ECDAN
Early Childhood Development Action Network
Knowledge Fellows

Landscape Analysis of Early Childhood Development Costing Tools and Guidance Resources

ECDAN Knowledge Fellows program project

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Abbreviations

BE^2	Building Evidence in Education
C3	Childhood Cost Calculator
CBA	Cost-Benefit Analysis
CEA	Cost-Effectiveness Analysis
ECCE	early childhood care and education
ECD	early childhood development
ECDAN	Early Childhood Development Action Network
ECE	early childhood education
EiE	education in emergencies
ESP	Education Sector Plan
IIEP	International Institute for Educational Planning
ILO	International Labour Organization
IRC	International Rescue Committee
J-PAL	Abdul Latif Jameel Poverty Action Lab
NGO	nongovernmental organization
SDG	Sustainable Development Goal
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID	US Agency for International Development

Definition of Terms

Amortization	The cost of an intangible asset is spread out over the course of the asset's "useful life.
Cost	The monetary expression of the value of resources required to develop and/or implement an intervention or produce specific goods or services, regardless of how these resources are financed. Cost is different from price, which is the monetary value exchanged in a market transaction for one unit of a good or service. Cost is specific to the site and time of the transaction.
Cost Analysis	The process of systematically examining the costs of developing and/or implementing an intervention, with or without additional data on intervention outputs or outcomes. Cost analysis can be retrospective or prospective. *Retrospective* cost analysis is defined as an application of cost analysis methods to actual data on cost (and results, if applicable) from interventions that have already been implemented. *Prospective* cost modelling is defined as the application of cost analysis methods to a hypothetical situation in the future, such as a scale-up, replication, or transfer of an intervention to a different implementer (e.g., the partner government).
Cost-Economy Analysis	A systematic examination of components of the program and the cost of resources for each component over the time of the development and implementation of the intervention.
Cost-Effectiveness Analysis (CEA)	An analysis of the amount of "effect" a program achieves for a given amount of cost incurred, or the amount of cost required to achieve a given impact.
Cost-Efficiency Analysis	An analysis of the costs of producing outputs. The results are frequently expressed as a unit cost for producing a particular output. Depreciation: The process of distributing the cost of an asset which may last for many years over the course of its "useful life."
Cost-Benefit Analysis (CBA)	A type of analysis that systematically estimates the monetary value of all benefits produced by a program and compares this monetary value to the total costs of the program.
Discount Rate	A rate used to discount future costs or benefits to the present value of money. The basic idea behind "discounting" is that costs incurred in the future are less of a burden than costs incurred today. Therefore, future costs can be discounted to compare them with present costs (Levin et al. 2018).
Early Childhood Development (ECD)	is a holistic concept that encompasses a child's well-being from multiple dimensions- cognitive, socio-emotional, and physical development and according to UNICEF spans the period up to 8 years of age.[1]
Inflation	The increase of general prices in an economy over a period of time.
Ingredient	A type of resource used to develop and/or implement an intervention. Typical ingredient categories include labour, materials, rent, travel, and other elements; they can be disaggregated further into individual resources within an ingredient category (e.g., labour is an ingredients category and individuals such as project coordinators, trainers, chief of party, etc. are the ingredients within that category.[2]
Outcome	A measure of an activity's impact or effectiveness, for example, scores on a standardized test.
Outputs	The quantities of goods and services that an activity delivers to its beneficiaries.

Source- Unless otherwise specified the key definitions in the table are adopted from the Cost Analysis Guidance for USAID-Funded Education Activities (2021) by Walls et al., 2021. https://www.edu-links.org/resources/usaid-cost-measurement

INTRODUCTION

Early childhood development (ECD) is recognized as a driver of other development goals and one of the leading paths to sustainable development.[3,4,5,6] Healthy development in the early years of a child provides multifaceted benefits at various levels (to the child, parents, and communities) in terms of educational achievement, economic productivity, responsible citizenship, lifelong health, strong communities, and successful parenting of the next generation[7]. These benefits can range from boosting the labor market for service providers and promoting careers, to setting the foundation for later learning and skill development and promoting children's school readiness.[6] These can, in turn, provide additional spillover benefits, such as higher educational attainment and adult earnings,[8] and reducing special education placement and repetition, which is strongly linked with lowering economic costs. Furthermore, the benefits from ECD are more pronounced for children from low-income backgrounds. [9] Notwithstanding the growing evidence base on the advantages of ECD and a growing commitment across many global-level actors and low- and middle-income countries to the topic of ECD,[10] the sector still struggles with being a low policy priority,[11] with insufficient funding limiting its expansion.[12]

Advocacy efforts have continued to increase investment in ECD interventions, nonetheless, improving the efficiency and effectiveness of ECD financing has equivalent importance to achieving results in quality ECD programmes at global and national levels. As such, cost data are critical in providing key information on the resources necessary for ECD interventions to support national and international stakeholders in their ECD policy-making and strategic programming decisions. However, due to lack of sufficient and comparable cost data, national governments and international funders often miss critical opportunities to leverage information about costs of interventions in making policy decisions[13].

Apart from the complexity of capturing and analyzing cost data, additional limiting factors contributing to in this regard include: differences in financial reporting requirements of donors resulting in high transaction/administration costs for organizations implementing programmes, and differences in metrics and measurement approaches constraining comparison and use of data for strategic decision making which in turn limits the relevance of such information for policy and program implementers. Cognizant of these challenges, there is an increasing effort to harmonize the costing approaches and methods among donors through the issuance of technical guidance notes and the development of cost capture and analysis templates in the ECD space.

Another critical challenge remains in easily availing existing resources (ECD costing templates guides, training resources) as global public goods targeting users in the LMICs. Moreover, a lack of systematic characterization and synthesis of available ECD costing tools and templates is essential to support users in deciding which tools or guides are relevant for their specific context. As such, a landscape analysis of ECD costing resources is deemed essential to contribute to this aspect. Given the above context, this ECDAN costing knowledge fellow project-themed Landscape analysis of ECD costing tools and guidance notes was carried out with the following specific objectives that frame the deliverable.

- Identify the various costing tools, guides and initiatives promoted by different development actors in the early childhood development space;
- Map out the distinct features of the different tools; and
- Identify emerging key themes and trends in ECD costing.

1. Methodology

1.1 Approach

The landscaping analysis followed a qualitative approach that primarily involved a desk review of relevant resources. The study took the different costing tools, guides, and initiatives promoted by various development agencies in the ECD and education arena as a research unit.

A predominantly grey literature review of the resources developed by prominent organizations working on ECD costing and education space was conducted. The grey literature mainly was used to map different stakeholders, the ECD costing initiatives they are implementing, and their distinctive features. The review was done in two steps. The first comprised a desk literature review using the snowball method to identify relevant tools, guides, and initiatives for deeper review and inclusion for mapping (inclusion criteria was set) and included flagship guides, tools, and initiatives recommended by the mentor or during crowdsourcing (see below). This first-stage review helped to define resources for the next deeper data extraction and analysis. The second step comprised a detailed literature review on the initiatives selected for the mapping. Key words/phrases (e.g., costing in education, ECD costing, costing tools for, and costing method for ECD programs) were used as the key search string words. In addition to the mainstream Google and Google Scholar search engines, the US Agency for International Development (USAID); United Nations Educational, Scientific and Cultural Organization (UNESCO); World Bank; United Nations Children's Fund (UNICEF); Global Partnership for Education (GPE); International Labour Organization (ILO); ECDAN; and Brookings's research repositories were explored as main sources of the reviewed resources.

1.2 Survey/crowdsourcing

A survey questionnaire was sent out to ECD stakeholders to gather information on costing tools and approaches being used (if any), the type of interventions using the resources, and any lessons learned. Yet, the survey response rate was low (less than 3 percent). To further explore whether there are any more resources out there being used by stakeholders besides the costing tools and guides identified through the literature, the landscape analysis included a crowdsourcing request in the social and professional media platforms Twitter and LinkedIn, respectively. Using the account of an ECDAN executive and the mentor helped the author to ensure the request reached a wider audience in the ECD space. There were no new ECD costing tools and resources identified through the crowdsourcing exercise that were not initially identified through the desk review. However, it helped to confirm the diverse set of stakeholders who are interested and working in the ECD space and validated the list of resources pooled for review under this assignment.

1.3 Analysis

Results from the various sources were analyzed in accordance with the set objectives and profiles of initiatives and their key program design notion. A set of indicators were developed to conduct a typology of the resources reviewed, and this information is presented in this report, along with the description of each resource (as an ECD costing tool or guide) that is included in the review. Finally, the resource is published as a freely available public good on

the ECDAN webpage here. The ECD costing webpage contains a short brief annotating the costing guides, initiatives, and tools curated as part of this knowledge fellow work.

2. Costing tools and guides

2.1 Cost tools/templates

2.1.1 Brookings Institute Childhood Cost Calculator Costing method

The Childhood Cost Calculator (C3) from the Center for Universal Education at Brookings is a free, user-friendly tool for costing childhood interventions across a wide range of sectors related to children and young people, including education (early childhood through tertiary), health, nutrition, water and sanitation, social protection, and governance. Built on the Tangerine platform from Research Triangle Institute (RTI International), C3 can be used by stakeholders across the spectrum including policymakers, funders, implementers, and researchers to help answer a multitude of costing questions related to program/intervention planning, adaptation and changes, and cost distribution. C3 can also assist in answering questions related to cost-effectiveness and cost-benefit analyses when paired with evaluation and economic benefit data respectively.

C3, which was piloted in several countries throughout 2022 before its 2023 launch, builds upon nearly a decade of research focusing on ECD costs and costing out of the Center for Universal Education (CUE) at the Brookings Institution. This early work led to the Standardized ECD Costing Tool (SECT) which was created and piloted in collaboration with the World Bank and launched in 2017. SECT aimed to provide methodological consistency to costing the full range of ECD interventions. While SECT was a major step forward in reducing barriers to costing within ECD, it also highlighted areas of challenge and opportunity for the future.

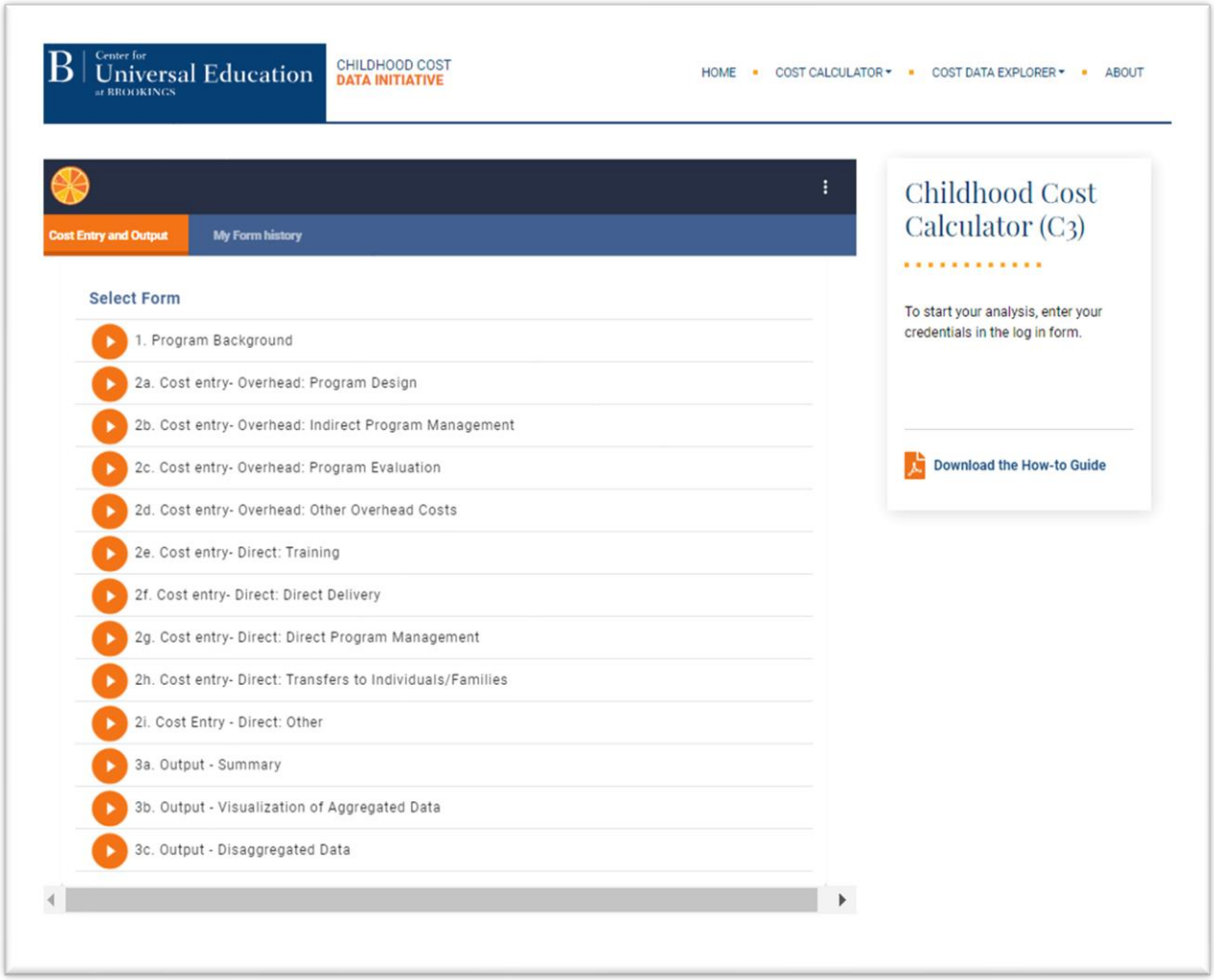
Based on the learnings from SECT, Brookings developed C3. Addressing feedback from SECT, C3 was engineered with novice users in mind. It includes built-in functionalities including currency conversion and amortization. Users enter costs into a questionnaire, which then generates data visualizations that can be filtered by cost category, resource type, cost year, investment/recurrent costs, and intervention sector and type. Disaggregated data can be downloaded in CSV format. With guidance documents freely available online and future plans for expanded languages, C3 exemplifies a focus on reducing reliance on global north experts and reinforces local actors' capacity to complete costing exercises.

To further advance the momentum of transparency in cost data, users of C3 have the option to consent to have aggregated data included in the Cost Data Explorer. This database of childhood intervention and program costs makes costing data widely and publicly available, allowing funders, implementers, and policymakers to examine the range of costs by type of program and context, aiding their decision-making processes.

C3 can be used at any point during an intervention - retrospectively, concurrently, or prospectively and C3 users can perform a range of cost calculations, estimates, and

simulations. As such, the tool can be used by users such as policymakers, funders, researchers, or anyone seeking to answer the following questions:[i]

- What resources are needed to deliver an intervention?
- Is the project feasible within a given budget?
- What are the cost implications of a programmatic change, such as in dosage?
- What would be the cost of scaling up a program or intervention?
- How do the costs of intervention A compare to those of intervention B?
- What are the cost drivers of an intervention?
- What is the cost per beneficiary [unit cost] of an intervention or program?
- How are costs distributed across cost categories for an intervention or program?
- How are the costs distributed across resource categories for an intervention or program?
- How are the costs distributed between one-time costs and recurring costs?



[i] See also: https://www.brookings.edu/blog/education-plus-development/2021/12/23/getting-both-costs-and-effectiveness-right-to-improve-decisionmaking-in-education/.

2.1.2 ILO Care Policy Investment Simulator

The ILO Care Policy Investment Simulator is a web-based policy modeling tool developed by ILO. The tool can be used to simulate and calculate the investment requirements in four care policy areas: (1) childcare-related paid leave (maternity, paternity, and individual parental leave for mothers and fathers), (2) paid breastfeeding breaks, (3) early childhood care and education (ECCE) services, and (4) long-term care services and related employment and gender-equality benefits for 82 countries. It builds on over 180 statistical indicators.

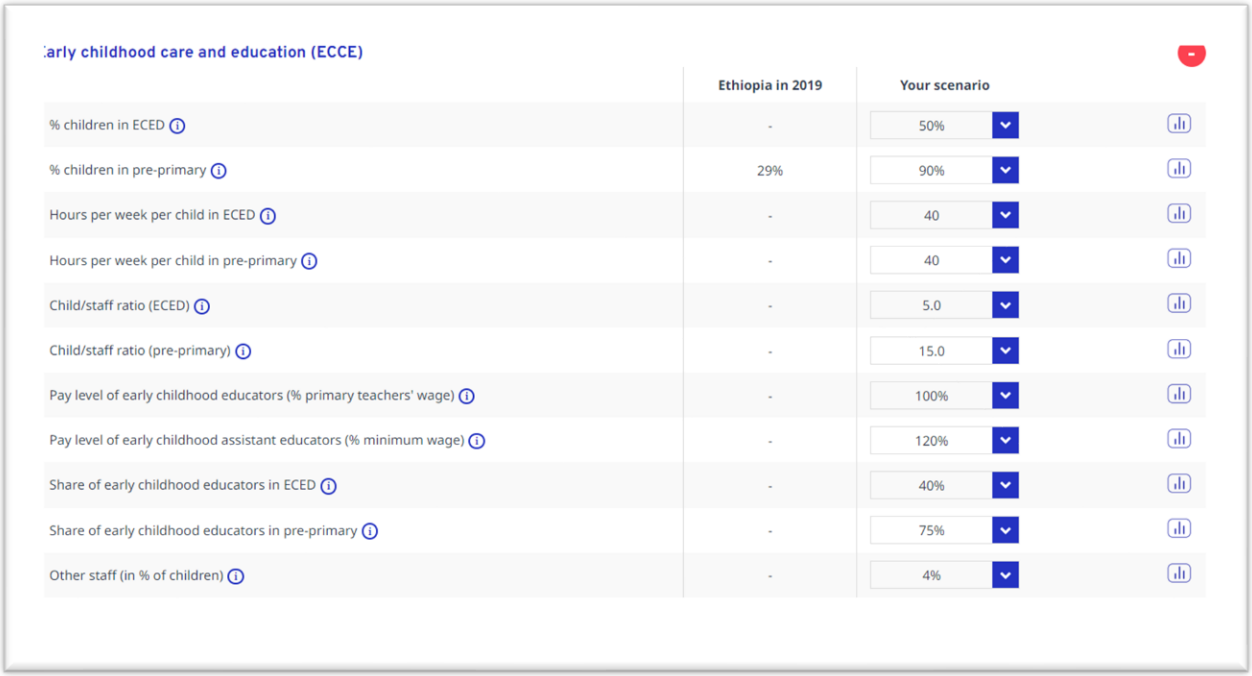
Using the simulator is free, easy, and straightforward. Users are required to sign up with a valid email address and might have to wait for a few minutes to receive approval from the system managers to proceed with using the tool. Once in the system, users can select a series of policy parameters for each of the four care policy areas for the period (2035 or 2050). Customization is allowed to some extent in that users can choose from a set of already built-in/input data. Upon entering the system, the user will see the default policy parameters set by ILO and can modify each parameter within a list of predetermined options. Once the policy parameters are selected, the tool calculates the annual public investment required for each policy and the resulting employment, earnings, and fiscal effects.

This tool enables users to carry out a cost-benefit analysis for planning, budgeting, and policy and legal reforms. The benefits modeled are the investment's short-term employment and earning effects, especially in terms of closing gender employment and wage gaps, and the resulting annual fiscal revenue. Here, the increase in employment stems from direct job increases in the care service industries where the investment takes place, indirect increases in the industries that supply the care sector, and consumption-induced increases in the economy in general, since households of the newly employed would spend part of their increased earnings. For some policies, the tool also estimates a long-term return on investment, which is the increase in GDP (measured in US$) per dollar spent on ECCE and paid childcare-related leave (see Figure 2).

Figures 1 and 2 are snapshots of the simulation tool interface for ECCE.[ii]

[ii] Providing near-universal, free, high-quality childcare to children under the age of compulsory school entry (two age groups: early childhood educational development from 0 to 2 years old and pre-primary from age 3 until the age of entry into primary school).

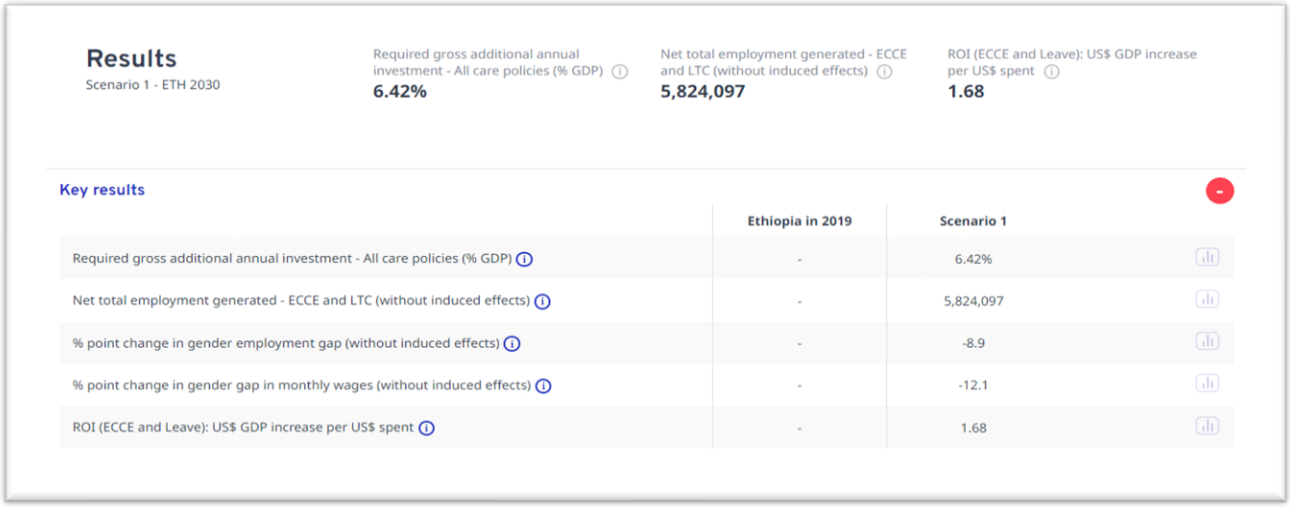
Figure 1. Snapshot of the ECCE policy indicators in the ILO Care Policy Investment Simulator user interface.



arly childhood care and education (ECCE)

	Ethiopia in 2019	Your scenario
% children in ECED	-	50%
% children in pre-primary	29%	90%
Hours per week per child in ECED	-	40
Hours per week per child in pre-primary	-	40
Child/staff ratio (ECED)	-	5.0
Child/staff ratio (pre-primary)	-	15.0
Pay level of early childhood educators (% primary teachers' wage)	-	100%
Pay level of early childhood assistant educators (% minimum wage)	-	120%
Share of early childhood educators in ECED	-	40%
Share of early childhood educators in pre-primary	-	75%
Other staff (in % of children)	-	4%

Figure 2. Snapshot of the ECCE results section in the ILO Care Policy Investment Simulator user interface.



Results

Scenario 1 - ETH 2030

Required gross additional annual investment - All care policies (% GDP): **6.42%**

Net total employment generated - ECCE and LTC (without induced effects): **5,824,097**

ROI (ECCE and Leave): US$ GDP increase per US$ spent: **1.68**

Key results

	Ethiopia in 2019	Scenario 1
Required gross additional annual investment - All care policies (% GDP)	-	6.42%
Net total employment generated - ECCE and LTC (without induced effects)	-	5,824,097
% point change in gender employment gap (without induced effects)	-	-8.9
% point change in gender gap in monthly wages (without induced effects)	-	-12.1
ROI (ECCE and Leave): US$ GDP increase per US$ spent	-	1.68

Data availability on some of the policy indicators varies across countries. For example, data on opening hours and child/staff ratios that count both teachers and assistants are only available for Eurostat countries.

The simulator is now accompanied by a step-by-step *ILO Care Policy Investment Simulator: Technical Note*, published in March 2023 and available in English, French, and Spanish (contact: carepolicy@ilo.org).

2.1.3 UNICEF ECE Accelerator Simulation Model

UNICEF's ECE Accelerator Simulation Model is a modeling and costing tool, downloadable in an Excel-based platform. It helps countries estimate national needs to promote universal access to pre-primary education (per SDG 4.2). The tool provides a detailed projection of the human, infrastructural, and financial resources needed to meet national ECE targets, as defined by national Education Sector Plans (ESPs). The projection period spans ten years, from 2021 (baseline) through 2030. However, this can be changed to any subsequent value in the upcoming years.

Seven "basic datasets will be required for the simulation model to work effectively:

1. Population data for nationals and refugees' populations
2. Enrolment data for public, private, community, and public-private schools
3. Dropout and repetition rates for the baseline year
4. Teachers and caregivers' data for personnel engaged in ECE and the existing gap
5. Infrastructure available for ECE and the existing gap
6. Unit costs of basic infrastructure and human resource inputs
7. Trends of ECE budgets over the last ten years."[14]

All data for the model will be added to the "inputs" sheet. All the other sheets will be automatically populated based on that data. The model in its current form looks at three years of pre-primary education, with the biological ages of 3 to 5 years. Countries prioritizing one year of pre-primary education before going for the full three-year program can make use of the same model. The tool can show annual enrollment and resource projections that are inclusive of considerations for children with special needs. It can be adaptable to various subsector strategies and applicable to national and subnational levels.

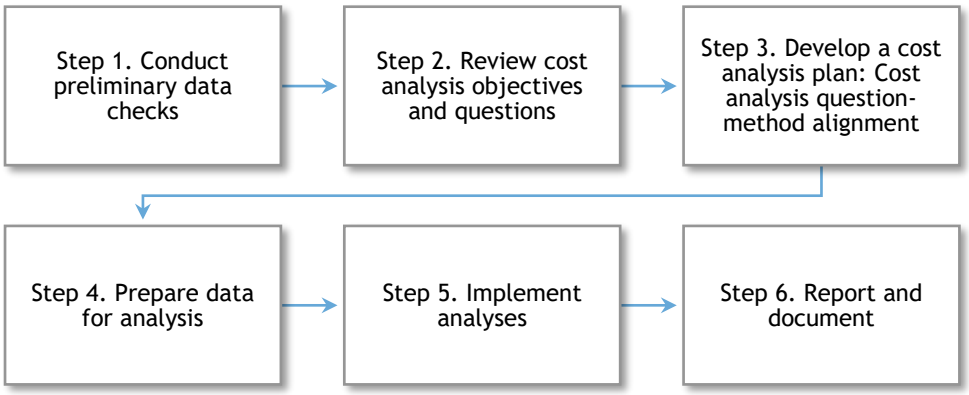
The tool is accompanied by a detailed step-by-step *Early Childhood Education Accelerator Simulation Model: User Guide* (for more information, contact abalam@unicef.org).

2.1.4 USAID Cost Analysis Guidance Tools and Templates

USAID's Bureau for Development, Democracy and Innovation / Center for Education provides an Excel-based tool, Cost Analysis Guidance Tools and Templates, that facilitates the establishment of systems and processes for capturing and analyzing the costs of education intervention, increasing transparency to allow for the linkage of costs to outcomes, and enabling value-for-money analysis, thus providing a pathway toward resource optimization across programs and contexts.

The tool is accompanied by a detailed *Cost Analysis Guidance for USAID-Funded Education Activities* and follows a theory of change framework from inputs/activities to outcomes. The sections of the tool are organized following what the cost analysis guidelines outlined as "six steps needed to successfully perform analysis of cost data sets…, from the perspective of a cost analyst. While some of them could be (and should be) implemented by people other than a cost analyst, the analyst will need to ensure that all six steps are completed when managing a cost study"[15] (Figure 3).

Figure 3. Six essential steps for cost data analysis.



Adapted from: Walls et al, 2021[15] (see also https://www.edu-links.org/resources/usaid-cost-measurement).

The Excel tool covers the first four steps and can assist in conducting retrospective (cost economy, cost efficiency, and cost-effectiveness) and prospective (scale-up, replication, and transfer) cost analyses.

USAID's *Cost Reporting Guidance for USAID-Funded Education Activities* lays the foundation for the cost analysis. Per the *Cost Analysis Guidance*, analysts "can use alternative tools and templates as long as they adhere to the key elements of USAID/Education Cost Analysis…:

1. Analysis uses cost data collected in real-time (not budgets)
2. Analysis follows the six steps outlined in this guidance
3. Analysis adheres to the methodological elements of USAID/Education approach
4. Analysis uses World Bank Development Indicators in currency and inflation adjustments
5. Discount rates for costs as well as benefits are set at zero
6. The presentation of findings is transparent and lists assumptions and limitations."[16]

Additional costing resources can be found in the USAID education cost measurement tools page, including *Cost Reporting Manual* (template), Cost Reporting Field Guide, and Contributions and Dosage Reporting Templates.

2.1.5 UNESCO Simulation for Education (SimuED)

UNESCO's downloadable Excel-based education sector-wide simulation model, SimuED, allows users to project key indicators for SDG 4 to facilitate national planning. The model has several versions, with the latest update, 4.0, coming out in 2022. The first model was launched in 2019 (SimuED 2.0), and it was further revised in 2020 (SimuED 2.1). SimuED 2.0, provides users with more than 100 options for built-in modules, without having to deal with complicated formulas. The tool allows users to customize the model according to a particular country context by creating their own add-on modules to augment the generic core model.

In the more efficient and user-friendly 4.0 version, the built-in help function explains each module thoroughly, and the module filling operation is simplified. The tool supports the estimation of resource requirements and so can be used to project education indicators to facilitate policy and planning processes.

UNESCO anticipates that video tutorials will be available soon, and users can consult UNESCO should the need for further help or information/support arise (contact: Ms. Satoko Yano, s.yano@unesco.org). Additionally, examples are provided upon request. The tool and help files, as well as the two-page installation guide, can be downloaded from the website.

2.1.6 EiE [Education in Emergencies] Cost Capture Template

The EiE Cost Capture Template is an Excel-based tool from the United Nations Girls' Education Initiative that guides education-specific gender-responsive cost tracking for emergency interventions, as well as provides flexible support for tracking program costs before, during, and after implementation. The template is developed based on an ingredient costing approach and allows for inflation and currency adjustments. Users can perform cost-economy and cost-efficiency analysis. The last sheet of the tool provides a space to document questions that arise during costing and the response provided (if any), and by whom.

Section 3 of the *EiE-GenKit* provides tools to guide planning and program design for gender-responsive interventions, and Section 3.3 ("Gender-Responsive EiE Costing, Cost Tracking and Cost Analysis") in particular provides guidance and tools for EiE costing. Section 3.3 aims to facilitate understanding around gender-responsive EiE intervention costs in several areas: considerations of both costs per person and total costs of parts of an activity; why and how to track such costs; and why, when, and how to conduct a "rapid cost analysis" on such costs to adapt to context-specific interventions.

The primary intended users of the tool and GenKit are national/regional EiE managers and personnel involved in proposal design, budget development and monitoring, and financial reporting (i.e., finance managers), as well as cluster coordinators involved in setting costing standards/guidelines as part of the cluster strategy process. In 2021 when the *EiE-GenKit* was published, the EiE Cost Capture Template was undergoing field testing. The tool will be continually updated, along with additional user guidance (note that additional user guidance on the template might be forthcoming).

2.1.7 Abdul Latif Jameel Poverty Action Lab (J-PAL) Costing Templates

There are two downloadable Excel-based costing template resources from J-PAL, the J-PAL Costing Template and Basic J-PAL Costing Template. The detailed J-PAL Costing Template helps users generate estimates of total program costs by providing a comprehensive list of the various cost categories/elements that may be included in a program and prompting users to input various details about cost data within each category (i.e., unit cost, number of units, currency, year, etc.). However, gathering very detailed cost data is not always possible. If these data are unavailable, then users can utilize the Basic J-PAL Costing Template to generate a rough estimate of program costs by breaking costs into main or general categories/elements.

The templates are accompanied by the *J-PAL Costing Guidelines*.

2.2 Costing guidelines/notes

2.2.1 USAID Cost Analysis Guidance

The guidance notes by USAID's Development, Democracy and Innovation / Center for Education put forward a common framework for analyzing costs of USAID-funded education interventions. *Cost Analysis Guidance for USAID-Funded Education Activities* (2021) is

produced for USAID evaluation partners, implementing partners, and USAID Missions commissioning cost studies. It builds on and is complemented by the *Cost Reporting Guidance for USAID-Funded Education Activities* (2018). The cost analysis approach presented in the 2021 document is designed to be applicable to the cost data collected per the 2018 one. Both guidance notes build on existing systems and best practices for the collection and analysis of cost data. The newer guidance is designed to help establish the process and procedures for how evaluators and cost analysts examine cost data in the education sector and set standards for reporting on findings. In the 2021 document, USAID suggests that "adherence to this guidance will ensure comparability and transparency of cost analysis results and lay a strong foundation for continuous learning and improvement in the cost-efficiency and cost-effectiveness of USAID-funded education interventions."[17]

The costing approach adopted in the *Cost Analysis Guidance* analyzes actual expenditures incurred from interventions and adjusts for currency and inflation. Amortization or depreciation is not applied, and costs and benefits are not discounted over time. Also, costs toward the intervention are counted for all stakeholders, including donors, implementing and governmental partners, nongovernmental organizations (NGOs), the private sector, and individuals. With regard to inflation and currency conversion, the guide recommends that the standard order of operations is currency conversion first and inflation adjustments second to help maintain methodological consistency across the portfolio.

The *Cost Analysis Guidance* is organized into two main parts: "The opening part outlines common cost questions that USAID staff and implementing partners, partner governments, research organizations, academics, and other stakeholders may be asking, and presents an overview of analytical methods suited to answering these different questions [e.g., Why invest in cost measurement?]. It also describes typical cases of cost analysis results utilization and broader applicability of findings. USAID staff, partner governments, and commissioners of cost analyses will find this part useful. The second part of [the] document contains a practical guide to implementing cost data analyses, with templates and resources. This part is designed for researchers, evaluators, and cost analysts. [The] guide is designed to be applicable to all types of cost and expenditure analysis, with and without impact evaluation data."[17]

2.2.2 Additional tools from ECE Accelerator toolkit

Section 3 of the UNICEF ECE Accelerator toolkit focuses on establishing a vision to inform ESPs and offers a set of tools to support the planning process, including Tool 3.3: Tips, Checklist and Examples of ECE Accelerator Simulation Models. Simulation models are typically developed after the Education Sector Analysis when determining policy priorities during ESP preparation and the ECE components of that ESP. A simulation model is helpful in "testing" the impact of various policy options to explore their relative feasibility, scalability, and sustainability, supporting the "iterative process" of adjusting proposed priorities, strategies, activities, targets and costs for inclusion in the ESP.

Sections, templates, and tools on the ECE toolkit build on and feed into one another; however, Tool 3.3 can be used independently, depending on the need of the user. The tools can be relevant and applicable in the context of developing ECE plans in general—for example, they may be used to support formulation of an ECE plan for a funding/grant opportunity or for guiding subsector reform.

The two types of projections indicated in the ECE simulation model examples are need-based and intervention-based models:

- Need-based projections are driven by a target in terms of participation (e.g., in the case of ECE, the Net Enrollment Rate or percentage of first-grade students with preschool experience). All financial projections are based on this target and resulting enrollment, as well as the costs associated with providing services for them (e.g., Sao Tome and Principe simulation model). These models are commonly prepared as part of ESPs and are based on a comprehensive view of education and ECE costs.
- Intervention-based projections, less commonly used than need-based projections, assume an increase in the capacity to provide ECE services and/or demand for them from the SP interventions (e.g., by building new schools/classrooms or reducing fees or other costs for families). The number of children enrolled will be derived from this increase in capacity or demand. Because they are driven by interventions and often ignore existing core functions of ministries of education, these models are generally not all-inclusive but, rather, project costs that would be additional to the current education budget. In this way, they are generally more detailed and less comprehensive than need-based projection models (e.g., Lesotho simulation tool).

2.2.3 J-PAL Costing Guidelines

The *J-PAL Costing Guidelines* provide an outline on how to approach the collection of cost information, what costs to include and exclude, and how detailed cost data should be.

2.2.4 International Rescue Committee (IRC) cost analyses

The IRC is adopting consistent cost analysis methodology to analyze whether key interventions are cost-efficient (e.g., teacher professional development, malnutrition treatment) or cost-effective (e.g., parental coaching programs) to use in programming decisions and advocacy work. IRC costing resources include the following:

- The Cost analysis methodology at the IRC report documents the methodology used by the IRC in conducting cost-efficiency and cost-effectiveness analyses. The report covers costing methodological issues, such as identification of program ingredients, discounting, exchange rates, inflation cash/in-kind transfers, volunteer or beneficiary time, and public presentation of cost data.
- The Systematic Cost Analysis (SCAN) tool is a web-based software designed to allow rigorous, rapid analysis of the cost-efficiency of programs through reuse of existing accounting and monitoring data. The tool was developed by the IRC, but a handful of NGOs—including Accion Contra el Hambre, CARE, Mercy Corps, and Save the Children—came together in 2018 to build a new version of the tool that is compatible with any financial system and stores data from different NGOs separately and securely.

2.2.5 Building Evidence in Education (BE^2) Cost Measurement Guidance Note

This *Cost Measurement Guidance Note* from the BE^2 working group is a tool for facilitating the adoption of robust cost measurement practices, hopefully resulting in more effective global investments in education development. It includes recommended steps for instituting cost measurement practices in an international donor agency.

Providing a common framework for cost measurement will allow comparisons of cost-efficiency and cost-effectiveness across global donor-funded interventions in education, and

adopting clear standards for cost studies would promote and expand a knowledge base and, ultimately, the efficiency and effectiveness of international education investments.

This guidance can be useful to those who are commissioned to produce research, independent researchers and academics, and implementation partners of multilateral donors, as well as national governments.

2.2.6. UNESCO International Institute for Educational Planning (IIEP) costs and financing of education

The IIEP's costs and financing of education resource supports UNESCO Member States in the costing and planning their education development plans by providing four mechanisms: (1) education sector analysis, (2) National Education Accounts, (3) a cost simulation model, and (4) a link between education planning and budgeting.

IIEP participated in the production of *Education Sector Analysis Methodological Guidelines*, which allows readers to become familiar with the method of analyzing costs and financing used in the context of the education sector analysis.

IIEP also offers a specialized course on projection methods and techniques and simulation models with the objective of providing participants with the foundation needed to develop a simulation model autonomously. The priority target audience is the staff of ministries responsible for education and training who wish to broaden their skills to strengthen the "costs and financing" phase of sectoral planning. (More information can be found here.)

Table 1. Topology of the ECD costing tools and templates

Features	Brookings Childhood Cost Calculator (C3)	ILO Care policy Investment Simulator	ECE Accelerator Simulation Model	USAID Education Cost Analysis Approach	Simulation for Education (SimuED) UNESCO	EiE Cost Capture Template	J-PAL Detailed Costing Template
Developer	Brookings Center for Universal Education	ILO	UNICEF	USAID Center for Education	UNESCO	UN Girls' Education Initiative (UNGEI)	J-PAL
Purpose	To facilitate the costing of past, current or future (potential) programs to determine cost per beneficiary and total (resources needed), compare costs between initiatives, understand cost distribution, and costs of scaling	To present how to close the care policy gaps through investments in the country-specific gender-transformative care policy packages and assess the multiple benefits of investing in the care economy.	Estimating the resources required for achieving SDG 4.2 targets-material, human, and financial resources required for Education Sector Planning and ECE subsector planning processes.	Improve sustainability and overall value for money[iii] of USAID education programming through a better understanding of cost structures, cost efficiency and cost-effectiveness of interventions	Education sector-wide simulation selected key SDG4-Education indicators to facilitate national planning exercise	To understand gender-responsive unit costs (costs per person) and ingredient costs (total costs of parts of an activity) considerations across common Education in Emergencies (EiE) intervention types;	To collect costs for all ingredients needed to implement a program or intervention, excluding the costs of evaluating the impact of that program. Collecting this cost data will help NGOs, governments, and other policymakers determine how much replicating or scaling up a program will cost.
Costing Approach	Micro-costing/ Ingredients-based costing	Macro-simulation	Macro-simulation	Micro-costing/ Ingredients-based costing	Macro-simulation	Ingredient costing	Ingredient costing
Type of Analysis	Retrospective and prospective	Prospective	Prospective	Retrospective and prospective	Prospective	Retrospective and prospective	Retrospective and prospective
What questions does it answer?	Cost economy analysis Cost efficiency analysis Planning, budgeting, scaling CBA indirectly and Cost-effectiveness coupled with impact evaluation	simulate the annual investment costs and potential employment creation	Planning, budgeting, scaling	Cost economy analysis Cost efficiency analysis Planning, budgeting, scaling	Planning, budgeting, scaling	Cost economy analysis Cost efficiency analysis Planning, budgeting, scaling	Cost economy analysis Cost efficiency analysis
Platform and Format	Web-based	Web-based	Downloadable excel based	Downloadable excel based	Downloadable excel based	Downloadable excel based	Downloadable excel based

[iii] *Value-for-Money (VfM) implies Spending resources in such a way that they maximize the intended outcomes. While there is no single, commonly accepted approach to establishing "the VfM" of an investment, DFID's 4E framework (economy, efficiency, effectiveness and equity) is the most widely recognized one in international development. In the USAID Cost Analysis guidance notes, VfM analysis is understood as a qualitative judgment about the value of the investment against alternatives in advancing its objectives, based on cost and result data, either actual or hypothetical.*

3. What are emerging common themes and trends in the costing tools and guidelines?

There is undoubtedly growing consensus about the multifaceted benefits of ECD[18,19,20,21]. The sector is still suffering from limited investment[22] in low- and middle-income countries (LMICs) despite the improving awareness on the interconnectedness of child development outcomes and other development results such as poverty, education, and maternal health[23,24].

Data in general and cost data in particular are critical to facilitate investment decisions that improve the volume, equity, efficiency and effectiveness of ECD programmes. Such data are needed for a diverse set of users (including national and international level users- governments, multilateral and bilateral organizations, and researchers). The resources included in the review echo three common themes. Firstly, cost data are critical to improve informed strategic decision making not only for investment in but also for scaling up and expanding existing initiatives. Secondly, the documents reviewed reiterate that there is a growing demand for cost data in ECD interventions- from development to humanitarian spaces. Thirdly, currently there are a variety of alternatives for costing tools and guidance documents available. Yet none of these tools are appropriate in every scenario. The key determining factors in the selection of a fit-for-purpose tool are the cost questions intended to be answered, the availability of relevant data, capacity and resource availability.

Other key themes that surfaced from this landscape analysis include:

Given a lot of development and growing work in the costing in the ECD space, still it is a hard task to locate available costing resources- this might limit access to the resources (guides, tools, templates and training resources) for those who need them the most – ECDAN costing knowledge repository/webpage which is part of the of this fellowship deliverable in this regard is one great step in curating and availing costing resources in one place.

Lastly, costing initiatives in ECD area are encouraging and expanding, and still more work is required to better understand/know the resources and initiatives particularly- about their take-up rate in the countries, lessons learnt and what they are exactly facilitating on the ground given the cost analysis aims they set forth- enhancing transparency, comparability, and provision of cost data of interventions.

4. Takeaways and/or next steps

There have been efforts to standardize costing approaches aiming at enhancing sustainability, comparison, and transparency of ECD interventions across various contexts. Example Building Evidence in Education (BE2) donor working group which provided Building Evidence in Education (BE2) Cost Measurement Guidance Note; the Brookings and World Bank partnership in piloting the SECT tool, and the latest Global Education and ECD Costing Consortium (GEECC) initiative which include partners from ECDAN, Brookings, USAID, UNICEF, and SEEMs.

It is vital to learn more from stakeholders about use of the ECD costing guidelines and tools—particularly, who is using them, what is working or not working, and what is the value addition of each in relation to existing resources. Additionally, by identifying what is required to promote ECD costing, possible courses of action for users can be explored.

REFERENCES

1. UNICEF (2022) *Early childhood development*, *UNICEF DATA*. Available at: https://data.unicef.org/topic/early-childhood-development/overview/ (Accessed: 15 June 2022).

2. Levin, H., P. McEwan, C. Belfield, A.B. Bowden, and R. Shand. 2018. Economic Evaluation in Education Cost Effectiveness and Benefit-Cost Analysis. Thousand Oaks, CA: Sage Publications.

3. United Nations (2015) *Secretary-general's remarks at event on investing in early childhood development as the foundation for sustainable development [as delivered] secretary-general*, *United Nations*. Available at: https://www.un.org/sg/en/content/sg/statement/2015-09-22/secretary-generals-remarks-event-investing-early-childhood (Accessed: 14 June 2022).

4. Grant, C., 2017. The contribution of education to economic growth. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies. https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/13117

5. Liao et al., 2019. Liao, L., Du, M., Wang, B. and Yu, Y., 2019. The impact of educational investment on sustainable economic growth in Guangdong, China: A cointegration and causality analysis. Sustainability, 11(3), p.766.

6. Tierney AL, Nelson CA. Brain development and the role of experience in the early years. *Zero to Three*. 2009;30(2):9–13. https://pubmed.ncbi.nlm.nih.gov/23894221/.

7. The Science of Early Childhood Development. (2007) National Scientific Council on the Developing Child. http://www.developingchild.net

8. Duncan GJ, Magnuson K. Investing in preschool programs. *Journal of Economic Perspectives*. 2013;27(2):109–132. https://doi.org/10.1257/jep.27.2.109.

9. Rossin-Slater M, Wüst, M. (2020). What is the added value of preschool for poor children? Long-term and intergenerational impacts and interactions with an infant health intervention. *American Economic Journal: Applied Economics*. 2020;12(3):255-286.

10. Neuman MJ, Powers S. Political prioritization of early childhood education in low-and middle-income countries. *International Journal of Educational Development*. 2021;86:102458. https://doi.org/10.1016/j.ijedudev.2021.102458.

11. Shawar YR, Shiffman J. Generation of global political priority for early childhood development: the challenges of framing and governance. *Lancet*. 2017;389(10064):119-124.

12. IIEP-UNESCO website Early childhood education: Costs, quality and financing page. https://www.iiep.unesco.org/en/our-expertise/early-childhood-education-costs-quality-and-financing. Accessed April 15, 2023.

13. Walls, Elena, Tulloch, Caitlin, and Holla, Alaka. 2020. "Cost Measurement Guidance Note for Donor-Funded Education Programming." Washington, DC: United States Agency for International Development, prepared for Building Evidence in Education (BE2).

14. UNICEF. *Early Childhood Education Accelerator Simulation Model: User Guide*. New York, NY: UNICEF; 2022: 5. https://www.ece-accelerator.org/sites/default/files/2022-09/Guide%20for%20Using%20ECE%20Accelerator%20Simulation%20Model_FV_0.pdf#page=5.

15. Walls E, Tulloch C, Harris-Van Keuren C. Cost Analysis Guidance for USAID-*F*unded Education Activities. 2nd ed. Washington, DC: US Agency for International Development; 2021: 34. https://www.edu-links.org/sites/default/files/media/file/USAID-Cost-Analysis-Guidance-Final-102921-508.pdf#page=44.

16. Walls E, Tulloch C, Harris-Van Keuren C. *Cost Analysis Guidance for USAID-Funded Education Activities*. 2nd ed. Washington, DC: US Agency for International Development; 2021: 38. https://www.edu-links.org/sites/default/files/media/file/USAID-Cost-Analysis-Guidance-Final-102921-508.pdf#page=48.

17. Walls E, Tulloch C, Harris-Van Keuren C. *Cost Analysis Guidance for USAID-Funded Education Activities*. 2nd ed. Washington, DC: US Agency for International Development; 2021: 2. https://www.edu-links.org/sites/default/files/media/file/USAID-Cost-Analysis-Guidance-Final-102921-508.pdf#page=12.

18. World Bank, 2018. World Development Report: Learning to Realize Education's Promise. World Bank Group.

19. García, Jorge Luis, James J. Heckman, Duncan Ermini Leaf, and María José Prados. "Quantifying the life-cycle benefits of an influential early-childhood program." Journal of Political Economy 128, no. 7 (2020): 2502-2541.

20. Jeong, J., Franchett, E. E., Ramos de Oliveira, C. V., Rehmani, K., & Yousafzai, A. K. (2021). Parenting interventions to promote early child development in the first three years of life: A global systematic review and meta-analysis. PLoS medicine, 18(5), e1003602.

21. Gertler P, Heckman J, Pinto R, et al. Labor market returns to an early childhood stimulation intervention in Jamaica. Science 2014; 344: 998–1001.

22. Neuman, M. J., & Powers, S. (2021). Political prioritization of early childhood education in low-and middle-income countries. International Journal of Educational Development, 86, 102458.

23. Maluccio JA, Hoddinott J, Behrman JR, Martorell R, Quisumbing AR, Stein AD. The impact of improving nutrition during early childhood on education among Guatemalan adults. Econ J 2009; 119: 734–63.

24. Hoddinott J, Maluccio JA, Behrman JR, Flores R, Martorell R. Effect of a nutrition intervention during early childhood on economic productivity in Guatemalan adults. Lancet 2008; 371: 411–16.

APPENDIX: COMPARISON TABLE

Features	Brookings Childhood Cost Calculator (C3)	International Labour Organization (ILO) Care Policy Investment Simulator	Early Childhood Education (ECE) Accelerator Simulation Model	US Agency for International Development (USAID) Education Cost Analysis Approach	United Nations Educational, Scientific and Cultural Organization (UNESCO)	Education in Emergencies (EiE) Cost Capture Template	Abdul Latif Jameel Poverty Action Lab (J-PAL) Costing Template (detailed)
Developer		ILO	UNICEF	USAID Center for Education	UNESCO	United Nations Girls' Education Initiative	J-PAL
Purpose	To facilitate the costing of past, current or future (potential) programs to determine cost per beneficiary and total (resources needed), To compare costs between initiatives, understand cost distribution, and costs of scaling	To present how to close the care policy gaps through investments in the country-specific gender-transformative care policy packages and assess the multiple benefits of investing in the care economy	To estimate the resources required for achieving Sustainable Development Goal (SDG) 4.2 targets, as well as material, human, and financial resources required for creating an Education Sector Plan and ECE subsector plan	To improve sustainability and overall value for money of USAID education programming through a better understanding of cost structures, cost-efficiency, and cost-effectiveness of interventions		To understand gender-responsive unit cost (costs per person) and ingredient cost (total costs of parts of an activity) considerations across common EiE intervention types	To collect costs for all ingredients needed to implement a program or intervention (excluding the costs of evaluating the impact of that program) to help nongovernmental organizations, governments, and other policymakers determine how much replicating or scaling up a program will cost
Costing Approach	Micro-costing / ingredients-based costing	Macro-simulation	Macro-simulation	Micro-costing / ingredients-based costing	Macro-simulation	Ingredients-based costing	Ingredient costing
Type of Analysis	Retrospective and prospective	Prospective	Prospective	Retrospective and prospective	Prospective	Retrospective and prospective	Retrospective and prospective
Focus of Application (what questions does it answer?)				Projections for enrollment, NER, human resources, infrastructure, and financial resources required through 2030	Estimation of resource requirements, which can be used to project selected SDG 4/ education indicators to facilitate policy and planning processes		Estimate of a program's impact (i.e., how much will replicating or scaling up a program cost?), which can be used to get a back-of-the-envelope calculation of the program's cost per unit of impact
Cost economy analysis?	Yes			Yes			Yes
Cost-efficiency analysis?	Yes			Yes			Yes
Planning, budgeting, scaling?	Yes	Yes, including legal reforms	Yes	Yes	Yes	Yes	Yes
Cost-effectiveness?	Yes, coupled with impact evaluation			Yes			
Cost-benefit analysis?	Yes, but indirectly	Yes, for planning					

Features	Brookings Childhood Cost Calculator (C3)	International Labour Organization (ILO) Care Policy Investment Simulator	Early Childhood Education (ECE) Accelerator Simulation Model	US Agency for International Development (USAID) Education Cost Analysis Approach	United Nations Educational, Scientific and Cultural Organization (UNESCO)	Education in Emergencies (EiE) Cost Capture Template	Abdul Latif Jameel Poverty Action Lab (J-PAL) Costing Template (detailed)
Platform and Format (web-based/online) and Language	Excel-based Web-based	Web-based	Excel-based (downloadable)	Excel-based (downloadable)	Excel-based (downloadable)	Excel-based (downloadable)	Excel-based (downloadable)
Applicable Sectors		- Parental leave - Breastfeeding breaks - Childcare and long-term care - Services with high-quality care jobs		Mainly for education	All education subsectors		Education, health, nutrition, water & sanitation, social protection, governance (related to any priory sector in the early childhood development area)
Additionally built features (e.g., currency conversion, amortization, cost data explorer)?	Yes			- No for amortization or depreciation - Yes for inflation and currency conversion adjustments			Only currency conversion
Provision for customization by user?			Yes, for country contextualization using the Semantics sheet		Yes		Yes
Instructions on how to use the tool / supporting materials or guidelines / templates		ILO care policy investment simulator: Technical note	User Guide for ECE Accelerator Simulation Model	Multiple guidelines and templates available on the USAID Cost Measurement web page, including: ■ Cost Analysis Guidance ■ Cost Reporting Guidance ■ Cost Reporting Field Implementation Guidance ■ Contributions and Dosage Reporting Template ■ Cost Reporting Manual Template ■ Implementing Partner Special Interest Group			- J-PAL Costing Guidelines - Comparative Cost-Effectiveness Analysis to Inform Policy in Developing Countries: A General Framework with Applications for Education.(2012)

Features	Brookings Childhood Cost Calculator (C3)	International Labour Organization (ILO) Care Policy Investment Simulator	Early Childhood Education (ECE) Accelerator Simulation Model	US Agency for International Development (USAID) Education Cost Analysis Approach	United Nations Educational, Scientific and Cultural Organization (UNESCO)	Education in Emergencies (EiE) Cost Capture Template	Abdul Latif Jameel Poverty Action Lab (J-PAL) Costing Template (detailed)
Intended Users				Primarily USAID evaluation partners, implementing partners, and Missions commissioning cost studies (for analyzing the costs of USAID-funded education interventions), with potential application for similar interventions, particularly if they also followed the Cost Reporting Guidance that complements the cost analysis resources.		Primary users, including: • National/regional EiE managers and personnel involved in proposal design, budget development and monitoring, and financial reporting (i.e., finance managers) • Cluster coordinators, who set costing standards and guidelines Collaborators such as education planners • Country Cluster or Local Education Working Groups • Stakeholders applying pooled funding criteria and standardized unit costs for response frameworks or strategies and/or joint proposals • Institutions' regional education advisors and/or other regional staff who support planning and budgeting of the cluster strategy process	
Tool-based Interventions					Piloted in various countries (including Cambodia, the Democratic Republic of Congo, the Central African Republic, and Cameroon) and progressively developed to reflect the country's needs		
Website and Contacts	https://www.brookings.edu/series/costing-early-childhood-development/ Emily Gustafsson-Wright, Senior Fellow, Center for Universal Education at the Brookings Institution						

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