Call-down Contract

Terms of Reference

Consultancy - Learning Achievement in Rwandan Schools - LARS 3 Phase II

   1.   **Background:**

Rwanda's Education Sector Strategic Plan lists the improvement of quality education as one of the main priority areas for the education sector, including the development of learning achievement assessments at primary school level. The Education Sector Strategic Plan (ESSP) also states that the basic education system should provide students with foundational skills in literacy and numeracy, as well as transferable skills such as problem solving, communication and ICT. With these goals in mind, Rwanda developed its first national learning assessment in 2011 - Learning Achievements in Rwandan Schools (LARS). LARS evaluates learning outcomes based on the criteria and expectations set by the national curriculum. It is designed to assess the performance of the whole education system, rather than the performance of individual children, whom are assessed by national leaving examinations at P6, S3 and S6 levels. LARS aims to improve education quality by:

- Providing policymakers with systematic information about the status of students' learning outcomes and the extent to which students attain curricular standards and proficiencies in key subjects
- Identifying areas in the system in need of policy attention
- Monitoring learning outcomes over time to reflect progress and/or lack thereof on key curricular priorities

In 2011, Rwanda Education Board (REB) working with the support of UNICEF and UNESCO developed a learning assessment system (Learning Achievements in Rwandan Schools or LARS) aimed at monitoring learning outcomes in primary education on a regular basis. The insights provided by LARS on numeracy and literacy achievements are instrumental in ensuring that the Government of Rwanda has the information needed to improve and monitor the quality of primary education in Rwanda.

The first LARS, conducted in 2011, assessed the literacy and numeracy outcomes of P3 students. The second LARS, conducted in 2014, assessed the literacy and numeracy outcomes of P2 and P5 students.

LARS 3 was and will be carried out in two phases. Phase I was carried out in the third term of 2016 and assessed the literacy and mathematics competencies of a nationally representative sample of P2, P3 students.

LARS 3, Phase II data collection and analysis will be undertaken in 2017 and assess P6 and S3 students.

   2.   **Context:**

In line with, but building on, the first two rounds of LARS, the **overall objectives** of LARS 3 Phase II are:
- To measure the level of students' learning achievement in language and mathematics competencies in P6 and S3;
- To take an in-depth look at literacy and numeracy learning sub-components contributing to overall literacy and mathematics competencies;
- To develop new and improved testing procedures that reflect the move from knowledge acquisition to competency based curriculum;
- To identify factors associated with pupil performance;
- To provide policy makers with insights on how to improve the quality of education by:

— Identifying areas of high student achievement and progress where policies have shown success;

— Identifying areas of students' underperformance that require more policy attention;

- To build the capacity of REB to develop and administer sample-based learning assessments on a regular basis.

The analysis from LARS 3 Phase II will contribute to:

1) Monitoring of the impact of the new competence-based (CB) curriculum on student learning outcomes. The CB curriculum was launched in January 2016 by the Ministry of Education and REB. It aims to improve learning outcomes by:

- Making learning in Rwanda more centered around mastering of key competencies;
- Making learning more child centered;
- Ensuring that there is greater harmony between curriculum, assessment, teaching and learning processes, quality assurance processes and teaching learning materials; and
- Equipping students with the knowledge, skills and attitudes needed for a knowledge-based economy that can propel Rwanda to compete on the global market.

LARS 3 Phase II instruments will be aligned with the content of the new curriculum and will be used to establish a baseline for measuring the impact of the CB curriculum on student learning outcomes, through the testing of children in P6 and S3. The instruments will be designed to be suitable to generate comparable data over time.

2) LARS will be a central tool for tracking progress of the sector toward achieving Sustainable Development Goal 4:

Ensure inclusive and quality education for all and promote lifelong learning

Particularly Indicator 4.1.1: *Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex.*

3) LARS is a key component of the Global Partnership for Education (GPE) programme, which provides significant support for the implementation of the ESSP. In 2015, the Government of Rwanda committed to conducting LARS 3 to meet the GPE variable tranche indicator on assessing learning outcomes. LARS 3 Phase I (P2, P3) data was already collected and data analysis is under way.

3. LARS 3, Phase II:

In line with, but building on, the first two rounds of LARS, and LARS 3, Phase I, the **grade-specific objectives** of LARS 3, Phase II are:

Grade to be assessed	Objectives of LARS 3, Phase II
P6	- To assess literacy and numeracy proficiency levels for children completing primary school; - Setting a baseline for further learning (S1 and beyond); - To set a baseline for the SDGs;
S3	- To assess literacy and numeracy proficiency levels for children completing ordinary level (S1, S2 and S3) - Setting a baseline for further learning (S4, S5, S6 and TVET); - To set a baseline for the SDGs;

LARS 3, Phase II will involve three key stages, as follows:

1) ***Stage 1: Identifying the sample framework, design, development and validation of the tests and research instruments***, which are tailored to numeracy and literacy expectations for children in P6 and S3 in the Rwandan CB curriculum. As LARS 3 is nationally representative, the sampling framework will be drawn in consultation with the LARS core team and NISR. The development of test items, and background questionnaires, will be led by REB through consultative workshops to be facilitated in close collaboration with a consulting firm. All instruments will follow international best practice in test design, including using item response theory and benchmarking questions for future tests and comparability. Test items for all grades should test language and mathematics skills as laid out in the competence-based curriculum.

2) ***Stage 2: Data collection and cleaning***. Data collection for LARS, will be implemented in close partnership between the contracted service provider and the REB LARS team. The service provider will: (i) administer the numeracy and literacy tests for students in P6 and S3; (ii) administer school-level surveys with teachers, head teachers and some parents. Data entry, data cleaning and merging of data sets will be led by contracted service provider who fill compile a clean, fully matched data set sufficient for future analysis. All data will be made available in excel and stata format. <u>It is expected that a sample of approximately 250 schools nation-wide will be tested and data collection will take one day per school.</u> However numbers might change subject to authorization & in consultation with the National Institute of Statistics for Rwanda (NISR).

3) ***Stage 3: Analysis and drafting of report.*** The contracted service provider will lead on preparation of the main technical report. The service provider will work closely with REB's LARS core team and a LARS Technical Working Group (TWG), including representatives from the education sector, at key stages of the process, including validation of test items, proposed sampling (NISR) and data analysis techniques. The service provider will be required to verify and disseminate the findings through a series of workshops and dissemination events.

4. **Purpose of the Service Provider**

The purpose of the proposed service provider is to design, conduct and report on Phase II of LARS 3. The service provider will be responsible for ensuring the quality and integrity of the whole process from design to analysis as well as providing reliable findings that can be used to improve the educational system in Rwanda.

5. **Scope: Proposed activities for the LARS 3 (Phase II):**

Stage 1

Review of existing research on learning outcomes. This will involve a desk review of data sets and reports from LARS I and II, as well as Phase I of LARS 3. However, it will also entail discussions with REB, DFID, UNICEF and USAID about the successes and lessons learned from previous rounds of LARS and the expectations from the second phase of LARS 3.

Development and piloting of research methodology and data collection tools. The service provider, in close partnership with REB, will lead the process to develop a nationally representative research methodology, data collection protocol and instruments. Instruments will include grade-appropriate student learning assessments, which will be closely mapped to the competencies required in the new national curriculum, and child, parent, teacher and head teacher questionnaires. The purpose of the questionnaires is to identify key factors impacting on children's performance. The sampling framework will be developed by the service provider in consultation with REB and NISR. More details, to facilitate costing of bids, on the likely sample needed and time required per school provided in annex 1, which estimates 20 pupils to be tested per grade across 256 schools, due to a high (0.6) intra-class correlation of learning outcomes in Rwandan schools. The service provider will be required to re-estimate the sample required based on data from Phase I and LARS 2, following the

SACMEQ guidance for developing sampling frameworks for learning outcomes in East African schools.

Stage 2

Data collection. The service provider will lead the data collection process in close partnership with the REB team. Data will be collected in the beginning of the third term of the school year, and should be completed before schools close in 2017 (no later than October 2017).

Stage 3

Data entry, cleaning and analysis. The service provider will enter, clean and analyze the data, based on the key questions and expectations of REB. The analysis should:

- Calculate expected learning thresholds (i.e. below expectations, meets expectations, above expectations)
- Present overall learning achievement results, disaggregated by district, gender, wealth and other key characteristics of learners and school to be identified by REB
- Study which type of questions children are able to answer and which type of questions they are not
- Study how learning achievements relate to various school and household level factors in a structured way

A preliminary data analysis will be presented to REB and key partners, including summary statistics, and sensitivity analysis on the learning thresholds.

Draft and final reports and validation. The service provider will have to work with the LARS working group to validate findings. The service provider will first present the preliminary draft and findings to the head of the Department of Examination and Accreditation and later to senior management at REB and the Curriculum and Assessment Working Group.

Once the draft and findings have been presented and validated by REB, the service provider will present the findings of the analysis in a validation workshop with government officials, stakeholders and development partners in the education sector in Rwanda. The organization of the validation workshop will be a joint-responsibility between REB and the service provider. REB will make invitations, organize venue and make necessary logistical arrangements and cover staff costs. The service provider will provide the agenda and overall technical coordination of the workshop.

After the workshop, the service provider will revise the draft and present to MINEDUC Senior Management. After that, they will further review the draft and submit to REB.

6. **Outputs:**

The set of specific deliverables, timelines and are presented in the following table:

Output	Due date
Inception Report, detailing sampling, proposed methodology	Mid July 2017
Research test items and research instruments developed, tested and agreed with REB	Mid-August 2017
Data collected, compiled and cleaned	15 October 2017
First set of preliminary results, including summary statistics, IRT analysis and sensitivity analysis	1 December 2017
First draft report to LARS working group and Validation workshop	10 December 2017
Submission of final draft report	20 December 2017

These will be underpinned by the following set of activities:

Dates	Activities
May 2017	Mobilise team/secure Ethics & NISR approval for sampling framework
June - July 2017	Develop test items/tools & field test
July 2017	Train data collectors/invigilators etc.
August 2017	**Administer pupils' tests; teachers' questionnaires; head teachers' questionnaires;**
October-November 2017	Data analysis and drafting

7. **Reporting and coordination**

The service provider will work in close partnership with REB. Meetings with REB, DFID and UNICEF (Education Sector Co-Chairs) will be planned for regular intervals to discuss progress on the listed deliverables and to address any questions that may arise.

8. **Evaluation Criteria**

   a) Proposed approach, methodology and work plan. Proposals should include a clear and specific road map of activities & timing – 30 marks
   b) Adequate staffs with appropriate experience, a clear division of labour and skills mix to complete this work satisfactorily - 15 marks.
   c) Experience of statistical analysis/econometric modeling; administering learning assessments, analysis and report writing learning test design, data collection, analysis and report writing – 20 marks
   d) Demonstrated experience demonstrated expertise in sector wide approaches and working with development projects in Rwanda or in the East African region – 15 marks

9. **Transparency**

DFID has transformed its approach to transparency, reshaping our own working practices and pressuring others across the world to do the same. DFID requires Suppliers receiving and managing funds, to release open data on how this money is spent, in a common, standard, re-usable format and to require this level of financial information from immediate sub-contractors, sub-agencies and partners. It is a contractual requirement for all Suppliers to comply with this, and to ensure they have the appropriate tools to enable routine financial reporting, publishing of accurate data and providing evidence of this DFID – further IATI information is available from http://www.aidtransparency.net

Annex 1
Information on Testing/Sampling
The study should be powered to give allow for nationally representative descriptive statistics, which will need to be validated by NISR. The service provider will need to propose a suitable sampling procedure to ensure the sample is nationally representative, covers all school types and districts, and can be disaggregated by gender. Indicative calculations are provided below but should be refined by the supplier in line with the proposed sampling design:

Estimating with 95% confidence with a 5% margin for error requires an effective sample size of 377 students per grade. Assuming a high rho (that is, high intra-class correlation) of 0.6, this requires that the students a drawn from more schools, with less children within each school. To achieve a minimum effective sample size of 400, Ross (http://www.sacmeq.org/sites/default/files/sacmeq/training-modules/sacmeq-training-module-3.pdf) suggests 256 schools and 10 pupils (5 boys and 5 girls) in each school, per grade level, will yield the equivalent accuracy to a random sample of 400. This holds for each grade required. Increasing the number of children per school does not impact too much on the number of schools required at this level, so this should be taken as a rough minimum. Note, significant changes in rho yield large changes in the effective sample size, and should be calculated using the LARS 2 data.

For continuity with LARS 2, students should be given a written test of numeracy and literacy English in grades P6 and S3. These tests should draw on the methodology employed by LARS 2 where appropriate. As this is a written test, the sample for this can be larger. REB have suggested testing 140 children per school across all grades (70 boys and 70 girls), yielding a total of 36,000 children.

It is envisioned that written tests will be administered in the morning at the school-level; and individual testing will occur in the afternoon for a randomly selected sub-sample of students in the early grades to test sub-domains of literacy ability. It is estimated that 10 children per grade (5 boys and 5 girls) will be needed for this sub-sample, across the 256 schools.

It is estimated that five enumerators in each school will be required; this allows for one enumerator per class for the written exams in   P6 and S3, plus one to oversee the process and collect school and teacher level data and arrange for parental questionnaires to be compiled. REB officials will work with the enumerators to ensure that parents of the sampled children are in attendance on the day of the tests.

If children are allowed 30 minutes to complete the written test in literacy and numeracy, and 30 minutes to fill in their background questionnaire, 120 minutes is sufficient to deploy, explain, test and collect, per grade level. To that end, all written tests and background surveys could be administered in the morning and individual testing administered in the afternoon, per school.

Therefore, it is possible for a team of five enumerators to cover one school per day. Given a two week testing period, each team can cover 10 schools. This requires 25 teams of five, or 125 enumerators.