



EdData II

Measurement and Research Support to Education Strategy Goal 1

User Guide for the *EGRA Calculator*

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Managerial Assistance**

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Measurement and Research Support to Education Strategy Goal 1 User Guide for the *EGRA Calculator*

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Introduction

This user guide accompanies the Excel-based *EGRA Calculator*, created by RTI International under the Education Data for Decision Making (EdData II) project, at the behest of the United States Agency for International Development (USAID). To create the tool, RTI was asked to draw upon nearly a decade of experience in implementing the Early Grade Reading Assessment (EGRA) globally.¹

This brief guide is organized into four sections:

- an overall description of the *EGRA Calculator's* design
- an explanation of how the tool is intended to be used
- limitations of the tool and associated adjustments that users can make
- instructions and tips matched to the sheets within the Excel workbook.

About the design of the *EGRA Calculator*

The *EGRA Calculator* is an Excel-based estimation tool that can produce an approximate budget reflecting the costs commonly associated with implementing an EGRA. The tool itself contains step-by-step instructions plus descriptions to guide the user to insert or adjust the parameters. Tips and suggestions for each step are also provided to help the user to enter appropriate and accurate information.

Summary of *EGRA Calculator* features

- Excel-based design
- Step-by-step instructions within the tool
- Adjustable inputs based on intended EGRA research design
- Suggested sample size based on user parameters
- Output in the form of an approximate budget

As of mid-2015, EGRA administrations had occurred in over 70 countries, carried out by various implementing organizations. Each application of EGRA is unique to the research being conducted, the local context of where the EGRA is being implemented, and the design of the sampling framework, all which are based on the specific goals and intentions of the research.

While context, research questions, scope, and design vary for each EGRA, there are certain factors or commonalities among EGRA implementations that can influence the overall budget. The *EGRA Calculator* guides a user through these general elements. For example, the number of languages, the number of grades, and the number of regions for which results are being reported are identified parameters which impact the sample size needed to collect statistically significant data.

The *EGRA Calculator* estimates a “suggested” sample based on parameters selected by the user. The user can manipulate the inputs based on the specific context and design of the

¹ More information about the EGRA is available from the EdData II website, <https://www.eddataglobal.org/reading/index.cfm>.

assessment. The tool subsequently generates an estimated cost based on “current” parameters (explained below) inserted by the user. As parameters are inserted or adjusted per the instructions, the overall budget fluctuates based on assumptions and general practices associated with effective EGRA implementation.

How the tool should be used

To reiterate, this estimation tool allows the user to input or select parameters that determine the cost of implementing an assessment. The essential information directly affecting costs includes

- sample size
- number of grades being sampled
- number of languages being assessed
- number of languages in which each pupil will be assessed
- EGRA subtasks to be administered
- reporting of results by region, urbanicity
- number of sampled schools
- number of assessors and supervisors
- number of assessor teams

The user should consider and account for these factors based on the specific design of the relevant project. Empty cells for other associated expenses that commonly impact the budget (these are explained in next section) have been included in the tool. These placeholder cells identify major activities for which labor or other direct costs may arise during the planning and implementing of an assessment but that are not possible to anticipate or auto populate.

The sample design and the implementation structure will vary for each study, as will the specific questions the research aims to answer. For this reason, the tool includes “suggested” and “current” parameters. The calculator bases the estimated costs on the “current” parameters entered by the user. The user can use the “suggested” parameters as a guide when inserting the “current” parameters.

Limitations of the *EGRA Calculator*

As with any estimating tool, the *EGRA Calculator* comes with some limitations and caveats.

Organizational structure. Based on the most common mode of EGRA administration, the calculator is designed to accommodate an organizational structure in which the headquarters office of the research team is located in a country other than the country of implementation.

Labor costs. Labor rates and labor hours will vary based on the implementing organization or location of implementation. For this reason, the tool does not automatically assume labor rates, hours, fringe, overhead costs, or other benefits. As such, the user must insert labor rates (per hour) and the number of hours expected to get an accurate estimate of the budget.

Travel inputs. Additional empty placeholder cells have been provided for known typical times of travel. The calculator is unable to account for origin and destination of travel or per diem rates that may apply. Instead, the user separately estimates and inserts into the calculator the costs per trip and the number of travelers. These amounts are included in the “total costs based on inputs” calculated by the tool.

Unit costs. Unit costs for items and supplies are used to estimate the budget once the parameters are selected or entered into the appropriate fields. The unit costs incorporated into the tool are calculated averages of several EGRAs, administered in a variety of contexts, implemented between 2013 and 2015.

Additionally, the items and supplies listed in the tool are ones that are known to be commonly used during an effective planning and implementation of an assessment. Other materials or supplies unique to an organization or context may not be included in the prepopulated list. When adjusting the unit costs or the list of materials, the user should also take into account additional specific limitations or circumstances that could impact implementation costs, such as electrical and Internet connectivity, local norms and practices, weather constraints, etc.

Currency adjustments. Although it does allow for specification of exchange rate, the tool does not account for inflation or currency fluctuation. The user can increase the accuracy of the tool by adjusting the unit costs to fit the particular context and location.

How to use the *EGRA Calculator*

The instructions in the following table mirror the order and structure of the fields and worksheets in the *EGRA Calculator*.

Step 1. What is the cell sample size or the size of each comparison group?	
Description:	The cell sample size is the number of pupils who will be sampled per comparison group. A comparison group is a given population for which you will report results. Example: grade 2 students.
Tips and Suggestions:	Based on administrations of EGRA in several countries to date, it is estimated that results from 400 students are needed for each comparison group of interest (see the <i>EGRA Toolkit</i> , p. 38). ² The cell sample size will affect the number of schools which need to be sampled. If the number of schools exceeds what is possible (given budget and time constraints), reducing the pupil sample size (by reducing the scope of the study) or the cell sample size is recommended. Pupils tend to vary more between schools than within, so sampling more schools is usually preferable to sampling more students within the same school to obtain a target sample size. However, the total number of pupils sampled should not drop below 400.

² RTI International. (2009). *Early Grade Reading Assessment toolkit*. Prepared for the World Bank, Office of Human Development, under Contract No. 7141961. Research Triangle Park, NC: RTI International. <https://www.eddataglobal.org/documents/index.cfm?fuseaction=pubDetail&id=149>

Step 2. How many grades will be sampled?	
Description:	The number of grades selected should reflect the research questions/purpose of the EGRA. For example, if the purpose is to collect information on grade 2 and 3 learners, then enter “2” grades.
Tips and Suggestions:	It is suggested to administer the EGRA in two grades whenever possible, in order to identify any grade-level gains.
Step 3. How many languages will be assessed overall? (i.e., how many separate instruments will be developed?)	
Description:	This number will correspond to the number of separate languages in which an instrument will be developed and for which results will be reported.
Tips and Suggestions:	It is important to note that this calculator assumes the number of languages does not directly correspond to the number of regions in which students will be sampled. Rather, the calculator assumes that selecting two languages means each sampled pupil will be assessed in both languages. Selecting three languages assumes that each sampled pupil will be assessed in three languages.
Step 4. In how many languages will each pupil be assessed?	
Description:	The number of languages (enter “1,” “2,” etc.) should correspond to how many languages each pupil will be assessed in.
Tips and Suggestions:	Increasing the number of languages in which each student will be assessed will not necessarily increase the sample size, but it will impact the number of one-on-one assessments (and the number of assessors and days it will take to complete data collection). It will also increase test fatigue. For this reason, it is generally recommended to limit the number of languages in which each pupil is assessed to no more than two.
Step 5. Select which subtasks will be included in the pupil assessment.	
Description:	From the list, select the subtasks (sometimes called <i>subtests</i>) that will be included in your EGRA instrument. If your EGRA will include a subtask not listed, select “Other.”
Tips and Suggestions:	<p>A common EGRA normally includes 5 core subtasks: letter sound or syllable identification, nonword or invented word reading, oral reading fluency, reading comprehension, and listening comprehension.</p> <p>Experience indicates that in one day, one assessor can administer a “core EGRA” to approximately 8 pupils per school. Adding subtasks to the EGRA will increase the amount of time it takes for one assessor to administer the instrument to one pupil, and thus reduce the per-person number of pupils assessed.</p> <p>The number of pupils per assessor per school will impact the number of days needed for data collection or the number of assessors needed to complete the data collection within a set number of days.</p>

Step 6. For how many geographic regions will EGRA results be reported?	
Description:	An EGRA can be nationally representative or can report results by region (or other subgroup) based on the research questions and design.
Tips and Suggestions:	The number of regions selected in this section should indicate in how many regions the data will be collected and analyzed for comparison. If results will be reported at the national level only, select "1." If you will report results by geographic region, select the number of geographic regions for which you want to report results.
Step 7. Will the sample be stratified by urbanicity? (i.e., urban vs. rural schools)	
Description:	Select this section if the research design and study specifically require data to compare urban versus rural schools.
Tips and Suggestions:	Do not select "yes" for this section simply because the schools in the sample will be located in both urban and rural areas. Select "yes" only if data will be disaggregated and reported by urban or rural status.
Step 8. How many schools will be sampled?	
Description:	The number of schools sampled is a product of total sample size and the number of pupils per grade per school who are to be sampled.
Tips and Suggestions:	It is typically suggested to sample only 10 to 12 pupils per grade per school. The calculator will suggest the number of schools to be sampled based on the required total pupil sample, and an estimate of 10 pupils per grade per school.
Step 9. How many assessors will be on each team?	
Description:	The number of assessors per team should correlate directly with the number of assessors available per the number of teams which will be collecting data during the fieldwork.
Tips and Suggestions:	It is generally suggested that each team consist of three assessors (plus one supervisor).
Step 10. How many teams will collect data?	
Description:	The number of teams needed is determined by dividing the total number of assessors by the number of assessors desired for a single team. In addition, it is recommended to have one supervisor for each team. (Example: If 20 assessors are available for data collection and each team will have 3 assessors plus 1 supervisor, there will be 5 teams.)
Tips and Suggestions:	The number of teams (and the total number of assessors and supervisors) will directly impact how many days it will take to complete the data collection process. It is recommended that data collection last no longer than two weeks. The number of teams (and the total number of assessors and supervisors) can be increased to decrease the number of days required for data collection.
Step 11. Enter labor rates and labor hours needed to complete the listed activities.	
Description:	Placeholders (i.e., row labels with empty data cells) are identified for main activities where labor rates and labor hours may be needed.
Tips and Suggestions:	The labor rates and labor hours should be specific to the rates and hours of the implementing organization.

Step 12. Enter the estimated expenses associated with travel.	
Description:	This section allows you to account for airfare, per diems, and other costs associated with domestic or international trips which may be required of home office or field office staff.
Tips and Suggestions:	Enter the number of people expected to travel for the indicated occasion. Then enter the estimated expenses calculated for the trip. Labor should not be included as part of Step 12, the estimated “cost per trip.” Instead, labor should be accounted for in Step 11.
Step 13. On the worksheet tab titled “Verify Sample & Unit Costs,” verify sample size inputs for pilot and full data collection based on the parameters selected on the previous tab.	
Description:	Check the sample size inputs to verify that each input matches the relevant parameters per the EGRA budget being calculated.
Tips and Suggestions:	The sample inputs should match the parameters from the previous tab.
Step 14. Adjust unit inputs to directly reflect unit costs of the items and expenses listed.	
Description:	The unit inputs section lists multiple items and the associated cost per one item or unit.
Tips and Suggestions:	The current costs listed in this section are averages of costs per unit (in US dollars) and are not specific to any particular context or area. The cost per unit can be updated based on the particular cost of one item in the location where the assessment is being conducted. Items such as venue rental rate, per diem payments, transportation, and lodging should ALWAYS be updated to reflect the estimated cost of the unit per the location of the assessment.

The final worksheet of the tool is labeled “ODC [Other Direct Costs] Cost and Breakdown.” The user is not guided in the previous instructions to manipulate any cells or calculations within this worksheet. The purpose of this worksheet is to allow users to see in detail how the calculations populate the approximated budget that appears on the “Instructions and Inputs” tab of the tool. The breakdown of costs is guided by the inputs the user manipulates on the “Instructions and Input” tab and the “Verify Sample & Unit Costs” tab.

This worksheet is specifically divided according to the phases of common tasks or activities of EGRA planning and implementation. The sections include:

1. General Project Planning
2. EGRA Instrument Adaptation Workshop
3. Recruitment of Data Collectors and Supervisors³
4. Data Collector Training
5. Pilot Data Collection
6. Data Collection/Data Capture
7. Results Dissemination Workshop

³ The recruitment section of the ODC worksheet covers instances in which private-sector hires are to carry out the data collection, as opposed to government officials whose labor will not have associated costs.

The user can review the breakdown of costs to further plan and account for specific materials and supplies that may be required during a particular phase of the EGRA administration process.

The ODC Cost and Breakdown worksheet is not meant to replace the important step of planning and budgeting for a full EGRA. However, it can be used as a resource for planning and adjusting for budgeting considerations that are commonly associated with EGRAs.