Local Travel Costs	$ -	$ 5,666	$ 5,666
SHARED COSTS (incl. ICR 11.11%)	**$ 21,029**	**$ 47,030**	**$ 68,059**
TOTAL	**$ 61,123**	**$ 131,074**	**$ 192,196**
Number of Children per Treatment Arm	622	646	
Cost per Child (n = 1,268)	**$ 98**	**$ 203**	