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EDUCATION COST-EFFECTIVENESS BRIEF – Remote Early Learning Program

Lebanon | 2023

Executive Summary

In 2022, the International Rescue Committee (IRC) implemented the Remote Early Learning Program (RELP) in partnership with Sesame Workshop as part of the Ahlan Simsim project. This project aims to provide vital educational support and resources to children in crisis and conflict-affected regions. The program targeted households with children aged 5-6. From March to June 2022, RELP reached 995 children across four regions in Lebanon. This analysis examines the costs of implementing two treatment arms during wave one of the research study: RELP alone and RELP plus Ahlan Simsim Families (ASF), a parenting support program.

The cost to implement RELP was \$260 per child, while the cost to implement RELP+ASF was \$550 per child. The IRC spent \$132,670 to implement RELP, and a total of \$272,487 to implement RELP+ASF. The largest cost difference between RELP and RELP+ASF can be found in the programs' spending on National Staff. Of the \$140 thousand spent on National Staff, 17% can be attributed to RELP programming, while 83% can be attributed to RELP+ASF programming.

RELP+ASF is not a cost-effective combination of programs. Adding the ASF program to RELP reduced the magnitude of impacts on child development while doubling the cost. RELP alone appears cost-effective compared to in-person preschool. RELP+ASF is not cost-effective and should not be implemented again using this remote, low-dose, model.

Project Description

In 2022, the International Rescue Committee (IRC) implemented the Remote Early Learning Program (RELP) in Lebanon as part of the Ahlan Simsim project, which aims to deliver critical early childhood development (ECD) programs to children and caregivers of refugee and host communities in the middle east region. The IRC developed RELP to address the lack of access to early childhood education (ECE) to conflict-affected populations and targeted children in hard-to-access areas of Lebanon. Syrian refugees comprised the majority of clients served. The RELP program was a caregiver-focused intervention that targeted households with children aged 5-6 in Bekaa, Baalbek, Tripoli, and Akkar. A randomized control trial of this program examined the impact of RELP alone and RELP+ASF compared to the waitlist control group, which received program services once both treatment arms were complete.

RELP was an 11-week service, implemented from March to June 2022. RELP aimed to provide:

- *Improved early child development*
This component focused on providing access to high-quality ECE to directly improve learning, social-emotional skills, primary school completion, and continued education.
- *Improved access to ECE learning materials*
This service focused on providing caregivers with remote alternatives and distributed learning kits with materials needed for activities.
- *Improved caregiving well-being*
RELP provided remote parenting support in one additional session per week via the Ahlan Simsim Families (ASF) program. This ensured remote learning was taking place in an equipped environment. Sessions focused on responsive relationships, early learning, safety, and security. Caregiver-focused content videos were shared between sessions via WhatsApp.

Remote Early Learning Program (RELP)

The Remote Early Learning Program

- Caregivers attended remote classes led by teachers, trained in early childhood education (ECE), with 4-5 other caregivers and their children.
- Sessions ran 2-3 times per week for 11 weeks.
- Each session was 40 minutes long, with individual parent follow-up calls as needed.
- Sessions included a total of 180 activities and child participation was confirmed through WhatsApp media evidence.
- RELP provided learning kits of ECE learning materials, as well as shared helpful content via WhatsApp. Materials included worksheets, storybooks, arts and crafts supplies, and stationery.
- This activity required minimal teacher-child time due to its remote modality and primarily focused on teachers supporting caregivers to implement ECE activities at home.

Ahlan Simsim Families (ASF)

- Roughly half of the caregivers who participated in RELP also participated in the remote parent support program (ASF).
- During the 11 weeks of implementation, caregivers met for an additional session each week, for a total of 11 sessions. Only 8 of the 11 sessions were considered mandatory.
- Each session ran for 25-30 minutes.
- Facilitators shared Sesame Workshop and IRC-designed multimedia with caregivers between sessions. The ECD content focused on responsive relationships, early learning, and safety and security. This content was shared via WhatsApp and included 1 poster and 15 videos.

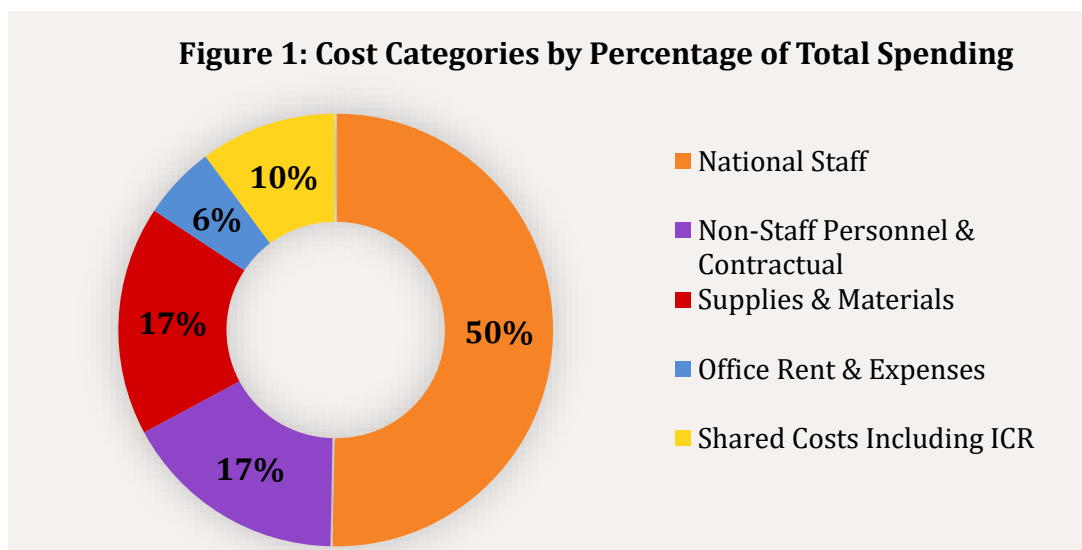
The three-arm randomized controlled trial (RCT) based its findings on quantitative data collected at baseline and endline. Data was collected using caregiver surveys and the International and Development and Early Learning Assessment tool (IDELA). Caregiver surveys and the IDELA assessment for baseline and endline were administered over the phone.

Project Costs

This brief examines the costs associated with implementing RELP and ASF. These cost estimates exclude research costs, the spending incurred during the five-month start-up period from September 2021 to January 2022, and content development and production costs. Research costs are never included in IRC cost analyses, as the cost of research is not incurred for standard programming. Including research costs would result in an inflated cost of programming. Content development and adaptation were excluded from the analysis because it is anticipated to be a one-time cost that would not be incurred for future rounds of implementation. Future iterations would leverage the existing content development. Current cost results only represent the costs to implement the 11-week program, not including start-up, as the main cost question of interest was understanding the cost to implement RELP and RELP+ASF.

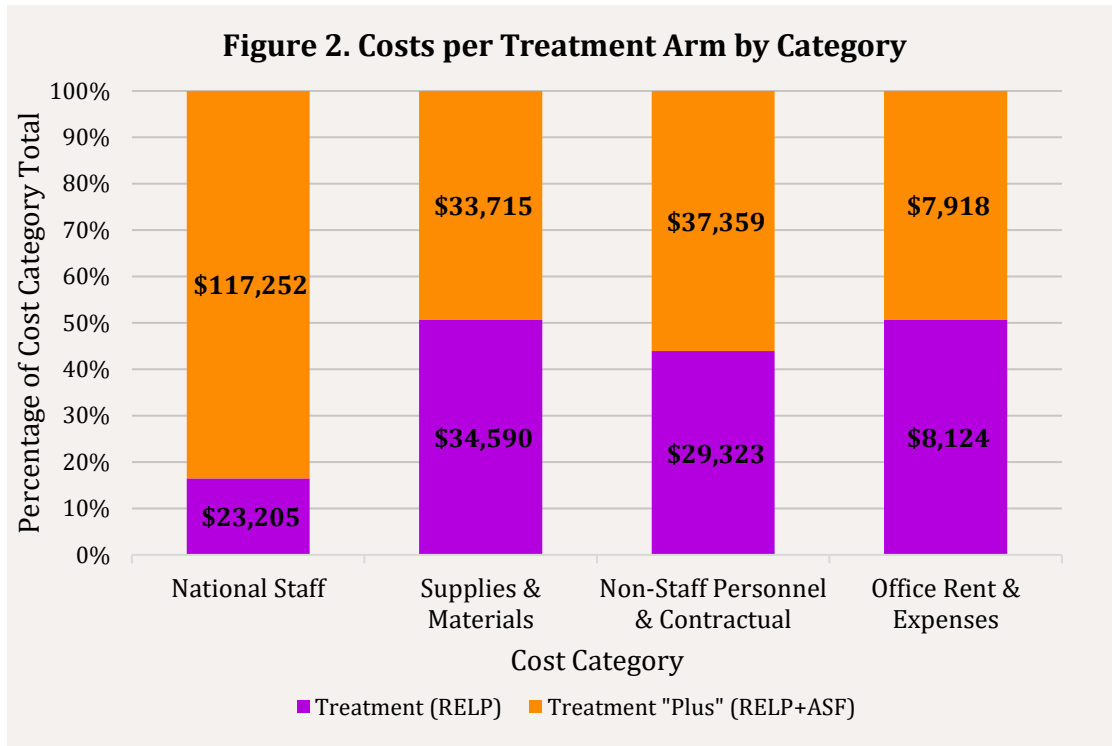
RELP reached 1,015 child-caregiver pairs. 514 child-caregiver pairs received RELP only and 501 pairs were provided RELP+ASF. \$405,171 was spent in total for the 11-week implementation. The RELP only treatment arm cost \$132,670, while the RELP+ASF program spending totaled \$272,487.

The largest cost category was program National Staff (50%) which includes program, Monitoring, Evaluation, Accountability & Learning (MEAL), and Research, Monitoring, Evaluation & Learning (RMEL) staff used to implement the RELP and ASF programs (Figure 1).



Overall, National Staff was the largest cost category, driven by the National Staff-heavy implementation of the added Ahlan Simsim Families program. National Staff contributed 43% of the costs to implement ASF on top of RELP. While National Staff was the largest cost category attributed to treatment “plus”,

Supplies & Materials was the largest spending category of Remote ELP (treatment), making up 26% of total RELP costs.

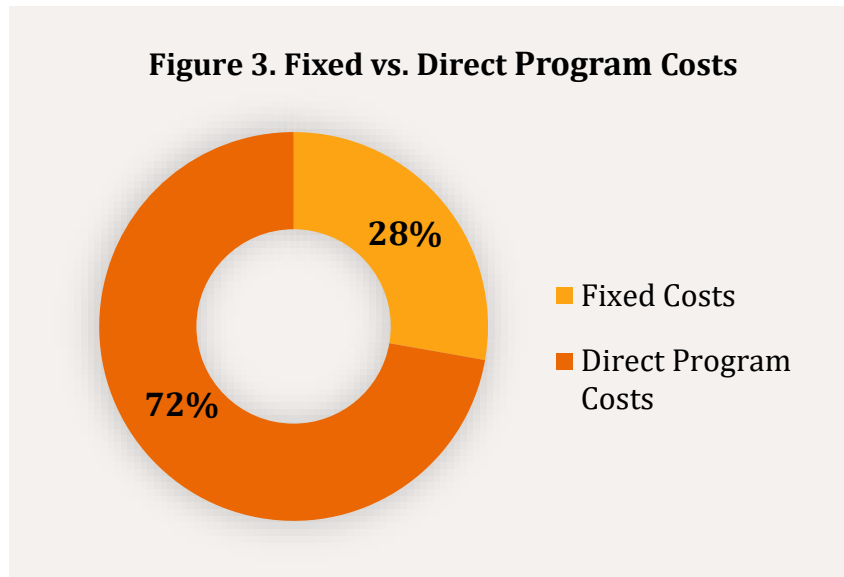


The largest individual cost of joint programming was program materials including recharge cards, learning kits distributed to families, and printing materials, costing \$68,000 (17% of total spending across both treatment arms). This is expected, as a core component of RELP required tangible materials that caregivers could incorporate in activities with children to better facilitate at-home learning.

Non-staff personnel is the second largest cost category (~17% of total spending), which includes the costs of Lebanese teachers and facilitators. Non-staff personnel are incentive workers and do not receive benefits. If the program was implemented using full-time staff, we would expect the total program cost to increase as a result.

The costs driving RELP programming were expected due to its low staff support implementation model and remote modality. Teachers ran virtual classrooms and parent sessions, however, outside of sessions, caregivers provided ongoing support to their children and heavily relied on the kits distributed to them to carry out ECE activities at home with children. Similarly, the costs driving ASF programming were expected as it required more staff (facilitator) time to lead the parent support sessions and involved few supplies.

28% of the total spending was on IRC Lebanon operation support costs. The direct program costs for Remote ELP and ASF were 72% of total spending (Figure 3).

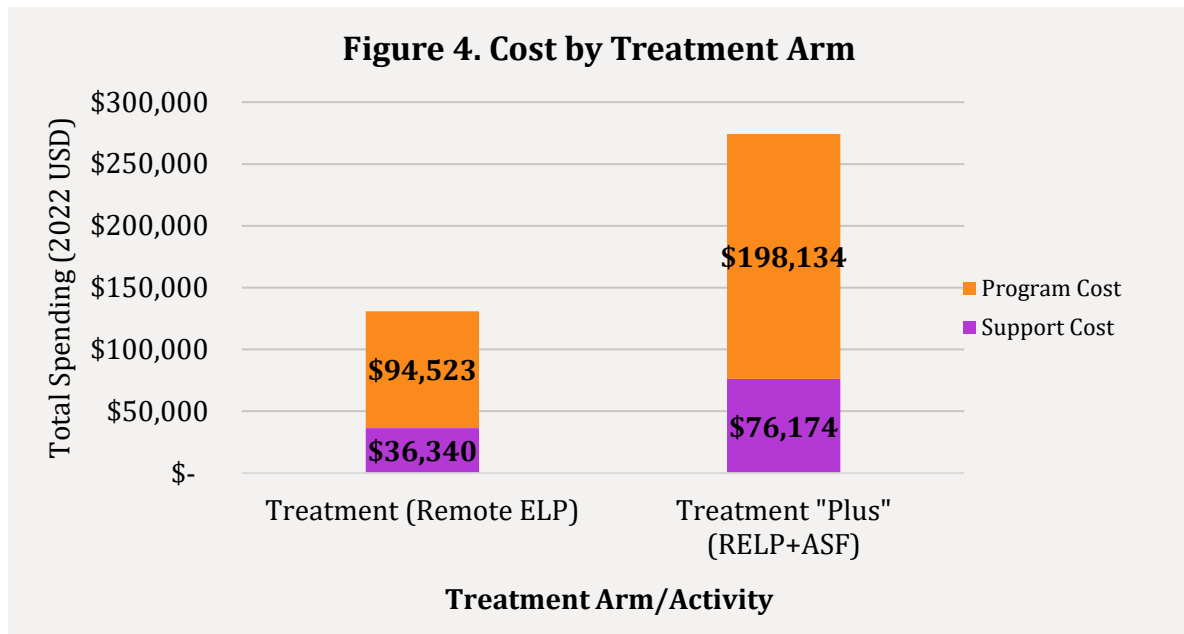


The cost-effectiveness analysis calculated the cost to IRC and the cost to caregivers. The shared Lebanon costs are a necessary expense to keep country offices operational to facilitate program implementations. It includes costs such as field offices across the four locations, finance staff, procurement, and human resources. These resources are not directly attributable to one program, rather, they support all programs in that office. As a

result, a portion of the 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 in the analyzed budgets during the same time frame. The average support cost percentage of an IRC program is 25-33% of total spending. The RELP results fall within this standard range.

Remote ELP alone costs \$260 per child, while RELP plus Ahlan Simsim Families (RELP “Plus”) costs \$550 per child, not including the cost to caregivers.

By calculating the discrete costs of each activity, IRC can understand the allocation of resources for future iterations of the program. Combined with data on the relative effectiveness of different activities, we can draw conclusions about which package is likely to be the most cost-effective at improving early childhood education remotely, especially among refugee populations in hard-to-access regions and areas with little to no access to ECE.



Results of the Impact Evaluation

A three-arm randomized controlled trial evaluating Remote ELP (treatment) and RELP+ASF (treatment "plus"), compared to a waitlist control group that received RELP services promptly after endline data collection, examined the impact of the Remote Early Learning Program. For both baseline and endline data collection, two tools were used: (1) a caregiver survey, and (2) the International Development and Early Learning Assessment (IDELA), which assesses child outcomes. The study mainly highlights how outcomes changed for children by treatment groups.

- Child Development and Play** – Both RELP and RELP Plus had positive effects on child development and play. RELP proved significantly impactful on all outcomes measured. The study found a 0.45 effect size for overall child IDELA; 0.49 for literacy; 0.45 for numeracy; 0.36 for social-emotional skills; 0.21 for motor skills; and 0.29 for child play. For RELP+ASF, the study found effect sizes of 0.26 for overall IDELA, 0.37 for literacy, 0.32 for numeracy, 0.35 for child play, and no impact on social-emotional or motor skills. No statistically significant difference between RELP and RELP Plus was found for any outcome. Overall, both activities had positive effects on child development and play.

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

Cost-Effectiveness Findings

Remote ELP alone provides better outcomes for children, coupled with a lower cost per child.

The most cost-effective package of services included early childhood education (ECE) Home Kits, remote sessions, and regular individual follow-up calls with parents as needed without the ASF parent support program. The impacts of this fully remote, WhatsApp-based, caregiver-focused ECE intervention for children about to begin primary school in Lebanon, was a cost-effective solution to low rates of ECE in harder to-access areas. It successfully put caregivers in a position, regardless of their education and literacy levels, to provide early schooling and conduct preschool curriculum activities at home with their children.

A scenario model analysis done on the Remote Early Learning Program suggests that returns to scale level off at 3,600 children. In other words, the cost per child does not vary a great deal as the scale increases past 3,600 children, which suggests that the cost efficiency at a scale of 3,600 vs at a scale of 25,000 is roughly the same. As a result, if "low" scale for IRC is 3,600 then IRC is maximizing the use of its resources. Overall, this scenario model analysis indicates that the cost per child for 11 weeks of RELP implementation, in Lebanon, will be ~\$230 if IRC reaches 3,600+ children.

The cost of Remote ELP is within the range of other ECE programs (\$60 per child¹ to \$669 per child²) evaluated in low- and middle-income countries, and is still lower than many in-person programs, making it more cost-effective to implement and more accessible for those who cannot easily access in-person services for their children. Despite the small pool of evidence available on the effectiveness of shorter-term ECE programming, especially in the MENA region, it is helpful to consider the findings of the evaluation of a 12-week accelerated summer ECE program in Mozambique (Bonilla et al., 2019). This program, motivated by similar concerns of high primary school dropout rates and poor learning outcomes, targets children preparing to enter school. This early childhood education (ECE) intervention provided 120 hours of in-school programming for children and 12 weeks of parent-to-parent learning sessions. Researchers found positive impacts on child development, supported by reports from teachers and parents, as well as a 12 percentage point increase in school attendance. Overall, this stresses the success of shorter ECE programs, especially in low-resource communities.

Implemented together, Remote ELP + ASF is not cost-effective due to its high cost and lack of significant impact on early child development outcomes.

Given that the outcomes were lower on all statistically significant metrics for the treatment "plus" arm, in combination with a significantly higher cost per child, Remote ELP + ASF is not cost-effective when implemented together.

¹ Bonilla, J., Spier, E., Carson, K., Ring, H., Belyakova, Y., Brodziak, I., & Adelman-Sil, E. (2019). *Evaluation of the UNICEF Mozambique Accelerated School Readiness Pilot Programme: Final Report*. Washington, DC: American Institutes for Research.

² Berkes, J., Bouguen, A., Filmer, D., & Fukao, T. (2019). *Combining supply- and demand-side interventions: Evidence from a large preschool program in Cambodia*. World Bank.

With the Remote Early Learning Program, there is a potential of seeing returns to scale by spreading fixed costs over more children and families, and in turn, a greater potential to further improve ECE outcomes.

The cost-efficiency of the program, and therefore the cost-effectiveness, is highly dependent on the number of clients reached using a static number of resources. Implementing on a larger scale, and identifying more child/caregiver dyads, without significantly increasing the total spending would allow for a better cost-effectiveness ratio.

The costs of this program do not currently include content development or start-up costs. Therefore, were this program to be implemented in a different context or region, start-up costs may need to be taken into account when replicating this program. Additionally, these costs would need to be considered if the content is developed for a smaller-scale program, as these development costs could take up a larger percentage of total program spending potentially leading to lower cost efficiency. It is also ideal to include start-up and content development costs when they both directly contribute to only one program, rather than various programs being implemented across one organization or partner. This way, hypotheses made related to program replication will be most accurate as they include costs at all stages.

REL P has proven just as impactful as traditional in-person preschool programs.

The impacts of this short remote program prove to be in the range of impacts found for more traditional in-person preschool programs, despite their difference in modality. Taking into account that it is not always clear what studies include/exclude in their program cost breakdown and the differences in sample size, program resources, education policies, and program length, the Mozambique study³ serves as an example of an in-person preschool program that yielded similar impacts to Remote ELP, with lower impacts on emergent literacy, higher impacts on emergent numeracy and motor skill development, and no impact on social-emotional skills.

REL P and ASF costs can vary substantially across different contexts, despite how similar program components may remain.

All costs are specific to the Lebanese context. Even if the 'ingredients' required to run an effective remote early learning intervention stay the same across different contexts, the cost of inputs will differ, leading to varied cost results. A separate comparative analysis of 11 implemented iterations of ASF, across the MENA region, resulted in a variation of \$6-\$600 in the cost per client. As a result, program teams must be guided by the ingredients required and input costs in their context (see Ingredients List in annex) when planning future programs. Transparent and detailed cost data, in addition to the publication of final cost-effectiveness results, is critical to make such detailed reflection possible.

³ Bonilla, J., Spier, E., Carson, K., Ring, H., Belyakova, Y., Brodziak, I., & Adelman-Sil, E. (2019). *Evaluation of the UNICEF Mozambique Accelerated School Readiness Pilot Programme: Final Report*. Washington, DC: American Institutes for Research.

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 the IRC project.

At the same time, IRC runs impact evaluations, we gather data on how much the evaluated program costs. 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.

This work was conducted by the Best Use of Resources Initiative at the IRC. For questions or more information please contact us at airbel@rescue.org.

Berkes, J., Bouguen, A., Filmer, D., & Fukao, T. (2019). Combining supply- and demand-side interventions: Evidence from a large preschool program in Cambodia. World Bank.

Bonilla, J., Spier, E., Carson, K., Ring, H., Belyakova, Y., Brodziak, I. & Adelman-Sil, E. (2019). Evaluation of the UNICEF Mozambique Accelerated School Readiness pilot programme: Final report. Washington, DC: American Institutes for Research.

Preferred Citation

Haywood, Athena. 2023. "Education Cost-effectiveness Brief – Remote Early Learning Program." The International Rescue Committee.



Annex: Ingredients List**Lebanon | 2022 USD**

Program Costs	REL (Treatment)	REL+ASF (Treatment "Plus")	Total
National Staff	\$23,205	\$117,252	\$140,457
ECD Coordinator	1,177	3,471	4,648
ECD Senior Program Implementation Manager	803	4,484	5,287
ECD Senior Quality Manager	724	3,567	4,291
ECD Program Officer	377	739	1,116
ECD Program Assistant	275	540	815
ECD Drivers (Beirut, Bekaa, Akkar, Tripoli)	630	11,407	12,037
ECD Senior Quality Officer (4)	1,343	8,823	10,166
ECD Assistants- Beirut, Bekaa, Akkar, Tripoli	1,077	13,812	14,889
ECD Facilitator -WPE Center Arsal and Akkar	-	8,439	8,439
ECD Field Manager- Beirut, Bekaa, Akkar, Tripoli	1,464	7,785	9,248
RMEL Senior Manager	2,335	6,886	9,221
Senior Research Officer	2,513	3,442	5,955
MER Officer-Bekaa, Akkar, Tripoli	3,076	9,073	12,149
IM Assistant-Bekaa	903	2,664	3,568
Accountability Manager	258	762	1,021
Feedback and Complaints Officer	125	368	493
Insurance, Training & Capacity Building	6,124	30,991	37,114
Non-Personnel & Contractual	\$29,323	\$37,359	\$66,681
Lebanese Teachers (Research-Child)	25,744	25,093	50,838
Facilitators (Research-Caregivers)	3,578	12,266	15,844
Travel	\$587	\$572	\$1,159
Airfare	587	572	1,159
Office Rent & Expenses	\$8,124	\$7,918	\$16,042
Office Rent/Utilities/Maintenance	6,361	6,200	12,561
Software	822	801	1,624
Warehouse Rent	940	917	1,857
Supplies & Materials	\$34,590	\$33,715	\$68,305
ECD Kits, Materials, Printing and Recharge Cards	34,590	33,715	68,305
Shared Costs	\$36,842	\$75,671	\$112,513
TOTAL	\$132,670	\$272,487	\$405,157
Cost per child (REL n=514, REL+ASF n=501)	\$260	\$550	
Cost per Child (Including cost to caregiver)	\$310*	\$610*	

** The following findings on the cost to caregivers participating in the Remote Early Learning Program was led by the Center for Benefit-Cost Studies of Education at the University of Pennsylvania. The cost to caregivers was determined by measuring the time they committed to the program, both during intervention phone calls and while carrying out home-based activities with their children. As previously stated, the cost to the IRC to implement the programs was \$260 per child for RELP child and \$550 per child for RELP+ASF. Including costs to caregivers, program costs were estimated at \$310 per child for RELP and \$610 per child for RELP+ASF (with caregiver time representing 17% and 10% of those costs, respectively).*