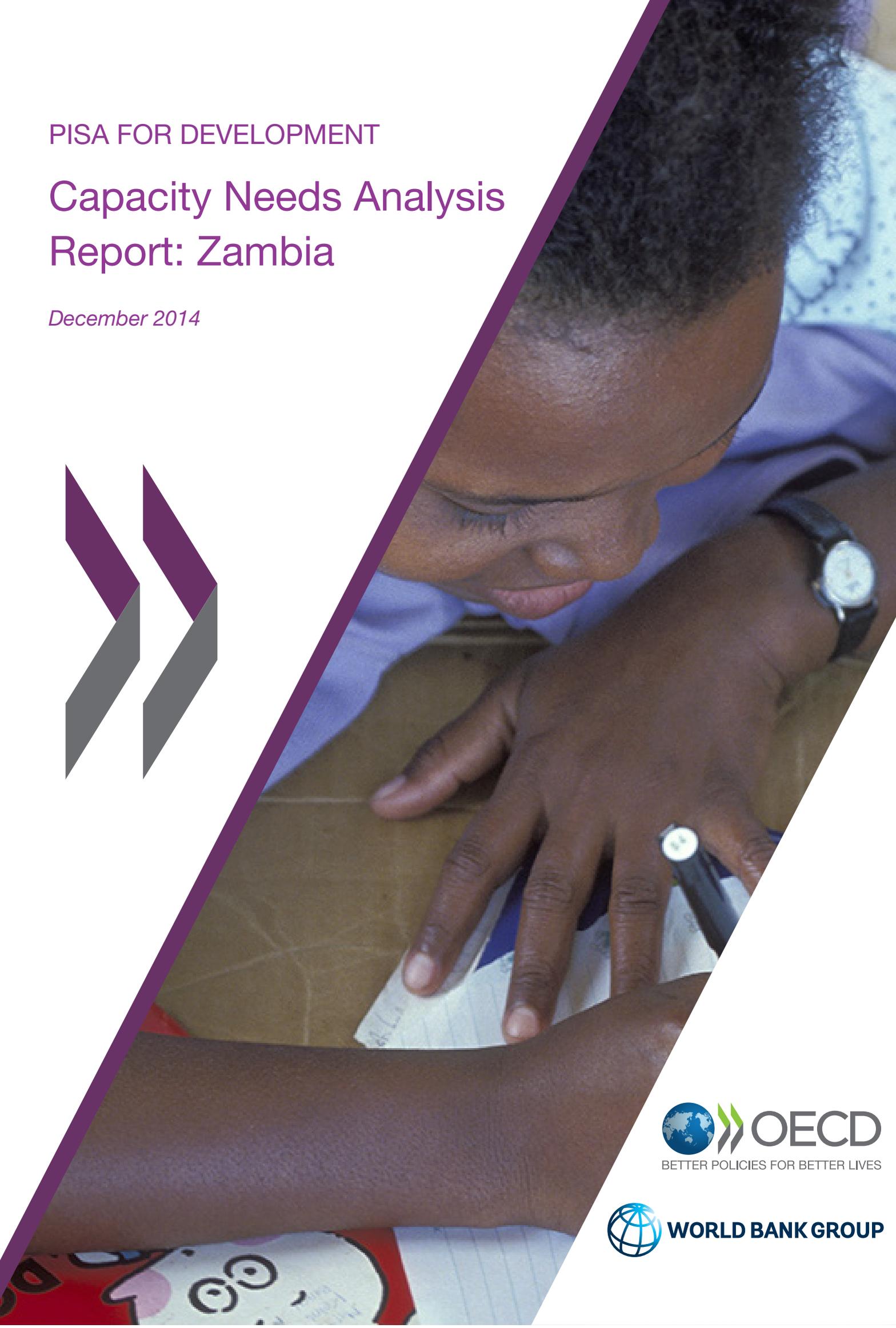


PISA FOR DEVELOPMENT

# Capacity Needs Analysis Report: Zambia

*December 2014*





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This report has been prepared by Fernando Cartwright on behalf of the OECD and the Ministry of Education, Science, Vocational Training and Early Education of Zambia as part of the PISA for Development project. PISA for Development is an initiative of the OECD and development partners that aims to identify how PISA can best support evidence-based policy making in emerging and developing economies – and contribute to the UN-led definition of global learning goals for the post-2015 agenda. In addition the project will help to build country capacity in assessment, analysis and use of results for monitoring and improvement among participating countries.

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## INTRODUCTION AND BACKGROUND

PISA for Development is an initiative of the OECD and development partners that aims to identify how PISA can best support evidence-based policy making in emerging and developing economies – and contribute to the UN-led definition of global learning goals for the post-2015 agenda. In addition the project will help to build country capacity in assessment, analysis and use of results for monitoring and improvement among participating countries.

The initial phase of the project in each participating country is the completion of a Capacity Needs Analysis (CNA). The benchmark for the CNA is the necessary capacity required in the context of the PISA for Development project, which is defined as:

- The ability of the individuals and institutions responsible for the project in each country to perform the necessary functions (as set out in the roles and responsibilities for NC and NPM), solve the likely problems that will arise during implementation and set and achieve project objectives in a sustainable manner.

Countries may desire future capacities for student assessment that go beyond this minimum requirement. Identification of additional needs should reflect the participating countries' aspiration, while respecting the feasibility of realising the additional needs within the context of PISA for Development's three year implementation cycle and required activities.

This document describes the Capacity Needs Analysis (CNA) framework for PISA for Development as well as the use of this framework in the Zambian context. The framework itself is derived from project requirements of the main OECD PISA implementation, which are outlined in the PISA National Project Manager (NPM) Manual (OECD, 2012a) and the NPM Roles and Responsibilities (OECD, 2012b), and the stated programme outputs of PISA for Development (OECD, 2013). The framework is structured according to three dimensions: 1) Enabling context, 2) Organisation, and 3) Individual. The framework is designed to assess the capacity of participating countries to achieve the five programme outputs of PISA for Development, which are:

1. enhanced contextual questionnaires and data-collection instruments;
2. enhanced descriptive power of cognitive assessments in reading, mathematics and science, at appropriate skill levels within the PISA cognitive framework;
3. an approach, including a methodology and analytical framework, for including out-of-school 15-year-olds in the assessments;
4. increased country capacity in assessment, analysis and use of results for monitoring and improvement; and
5. engagement with OECD, development partners and, prospectively, with other developing countries in order to identify peer-to-peer learning opportunities regarding participation in PISA and its potential contribution to the UN-led discussions on the post-2015 framework.

The CNA is designed to generate an understanding of capacity assets and needs, which, in turn, will lead to the formulation of a capacity-building programme (CBP). The framework utilises elements of the SABER-Student Assessment questionnaires developed by the World Bank (Clarke, 2012) as well as the PISA technical standards as the benchmarks for assessing Zambia's assessment system and capacity for managing National and International Large-Scale Assessments. The standardised data obtained from applying the framework is incorporated into this CNA and will also be used to assist in identifying indicators, baselines, and targets for improvement in the context of the Capacity Building programme.

The tool used to enter data into the framework is online at: <http://polymetrika.ca/PISAforDev>.

The needs assessment was completed in Zambia during the first six months of 2014 through consultations led by the Examinations Council of Zambia (ECZ), which is also the National Centre (NC) responsible for implementing PISA for Development in Zambia. The process involved a variety of stakeholders, primarily drawn from the K-12 sector in Education but also including Development Partners, Higher Education, and the Central Statistics Office (CSO).

In general, the capacity needs assessment reveals that Zambia is well-positioned to begin preparation for implementation of PISA for Development. The country already has a strong, well-established and well-managed assessment programme and has participated in other international assessments. The ECZ staff have experience with both high-stakes individual examinations as well as survey-based assessments conducted at different grade levels. While there is a substantial amount of work required yet to develop local skills and expertise with methodology specific to PISA, difficulties in these areas are likely similar to those of many countries who are already participating in PISA. The main areas for development relate to the expanded scope of programme outputs of PISA for Development rather than PISA itself, specifically sampling out of school 15-year-olds and analysis, dissemination and use of survey data, particularly for policy advice and recommendations.

The structure of this report is as follows: it begins with a description of the needs assessment methodology, Section 2, together with a presentation of the needs assessment framework. Section 3 summarises the needs assessment with respect to the five PISA for Development programme outputs, the PISA technical standards and the SABER benchmarks. Section 4 describes the capacity building priorities that arise from analysis of the main assessment dimensions. The detailed capacity needs analysis is presented at Annex A and the Terms of Reference for the capacity needs analysis are included at Annex B.

### **Methodology**

The development and application of the CNA framework to Zambia followed three distinct phases. The first phase involved the analysis of primary documents in order to develop an initial set of assessment criteria and preliminary data for the assessment framework together with a map of key stakeholders for interviews. The second phase involved the piloting of the initial assessment framework in the Zambian context and the collection of data for the assessment, mainly through interviews and documentary analysis. The final phase consisted of refinement and extension of the analysis framework and drafting of the report with a view to facilitating the development of capacity building plans. At each stage the findings of the analysis were shared with the key stakeholders to ensure a shared understanding of the approach and the results of the needs analysis. Findings were adjusted in the light of feedback and actions taken by the National Centre and the Ministry of Education in response to the initial analysis. The following subsections discuss each of these phases in greater detail.

### *Structure of the Capacity Needs Analysis Framework*

The structure of the CNA framework is presented in this section. The framework consists (in the current working version) of 112 capacity elements that are required for successful implementation and stakeholder use of the PISA for Development products. Each element is defined by an overall description and descriptions of up to four levels of development (as applicable to each element), corresponding to the normative definitions described in section 2.2.

The organising structure of the framework is hierarchical, with each PISA for Development capacity element nested within the three main dimensions:

- the enabling environment, encompassing the legislative context and culture that facilitates the implementation, and the stakeholders who make use of the results;
- organisation, encompassing the National Centre and any sub-national institutions that are directly involved in the implementation of the project; and
- individual, encompassing the staff of the National Centre and related organisations, in particular the National Project Manager(s) and his/her team.

Within each dimension, the elements are further organised according to the PISA for Development project requirement for which they are first needed. The PISA for Development requirements are an extension of the main PISA project milestones; they roughly follow a sequence beginning with establishing the National Centre and ending with dissemination of results to stakeholders to support decision making:

- Designation of NPM and establishment of National Centre.
- Compiling and confirming information on schools and students for the definition of the assessment population, stipulation distribution of languages in which assessment materials will need to be available, definition of criteria for stratification of school and student samples.
- Establishing security protocols for the National Centre and for national sub-contractors.
- Co-ordination of appropriate enhancements/adaptations/translations of instruments, manuals and guides, and field trial and verification process with international contractors, including the development of a national component.
- Deciding on the scale of national adaptations and number of assessment languages and co-ordination of appropriate enhancements/adaptations/translations of instruments, manuals and guides, and field trial and verification process with local translators, subject experts and international contractors.
- Organisation of plans for local printing of assessment materials and verification of print and paper quality in all languages that will be covered, while maintaining security.
- Communication and co-ordination with schools that will participate in the assessment.
- Communication and co-ordination with international contractors for the selection of the student samples in each school.

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- Recruitment and training of test administrators that do not have any direct relationship to the students that will be assessed and that are experienced and competent enough to carry out the testing sessions following the scripts, guidelines and procedures established.
- Planning of the quality assurance process so that Quality Monitors visit a sample of schools during testing sessions to observe and document quality of sessions.
- Planning of staffing and resources (technical and material) needed for coding of test booklets and contextual questionnaires and data management.
- Establishing a training plan with key staff of the NC to attend training sessions.
- Preparing and distributing testing materials to schools in a secure fashion, ensuring materials arrive safely and without suffering damage or alterations.
- Monitoring of school and student response rates, in co-ordination with international and national contractors, as appropriate.
- A sample of the student testing booklets that were coded will be submitted to the international contractor for an International Coder Review (ICR).
- The NPM, in consultation with educational authorities, the international contractors, the OECD Secretariat and relevant development partners, reviews the country's data base and the draft analysis plans for the national report.
- The NPM provides input and guidance with regards to the policy priorities that should help determine the content and analysis presented in the country report.
- NPM develops a national dissemination plan of their country's participation in PISA for Development and the relevant results from the pilot.
- Production of reporting documents and media.
- Dissemination of results to general audiences.
- Dissemination of results to key stakeholders.

This structure facilitates the prioritisation of different capacity elements throughout the programme implementation. Each capacity element is also indexed by the PISA for Development programme output for which it is most required.

In case further information is required, each element also refers to one or more primary documents (listed in section 2.1) to justify its inclusion in the framework.

### *Using the framework*

The purpose of the CNA framework is to facilitate the development of in-country capacity for implementation of PISA for Development. The framework provides a step-by-step approach to: 1) evaluating of the current capacity for implementing PISA for Development, 2) setting development goals related to PISA for Development activities, and 3) planning for development activities. However, the framework is not treated as static; rather, it is, where necessary, extended and refined based on information that emerges during the data collection process.

The rubric is reviewed with stakeholders to identify the current status of each element. The information may be collected using any appropriate needs assessment methodology such as questionnaire or interview. The completed rubric also includes a plain-language justification for each assigned rating. Once completed, the ratings and justifications, along with a narrative summary, are reviewed by key stakeholders. During the data collection or review process, if there are any new requirements identified, they may be added to the framework. If a new element is added, it is indexed by the structure defined in section 3.1, and the textual descriptions of the levels follow the normative descriptions described in section 2.2.

Preliminary target capacity levels are identified for each element and basic information for planning capacity building (defined in section 3.4) are completed along with the target ratings. The responsibility for developing specific capacity elements may be assigned to different resources, along with allocation of person-time, money and expected start/end dates. This information is used to develop the capacity building plan and prioritise the different capacity building goals.

### *Primary Document Analysis*

The development and implementation of the CNA framework is built on four primary documents:

- PISA Technical Standards. This document details the quality standards required for successful participation in PISA. For the purposes of the CNA framework, these quality standards are also assumed to apply to the PISA for Development context.
- PISA for Development document. This document outlines the broad goals of PISA for development, as described in Section 1.
- PISA National Project Manager (NPM) Manual. This document outlines the sequence of activities, as well as describes the recommended resources required for PISA implementation.
- SABER – Student Assessment (SABER-SA). The SABER framework describes the broader context of student assessment in a country. In particular, the CNA framework development focused on large scale assessments, particularly national and international assessments. These documents augmented the PISA-based documents by expanding on the requirements for participation to examine the broader enabling context. This dimension includes issues such as programme sustainability and the social, cultural and economic climates that will be necessary for meaningful use of the PISA results. The SABER framework uses evaluation rubrics that classify different elements of a county’s assessment system as either *Latent*, *Emerging*, *Established* or *Advanced*. The different levels characterise the degree to which each element can support an effective assessment system, with “Established” representing the minimum level required to sustain an assessment system.

20. The first stage of analysis examined each of these documents from the dimensions of the enabling context, organisation and individual to identify the requisite elements of each dimension that are necessary to produce the PISA for Development programme outputs. Each element in the framework describes a salient characteristic in the country's capacity that may be addressed with a targeted capacity building response; although the development of a single element sometimes required several capacity building activities, the activities are similar enough that they draw from similar human or physical resources and affect the same group of country-level stakeholders.

21. For each of these preliminary programme elements, development levels were defined by following the rubric approach established by the SABER instruments. Using a priori assumptions about the key features likely to be found at the four SABER levels, plain language descriptions were defined for each level (as applicable) for each programme element. Completing the rubric involves interviewing stakeholders to collect information about each rubric element, then, for each element, identifying the appropriate development level and providing a justification for the rating.

### *Normative definitions*

To facilitate the creation of textual descriptions for the different levels of each element of the framework, normative definitions were developed for the three dimensions. As new elements were identified and included in the framework, these normative descriptions guided the textual definitions for each level of the new element. For some elements, one or more of these levels did not apply; in these cases, the level remained undefined, as in the original SABER rubrics.

**Table 1 Enabling Environment ratings: normative definitions used for each element**

Latent	There is no environmental support or there are environmental obstacles that deter programme implementation
Emerging	There are political, economic or social structures in place that may be adapted to facilitate implementation
Established	Political, social or economic structures exist that can support implementation
Advanced	Political, social or economic structures are currently providing support to similar activities

**Table 2. Organisational ratings: normative definitions used for each element**

Latent	There is no capacity to assume this role
Emerging	Some capacity exists but it is not institutionalised in a coherent administrative structure
Established	Some capacity exists within a coherent administrative structure, but may lack availability or technical skills to assume responsibilities
Advanced	Capacity is institutionalised and has sufficient resources to assume the responsibilities without developing additional capacity

**Table 3. Individual ratings: normative definitions used for each element**

Latent	Individuals do not have the skills and/or are resistant to developing requisite skills
Emerging	Individuals have foundational knowledge or personal attributes that will enable them to acquire requisite skills or attributes
Established	Individuals have sufficient knowledge, interest and aptitude to allow development of requisite skills or attributes with brief workplace training and/or independent training and practice
Advanced	Individuals already have the required skills or attributes

### *Pilot Analysis*

The preliminary CNA framework was employed in the country context through in-depth interviews with a variety of stakeholders related to the education system and the broader education sector. Particular attention was paid to actors related to the production, use and interpretation of educational assessments. Interview subjects were selected using a snowball methodology, where a small sample of known interviewees participates in the recruitment of additional participants from among their acquaintances. This methodology was required to respect local protocols for arranging and conducting meetings and reach experts within the education community. The entry point to the process was the PISA National Project Manager (and/or implementing agency lead staff) as the point of entry. The scope then expanded to include educators, other assessment specialists, other government departments (i.e., higher education, statistics, trade/vocational), development partners, and leading voices in the national education discourse. Each participant was selected based on his or her knowledge or expertise in one or more of the three dimensions of the analysis. Many interviewees had extensive experience throughout the education sector in Zambia and were able to provide information relevant to elements of the CNA framework outside of their current professional roles.

Each interview subject was asked detailed questions regarding each of the elements in the preliminary CNA framework. The format for the interviews generally followed a basic structure:

- subjects were provided details about PISA for Development and the purpose of the capacity needs assessment and the role of the interview in the development of the capacity needs assessment framework;
- for each element in the preliminary framework that was relevant to their interests and experience, subjects were asked to describe the current status of the element as well as any features or dependencies related to the element, such as who are the main actors responsible for each element and historical challenges accomplishing similar activities (during this segment, subjects were given the opportunity to review and comment on summaries of previously collected information);
- subjects were asked to volunteer any additional information related to any of the three CNA dimensions; and
- subjects were asked to identify and, if necessary, introduce the interviewer to additional subjects with information or experience relevant to the topics raised in the interview.

### *Stakeholder consultations*

Completion of the CNA was facilitated by PISA for Development National Project Managers Mr. Shadreck Nkoya and Ms. Teza Nakazwe-Musakanya the Examinations Council of Zambia (ECZ). The

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ECZ is the PISA for Development National Centre, and Ms. Nakazwe is the National Project Manager. Mr. Nkoya and Ms. Nakazwe-Musakanya scheduled meetings with key stakeholders and participants involved with institutional and student assessment areas related to the implementation of the PISA for Development project. The consultation included interviews with (and information previously provided by) the following stakeholders:

**Table 4. Key informants interviewed for completion of SABER questionnaires and the Capacity Needs Assessment Framework**

Name of Individual	Institution	Directorate	Job title
Mr. Michael M. Chilala	Examinations Council of Zambia (National Centre)	Research & Test Development Department	Director
Ms. Teza Nakazwe-Musakanya	Examinations Council of Zambia (National Centre)	Research & Test Development Department	Assistant Director, PISA for Development National Project Manager
Mr. Shadreck Nkoya	Examinations Council of Zambia (National Centre)	Research & Test Development Department	Acting Principal Research Officer – Co-ordinator National Assessment System
Mrs. M.B. Mbuta	Ministry of Education, Science, Vocational Training & Early Education	Directorate of Planning & Information	Chief Education Officer - Planning
Mrs. Banji Milumbe Shakubanza	Examinations Council of Zambia (National Centre)	Information Technology Department	Systems Manager
Mr. A. Kafwifwi	Ministry of Education, Science, Vocational Training & Early Education	Directorate of Standards & Curriculum	Senior Education Standards Officer - Exams
Mrs. R. Mweetwa	Ministry of Education, Science, Vocational Training & Early Education	Directorate of Distance Education	Principle Education Officer
Mrs. M.C. Nyirenda	Ministry of Education, Science, Vocational Training & Early Education	Curriculum Development Center	Principal – Research and Evaluation
Mr. K. Likando	Ministry of Education, Science, Vocational Training & Early Education	Directorate of Teacher Education	Senior Education Officer
Mr. B. Lisuba	Examinations Council of Zambia (National Centre)	Research & Test Development Department	Senior Examinations Specialist - Biology
Mrs. Abigail M. Tuchili	Ministry of Education, Science, Vocational Training & Early Education	Curriculum Development Center	Senior Curriculum Specialist – Expressive Arts/Life Skills Education Co-ordinator
Mr. F. Lubinda	Ministry of Education, Science, Vocational Training & Early Education	Directorate of Distance Education	Controller – Education Broadcasting Services
Mrs. Violet Banda	Examinations Council of Zambia	Examination Administration Department	Assistant Director
Mr. Chomba	Ministry of Education, Science, Vocational Training & Early Education	Directorate of Standards & Curriculum	Principal Education Standards Officer
Mr. Gilbert Zimba	Examinations Council of Zambia	Information Technology Department	
Mr. Joe Kanyika	Examinations Council of Zambia		Assistant Director RTD (former)
Mr. Shakazo Mzyece	Examinations Council of Zambia (National Centre)		Senior Research Officer

Name of Individual	Institution	Directorate	Job title
Mr. Etambuyu Lukonga	Central Statistics Office		Head Dissemination
Mr. Palver Sikanjiti	Central Statistics Office	Population and demography branch	Officer
Mr. Christopher K, Yalukanda	Zambia National Union of Teachers	Research & Information	Director
Mr. Munamuzunga Sikaulu	United Nations Children's fund	Quality Education	Education Specialist
Ms. Tanya Zebroff	Department for International Development		Education Adviser
Prof. Jasscel N. Zulu	University of Zambia	Department of Biological Sciences	
Prof. Sichalwe M. Kasanda	University of Zambia		
Dr. Cornelius Chipoma	USAID Zambia		Senior Education Advisor (former)

Information from these stakeholders was also supplemented by analysis of the following documents and material:

- Zambia National Assessment Questionnaires.
- Zambia National Assessment Tests in English Language and Mathematics.
- Education Sector National Implementation Plan (Ministry of Education Government of the Republic of Zambia, 2007).
- National Assessment in Zambia (Cartwright, 2013).
- Examination Council of Zambia Item Writer's Package (Examination Council of Zambia, 2013).

Information from high level stakeholders was collected during a meeting of the National Assessment Steering Committee, held at the Ministry of Education (Directorate of Planning) on February 5, 2014. The committee is a senior-level body including members from all major stakeholders in the education sector, including Development Partners. The PISA for Development project was included as an item on the meeting agenda. This meeting provided the opportunity to inform all senior-level stakeholders about the project and respond to initial views and questions.

### ***Refinement and extension***

During the third phase of the CNA framework development and implementation the data collected during the second phase was analysed in order to identify elements that had been missing from the preliminary framework and to refine definitions within the rubrics. By necessity, there was some overlap between the second and third phases as interview subjects were revisited for additional clarifications. If the review identified clearly distinct prerequisites for existing elements, additional elements were added to the framework.

With the additional details provided by the interview subjects for each element, the CNA framework was extended to accommodate data collection specifically related to the development of a capacity building plan. The extended information includes the following data fields for each element:

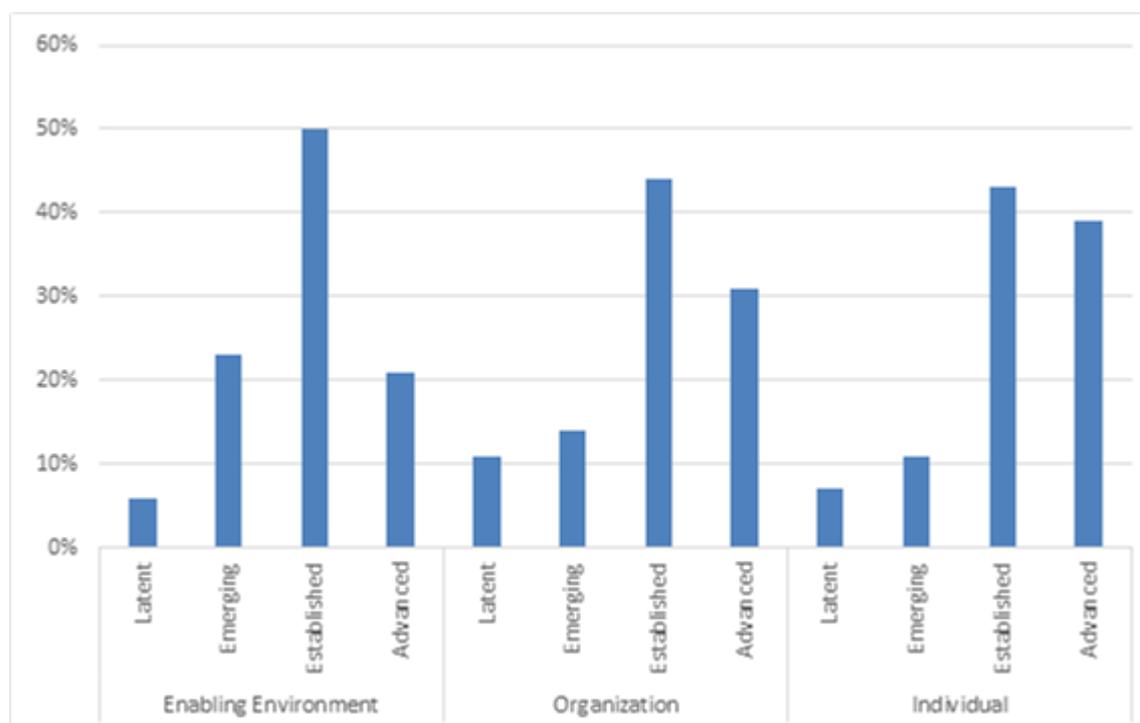
- the target level that Zambia wishes to build its current capacity to meet;
- explanation about why the target level is advantageous within the Zambian system's broader goals;
- the programme resource or actor primarily responsible for fostering the capacity building of the element;
- the individual person(s) responsible for championing the capacity building (with contact information);
- any prerequisites for the commencement of the specific capacity building activities with respect to the element;
- the estimated budget for the capacity building activities;
- the estimated person-days required for the capacity building activities;
- the expected start date for the capacity building activities; and
- the expected end date for the capacity building activities.

### **Summary of the Capacity Needs Analysis**

This section summarises the current capacity as it relates to general capacity to implement the PISA for Development project requirements and realise the five PISA for Development programme outputs and as benchmarked against the PISA standards and the SABER rubrics. The completed needs assessment rubric for Zambia, which also illustrates the structure of the CNA framework, is included in Annex A. The tool for exploring and modifying the framework, and facilitating the data entry and summarisation process, can be found at <http://polymetrika.ca/PisaForDev/>. The material in Annex A is a direct export from this web-based tool.

In general, Zambia's long-running examinations system and national assessment survey provide an infrastructure that can readily support the minimum requirements for implementation of the in-school assessment strand of PISA for Development (Strand A). The ratings for the programme elements indicate a predominantly established infrastructure, with many elements having advanced capacity, illustrated in Figure 1.

Figure 1. Summary of Ratings for CNA Elements, by CNA Dimensions



Source: Annex A

### *Enhanced contextual questionnaires and data-collection instruments*

With the project implementation support that is planned by the OECD, the National Centre, ECZ, has sufficient existing capacity to be able to manage the implementation of Strand B of PISA for Development – contextual questionnaires – in accordance with PISA standards. The ECZ has limited experience with the adaptation and creation of survey instruments for education research. Use of questionnaire data has historically been limited to simple descriptive statistics and demographic comparisons. Capacity for development and use of enhanced questionnaires requires additional statistical and psychometric expertise.

The ECZ has been conducting SACMEQ consistently for every cycle of the survey's administration and has been carrying out national assessments of education for almost 15 years in a continual development and dissemination cycle (where administration cycles were skipped or delayed, the rationale was to allow for continued dissemination of previous administration results). The adaptations have primarily taken the form of translation and vocabulary modifications to render questions more meaningful to respondents, without modifying or introducing any new measurement constructs. The original SACMEQ instruments were provided by SACMEQ with broad input from stakeholders; the ECZ did not contribute to the original content.

The ECZ has limited experience and expertise in the original development of psychological, economic or environmental survey instruments. (The contextual questionnaires used for the NAS are largely based on the original SACMEQ questionnaires.) In March 2013, members of the research staff of ECZ participated in a workshop which focused on the design of national assessments, which included a lecture and development exercise for survey instrumentation. However, these skills were not employed in practice since the training. In order to develop enhanced instruments, the ECZ will require support to

develop the skills to identify potentially important constructs for secondary research as well as to create or adapt instruments for the measurement of these constructs.

While ECZ has limited experience and expertise in the development of psychological, economic or environmental survey instruments, the Steering Committee for the National Assessment Survey (NAS), which is also the presiding body for PISA for Development in Zambia, represents a wide body of stakeholders with just this kind of experience, especially with focused research projects. As a result, the Steering Committee will likely be able to identify the key research priorities, or at least select the most important priorities if a set of options is presented to the body.

Enhancement of the PISA for Development instruments should focus on characteristics of schools and students that are not already monitored by existing data source, namely the annual school survey and the school mapping data. These sources capture a wide variety of school-level information, including demographic composition, infrastructure, staffing, students with special needs and attendance. Although Zambia does not yet have a functioning Education Management Information System (EMIS), data from the country's annual school survey and geographic information about each school is available to be merged with data collected through PISA for Development. The main capacity need in this area is the establishment of a common data infrastructure that will facilitate merging the multiple data sources.

### *Enhanced cognitive assessments*

With the project implementation support that is planned by the OECD, the National Centre, ECZ, has sufficient existing capacity to be able to manage the implementation of Strand A of PISA for Development – cognitive instruments – in accordance with PISA standards. Capacity for assessment is extremely well-developed in Zambia. The country has a long-running, secure examinations and assessment programme managed by the ECZ. The ECZ has experience with both high and low-stakes testing, including international examinations as well as international assessments (SACMEQ). However, the capacity to use the rich information that will be provided by PISA for Development is limited, partly due to lack of technical capacity to make diagnostic use of assessment data as well as relatively non-existent public discourse involving such use.

Content development is limited to traditional curriculum-based assessment tasks. Assessment items represent instantiations of specific tasks defined by curricular learning objectives. Few item developers and test developers have experience with psychology, construct/latent trait measurement, or using broad cognitive frameworks in the development of instruments. There is a relatively rigid adherence to rules-of-thumb in content development that have been adapted from Bloom's Taxonomy. This rigidity is largely the result of repetitive emphasis on the use of the taxonomy in assessment training materials at the ECZ. As a result, there may be some reluctance or difficulty on the part of item writers and test developers to adapt to a different cognitive framework. Assessment and education in Zambia has historically (until the past year) focused on skills and knowledge necessary for academic advancement, rather than social, civic or economic participation.

Recent changes to the curriculum have introduced new focus on life skills. This change in curriculum reflects interests from many stakeholders in the role of fostering levels of skills more appropriate to non-academic trajectories, including vocational training and basic skill instruction for older students. Because of this changing discourse in Zambia, there is likely to be stakeholder acceptance (if not strong support) for measurement of skills defined by the PISA for Development cognitive framework.

However, most stakeholders would not immediately be able to recognise the cognitive framework of the PISA domains as a natural fit to the new curriculum. The new curriculum describes skills as relatively discrete compared to the treatment of specific skills as samples from an overarching cognitive frameworks

in the PISA assessments. Care should be taken to bridge the gap between the different frameworks. Experience with SACMEQ suggests that, unless stakeholders clearly see a link between the intended educational and learning activities in Zambia and the results of large scale assessments, the results from the assessment will gain little traction with any audience.

Notwithstanding these challenges, the item and test development procedures used by the ECZ are well-defined and all development protocols generally follow best-practices. Clear efforts are made to ensure content is relevant and representative, content developers are demographically representative, and several stages of review, as well as pilot-testing and analysis, reduce the presence of poor-quality test items. Evidence from analysis of national assessment data as well as examinations data indicate that the items produced by the process are generally of high quality and free from obvious construction errors.

While the hardware and software infrastructure of the ECZ may limit the experience of item writers, the ECZ has a team of writers at Grades 9 and 12 with some experience of developing the type of short-answer, open-ended response type items that comprise much of the PISA instruments. In contrast to Grades 9 and 12, the assessments at Grade 7 are heavily focused on multiple choice tasks, with some additional long response (essay) questions. Item writing is an area into which the ECZ would like to expand their expertise.

The IT infrastructure also limits the effectiveness of the data management and analysis. Current practices use a combination of different software packages that are distributed across various desktop computers to facilitate the translation of data from student response booklets (referred to as ‘scripts’ in ECZ lexicon) to final data analysis. Due to these IT challenges as well as the security protocols that limit the number of people with access to data, project teams do not use shared directories with well-defined folder structures to maintain data, and specific data are usually found on individuals’ PCs rather than on centralised servers. As a result, there is a high dependency of project implementation on specific non-replaceable individuals.

On a positive note, there is a growing culture and leadership within the research group to ensure replicability of analyses and data processing; routines for data processing and analysis use, to the extent possible; stored scripts and syntax rather than point-and-click or otherwise non-reproducible methods. In addition, many of the staff show aptitude for learning new software and analytical methods. There is currently no expertise within the ECZ with advanced mathematics, statistics, or programming, although different staff have expressed interest in developing these skills and can appreciate the conceptual ideas behind such methods. For example, although complex sampling has been used for many national assessment cycles, corresponding consistent design weights have not been calculated or used due to lack of expertise.

The research staff at the ECZ have had training in the use of modern psychometrics, including classical item and test analysis, 2PL item response models, differential item functioning analysis, factor analysis, as well as general introductions to IRT-based linking, matrix-sampled assessments and polytomous IRT models. They have employed these methods since late 2013 in the context of the development and analysis of assessments. However, due to unfamiliarity of other stakeholders with these methods, they have not yet been employed in the production of reported results of any assessments. This limitation will not likely be a problem for PISA, and there is the desire among research staff that external assessments, such as the national assessment and PISA, should provide useful examples to different stakeholders of how to report assessment results (including modern scaling, reporting and standard setting methods).

***Including out-of-school 15-year-olds***

Current capacity of the National Centre, ECZ, is insufficient to manage the implementation of Strand C of PISA for Development – out of school 15-year-olds – in accordance with proposed PISA for Development standards. The ECZ does not have the technical capacity for designing or conducting a sample outside of schools. Any implementation of this strand will likely require co-operation of the CSO. The ECZ is prepared to take a co-ordinating role, developing instrumentation and training data collectors, with the CSO directly managing the population enumeration and data collection. However, the CSO currently does not have capacity to sample 15-year-olds or conduct extended interviews with cognitive assessments.

Sampling out-of-school 15-year-olds is problematic in Zambia for two reasons. The first is that birth records are inadequate to define regional populations by age. The second is that the census is only updated every ten years, which means that regional age-cohort estimates are synthetic, based on expected birth and mortality rates. These models are maintained by a single person within the CSO who was unavailable during the mission, and no further information was available on the methodology. Regardless of the specific methodology, the population estimates for student age populations consistently underestimate the numbers of students reported by school administrators in the annual school census (ASC). There is no consensus regarding the cause of this discrepancy, but different stakeholders generally favour the notion that the census-based projections are underestimates rather than schools consistently over-reporting their counts. However, experience in other countries suggests that, in the absence of universal student identifiers, it is likely that schools are over-reporting student counts.

Nonetheless, the use of the ASC is likely to be a valuable source of information for sampling purposes, because most children do enter school in elementary (although the age of entry may vary by up to three years depending on region, remoteness and family SES). Because schools report student counts by age, gender and grade, it is possible to mine historical data for both consistency editing and for calculating the number of 15-year-olds in the community served by each school. The latter calculation should first estimate the number of 6-year-olds in the community school nine years ago by comparing data across a three-year period, then comparing this estimate to the number of 14-year-olds in the school during the year prior to intended PISA data collection. These estimates would form the basis of a sample or stratification design that could then guide enumeration of households with 15-year-olds in selected districts. It is likely that, due to the need for household enumeration, generalisation of the out-of-school sample would be limited to country-level estimates. Any implementation of this strategy would require heavy involvement and resources from both the IT department of the Ministry of Education as well as the CSO, as well as possibly outsourced enumeration and data collection staff.

***Identify peer-to-peer learning opportunities regarding PISA participation with other countries and development partners***

The PISA team within the ECZ is eager to participate in any opportunities to learn and share with other countries and development partners. These activities receive strong support from the Ministry, and, in fact, Zambia is hosting the major international meeting of the professional association of African assessment experts in 2014. The Director of the ECZ and the research staff have expressed the desire for the ECZ to represent a centre of excellence in the field of assessment in the region. Developing this expertise will allow them to facilitate collaboration on best practices with other national assessment activities in other countries and co-ordinate international assessments.

## Capacity Development Priorities

### *Enabling environment*

The assessment culture in Zambia is mature. PISA for Development, aimed at 15-year-old students and 15-year-olds that are out-of-school, follows closely after the inaugural implementation of the grade 9 national assessment, a curriculum-based assessment using a survey design methodology similar to the in-school component of PISA for Development. There is unanimous agreement among stakeholders about the importance of participation in PISA for Development. In these respects, Zambia is similar now to the initial state of many countries who have successfully implemented the main PISA survey. Where Zambia has capacity needs, they are related to the broader scope of PISA for Development.

The enabling environment requires capacity building in two key areas:

- definition of a sample frame and data collection strategy for 15-year-old students and out-of-school 15-year-olds, and
- development of evidence-based discourse between stakeholders and with the media about how to report, interpret and use the type of complex or detailed results typically reported by PISA.

The first of these issues will require immediate research and development using technical expertise that does not currently exist in Zambia. Specifically, the relevant standards require that data collection occur within a six week window using a scientifically recognised sampling method. Because the physical locations of out of school 15-year-olds is not recorded in the CSO or any administrative records, existing techniques and expertise used for similar non-institutional data collection (e.g., national census) cannot be directly applied to the development and data collection of a sample. Given that stakeholders can agree on a reasonable definition for the target population that facilitates data collection while still generalising to a meaningful population, technical assistance will be needed to develop a strategy for enumerating the target population, drawing a sample and creating a collection schedule that makes efficient use of a limited pool of trained data collectors.

The second issue is less urgent, but strategies should be developed immediately and throughout the implementation process to engage a wide range of stakeholders on a broader set of issues than are typically discussed based on the expected types of information generated by PISA. Although the ECZ has recently been expanding their LSA reporting capacity across different forms of media and introducing more complex messaging than simple averages, future development will likely require technical assistance from specialists with experience in knowledge transfer in the context of large scale assessment.

In addition, there are two risk factors associated with the multilateral nature of large scale education projects in Zambia: scheduling and funding. First, the ability to meet the demands of the international PISA schedule are vulnerable to communication protocols to the specific bureaucratic and political demands in Zambia (although it is likely these issues affect other low-income countries as well). Communications cycles may take longer than may be required in existing participating PISA countries.

Second, there are ambiguities about funding and integration of PISA for Development with existing programs. Although these issues are, in principle, easy to resolve, the complexity and hierarchy of communication protocols between OECD, Development Partners, the Ministry of Education and the ECZ necessitates longer communication cycles than may be accommodated by the PISA implementation schedule. Although all parties are committed to proceeding with the project, the opportunity to realise the full benefits of participation in the programme may be jeopardised by lack of integration of PISA for

Development with the entire education sector plan. As soon as possible, co-ordinators of the education sector plan will need to be actively engaged in the planning and budgeting process.

### *Organisation*

The organisational capacity of the ECZ and related service providers is also quite strong, drawing on prior experience managing high-security, high-stakes public examinations as well as LSA. The main priorities for capacity development are related to:

- adequate staffing for the roles and responsibilities of the NC, and
- institutional learning and knowledge retention.

Regarding the first issue, the NPM responsibilities will be accommodated by part-time allocations of the Assistant Director (Research) and Senior Research Officer from the National Centre. However, their PISA for Development responsibilities are in addition to their existing responsibilities (public examinations and national assessment), and there is no expected reduction in these existing commitments. Additional support will be dedicated from existing research staff based on operational planning after commencement of the project.

ECZ staff have historically achieved success managing large scale assessment activities concurrent with routine responsibilities to the public examinations. However, this success may not be sustainable due to the cumulative exhaustion of shared human resources. All of the core human resources within the ECZ have existing responsibilities with ongoing programs, including the public examinations and national assessment. Public examination activities are continuous and take precedence over LSA activities; because the public examinations are politically sensitive, specific requests for information or meetings may be unpredictable but require immediate response. The main bottleneck is with the specialised technical staff, who are few in number and tend to be responsible for a wide variety of tasks, including management, data processing, analysis, document preparation and reporting. These resources are not efficiently used, because a large portion of their time is spent on routine clerical tasks (e.g., communication and document preparation). Peer-to-peer meetings are typically sacrificed in favor of preparation for meetings with senior managers or administrators, so there is also inadequate opportunity for staff to collaborate effectively.

There are several possible responses to this issue, including 1) the introduction of dedicated clerical support, and 2) increased automation of routine tasks. The first option would require immediate action in order to define and staff the necessary position(s). The second option is more flexible, but would require specialised technical skills that do not currently exist in the ECZ.

Regarding the second issue, there are no clear and routinely-used mechanisms for transfer of technical skills within the ECZ. This can render the project schedule vulnerable to common issues such as personal illness or absence of key individuals or the conflicting priorities described above. Although ECZ has been effective in sending technical staff to international and in-country training exercises (rather than managers), there are no clear and well-established structures within the organisation to encourage individuals who have participated in training to share the knowledge and skills they have gained with others, outside of the context of the initial training sessions. In-house seminars are organised for this purpose, but these are not systematic and may not be effective. As a result, knowledge and skill silos can develop where specific individuals become indispensable to technical processes. One of the contributing factors to this issue is the lack of time to commit to additional training after the initial training sessions.

Given the limited time available, the best solution will likely be the implementation of strategies that enable team members to interact effectively through asynchronous methods. Examples include shared file storage, with clearly identified protocols for creating file structures and naming files. This solution is

relatively easy to implement, but should be implemented as soon as possible and may require additional training and continuous enforcing of the protocols by managers.

### ***Individual***

There are no severe issues with respect to individual capacity in Zambia. For the most part, individuals responsible for project implementation already meet the minimum required level to begin the PISA cycle. Where capacity is limited, the existing planned activities in the PISA cycle should be sufficient to meet the minimum requirements. However, the ECZ has expressed interest in developing capacity in certain technical areas beyond the minimum requirements; capacity building in these areas will be considered in the planning process.

Although the current level of knowledge of the PISA skill assessment framework is at a level comparable to the initial status of many countries who have participated successfully in previous PISA cycles, item developers in Zambia will need to have more intensive training in this area. Given that there will not be any additional international items in the PISA test, item developers will need a clear understanding of the framework in order to produce a well-developed national testing and research option. Currently, the Zambian curricula (syllabus) with which the item developers are familiar have little resemblance to the theoretical PISA skills framework. Capacity building in this area will require short term implementation of workshops to train item developers to produce the type of rich-context, cognitively complex items that reflect the PISA framework (both the cognitive and research aspects). These workshops should be scheduled to allow sufficient time for item developers to adapt the generic principles to the Zambian context and develop and pilot a sufficient number of items to produce an informative national option.

### **Next Steps**

On the basis of this report, a capacity building programme covering the three years of project implementation will be developed. This capacity building programme will be clearly grounded in the implementation of PISA for Development, taking care to ensure that training and capacity building opportunities are costed and scheduled in a timely and effective way. This programme will be designed to equip the National Centre, the National Project Manager, and other related actors with the capacity they require to implement the PISA for Development project successfully and, in addition, respond to the particular priorities for student assessment that Zambia has identified beyond those necessary for project implementation, such as assessment methods, item development, analysis and use of data to support policy development, and student assessment for curriculum reform.

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## ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS

The following Annex is a direct export of data from the PISA for Development CNA application. The structure of the information is hierarchical, nesting each PISA for Development needs assessment element within: 1) the three CNA dimensions (enabling environment, organisation, individual), 2) PISA for Development project requirements (the sequential operational requirements for implementation of PISA), and 3) the five PISA for Development programme outputs (enhanced questionnaires, enhanced assessments, out of school 15-year-olds, assessment capacity, and peer-to-peer learning). The original references for each CNA element are listed below the element description. The references describe the original source document and the numerical designation of the defining element. In documents where the elements are not enumerated, such as the NPM manual, the reference describes the relevant section heading. The rating for each element on the rubric is justified with reference to specific contextual details in Zambia.

### Summary of Ratings for CNA Dimensions

Dimension	Level	Rating Count	Percent within Dimension
Enabling Environment	Latent	3	6%
	Emerging	11	23%
	Established	24	50%
	Advanced	10	21%
Organisation	Latent	4	11%
	Emerging	5	14%
	Established	16	44%
	Advanced	11	31%
Individual	Latent	2	7%
	Emerging	3	11%
	Established	12	43%
	Advanced	11	39%

### *CNA Dimension 1. Enabling Environment*

#### *Project Requirement 1. Designation of NPM and establishment of National Centre*

Description: Stability of NLSA program

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS 24

References:

SABER-SA-NLSA: EC1

Latent	Emerging	Established	Advanced
No NLSA exercise has taken place.	The NLSA has been operating on an irregular basis.	<b>The NLSA is a stable programme that has been operating regularly.</b>	

Justification:

The NLSA, the National Assessment Survey (NAS), has been implemented regularly (with a single planned interruption) by the ECZ for approximately 15 years. The programme is generally described as Established by the SABER tool. The NLSA programme has budget-line funding with universal stakeholder support.

Description: Having regular funding for NLSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: EC3

Latent	Emerging	Established	Advanced
There is no funding allocated to the NLSA.	There is irregular funding allocated to the NLSA	<b>There is regular funding allocated to the NLSA</b>	

Justification:

The NAS receives core budget funding from the MoE that is augmented (or replaced entirely) from time-to-time with dedicated funding from Development partners. The national budget allocation for the NAS the falls under the Department of Planning's operational budget.

Description: Adequacy of NLSA funding

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: EC3

Latent	Emerging	Established	Advanced
	Funding covers some core NLSA activities: design, administration, analysis or reporting.	Funding covers all core NLSA activities: design, administration, analysis and reporting.	

Justification:

Core project funding from the national budget covers all of the project activities; additional funding from development partners is used to replace core funding or to provide capacity building activities.

Description: Relevance of NC expertise

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA: NLSA

Latent	Emerging	Established	Advanced
There is no staff allocated for running a NLSA.	The NLSA office is inadequately staffed to effectively carry out the assessment.	The NLSA office is adequately staffed to carry out the NLSA effectively, with minimal issues.	The NLSA office is adequately staffed to carry out the NLSA effectively, with no issues.

Justification:

The NAS shares human resources with the public examinations system. Periodically, all staff members may be called upon to manage the NAS activities, although in practice, the project is led by 2-3 lead researchers within the ECZ, who also perform the majority of the data capture, processing and analysis. Occasional delays are caused as project staff become overwhelmed managing operational tasks as well as performing routine clerical duties. In the long term, this issue may reduce the sustainability of the program.

Description: Experience in planning, organising and conducting large-scale surveys

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA: NLSA

Latent	Emerging	Established	Advanced
<b>The country/system does not offer opportunities that prepare individuals for work on NLSA.</b>		The country/system offers some opportunities to prepare individuals for work on the NLSA.	The country/system offers a wide range of opportunities to prepare individuals for work on the NLSA.

Justification:

Training for work on NLSA is typically on-the-job as an extension of related duties that ECZ staff are responsible for through their work with public examinations. There are no opportunities for staff to develop related skills or learn about the programme prior to actually assuming responsibilities within the program.

Description: Experience in planning, organising and conducting international assessments

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA: ILSA

Latent	Emerging	Established	Advanced
The country/system has not participated in an ILSA in the last 10 years.		The country/system has participated in at least one ILSA in the last 10 years.	<b>The country/system has participated in two or more ILSA in the last 10 years.</b>

Justification:

Zambia is a founding member of SACMEQ and has participated in every cycle of SACMEQ. Zambia has not participated in other ILSA, although the ECZ is responsible for administering international public examinations, such as the Cambridge assessments.

Description: Having regular funding for ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: EC2

Latent	Emerging	Established	Advanced
There is no funding for participation in ILSA.	<b>There is funding from loans or external donors.</b>	There is regular funding allocated at discretion.	There is regular funding approved by law, decree or norm.

## Justification:

Funding for ILSA (including PISA for Development) is provided primarily by external funding, either dedicated for specific ILSA or as part of the broader education sector plan, which is devised by the MoE and Development partners. Although there are plans to normalise funding for PISA for Development, the funding mechanisms have not been agreed upon by stakeholders.

## Description: Adequacy of ILSA funding

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

SABER-SA-ILSA: EC2

Latent	Emerging	Established	Advanced
	Funding covers some core activities of the ILSA.	<b>Funding covers all core activities of the ILSA.</b>	

## Justification:

Before committing to ILSA activities, the MoE ensures that the project costs will be covered through donor funding or commitment from the national budget. The source of funding varies from cycle to cycle, and there is a general belief that, in the absence of donor support, SACMEQ is seen as a political necessity and the MoE would cover the operational costs through the Department of Planning's budget. The prevalent belief is that the same principles apply to PISA for Development.

## Description: Bureaucratic efficiency

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

PISA Technical Standards: Standard 19.1, PISA Technical Standards: Standard 1.1, PISA Technical Standards: Standard 7.1, PISA Technical Standards: Standard 14.1, PISA Technical Standards: Standard 14.2, PISA Technical Standards: Standard 15.1, PISA Technical Standards: Standard 15.2, PISA Technical Standards: Standard 15.3, PISA Technical Standards: Standard 15.4

Latent	Emerging	Established	Advanced
Stakeholders and the NC have no direct communication		Channels for communication involve unnecessary third parties	<b>Communication channels allow direct institutional access between NC and stakeholders</b>

## Justification:

Communication between the NC and stakeholders requires formal letters of introduction from a senior management level (typically, Director of the Examinations Council of Zambia). Informal communications can occur through peer networks, but if actionable information or decisions are produced by these meetings, retroactive letters of introduction are required. This process can delay project implementation, but it is only required at the initiation of a relationship.

Description: Efficiency of communication protocols

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 1.1, PISA Technical Standards: Standard 14.1, PISA Technical Standards: Standard 14.2, PISA Technical Standards: Standard 15.1, PISA Technical Standards: Standard 15.2, PISA Technical Standards: Standard 15.3, PISA Technical Standards: Standard 15.4, NPM Manual: Communication (NPM/NC responsibilities)

Latent	Emerging	Established	Advanced
The NPM is not able to engage directly or indirectly with key stakeholders	The NPM can engage stakeholders but only indirectly through higher management levels	The NPM can engage directly stakeholders but in a formal or subordinate role (i.e., with restricted exchange of communication)	<b>The NPM can engage most stakeholders as a peer</b>

Justification:

The NPM can engage stakeholder organisations at peer levels of management. The same is true for lower level staff within the NC who are free to correspond with operational peers within different institutions. Conflicts between stakeholders in different stakeholder organisations are resolved through simple escalation that refers conflicts to higher levels of management within respective institutions.

Description: Communication with stakeholders

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 19.1, PISA Technical Standards: Standard 1.1, PISA Technical Standards: Standard 7.1, PISA Technical Standards: Standard 14.1, PISA Technical Standards: Standard 14.2, PISA Technical Standards: Standard 15.1, PISA Technical Standards: Standard 15.2, PISA Technical Standards: Standard 15.3, PISA Technical Standards: Standard 15.4, NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
There is no regular communication between NC and stakeholders	The NC interacts with a network of contacts representing each stakeholder organisation	The NC provides regular updates or bulletins to stakeholders	<b>The NC has regular meetings or accessible forums with stakeholders for two-way discussions</b>

Justification:

Senior NC staff meet with all education stakeholders through the National Assessment Steering Committee meeting. Bilateral meetings are also held on request. Regular National Assessment operational meetings also provide the opportunity for stakeholders directly associated with LSA activities to convene. NC staff interact indirectly with schools and teachers through outreach activities and distribution of resource material. These meetings would also provide the forum for PISA for Development co-ordination.

Description: NLSA research and development funding

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: EC3

Latent	Emerging	Established	Advanced
	Funding does not cover research and development activities	<b>Funding covers some professional development activities</b>	Funding covers research and development activities

Justification:

Development partner funding is allocated to development of skills related to NLSA implementation. The funded activities are intended to develop capacity rather than modify the existing project design. However, an intended corollary outcome of the professional development is that the NC staff will have the technical skills necessary to motivate future redesign decisions.

Description: Having strong organisational structures for NLSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: EC4

Latent	Emerging	Established	Advanced
There is no NLSA office, ad hoc unit or team	The NLSA office is a temporary agency or group of people	<b>The NLSA office is a permanent agency, institution, or unit</b>	The NLSA office is an independently-funded and operating agency, institution, or unit

## Justification:

The NLSA is managed by the ECZ, a largely autonomous permanent department within the Ministry of Education and Training (MoE). Although the budget allocation for the ECZ's activities falls under the MoE, the ECZ has a relatively autonomous bureaucratic hierarchy under the authority of the Director of the ECZ. The ECZ receives core funding for the national Examinations activities as well as dedicated funding for national assessment activities. For the purposes of facilitating the NAS, all ECZ may be made available for various activities (i.e., instrument development and data collection), although the core team consists of two managers and three senior level project/research officers. Due to the technical requirements of some activities, managers also have technical operational responsibilities.

The ECZ convenes two committees to oversee the NLSA. The first is a steering committee chaired by the Permanent Secretary, MoE and including representatives of all the directorates of the MoE, co-operating partners, civil society and teacher unions. The second is a technical committee comprising senior level officers from all the directorates of the MoE that provides technical guidance to the steering committee.

## Description: Autonomy of NLSA structures

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

SABER-SA-NLSA: EC4

Latent	Emerging	Established	Advanced
	Political considerations regularly hamper technical considerations	<b>Political considerations sometimes hamper technical considerations</b>	Political considerations never hamper technical considerations

## Justification:

Although there is a general culture of pursuing best practice within the ECZ, there is some hesitance to using techniques that the technical staff cannot defend with confidence to political stakeholders in a manner than stakeholders can access and repeat. As a result, it is difficult to implement methods that are based on complex statistics that cannot be summarised in plain language.

## Description: Accountability of LSA structures

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

SABER-SA: NLSA

Latent	Emerging	Established	Advanced
	The NLSA office is not accountable to a clearly recognised body	<b>The NLSA office is accountable to a clearly recognised body</b>	

Justification:

The national assessment team is directly responsible to the Director of the ECZ, with a chain of authority extending to the Permanent Secretary (Education) and elected government officials.

Description: ILSA research and development funding

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: EC2

Latent	Emerging	Established	Advanced
Funding does not cover research and development activities.		<b>Funding covers some professional development activities.</b>	Funding covers research and development activities.

Justification:

Typically, ILSA activities include international meetings with limited training, but PISA for Development funding is expected to cover training with the PISA for Development International Contractor.

*Project Requirement 2. Compiling and confirming information on schools and students for the definition of the assessment population*

Description: Geography and climate obstacles

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
Large segments of the population are inaccessible to data collectors	Quality of transportation networks deny access of data collectors to certain regions	<b>Quality of transportation networks limits the ability to reach certain regions under certain weather conditions</b>	All regions are accessible

Justification:

In rainy seasons, narrow roads are typically impassable in rural regions. However, these regions account for less than 5% of the national population.

Description: Security issues with data collection

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
Lack of security prevents data collection for large segments of the population	Civil unrest makes certain regions inaccessible to data collectors	Civil unrest requires additional security to ensure the safety of personnel and integrity of data in certain regions	<b>All regions are accessible</b>

Justification:

There are no regional conflicts or persistent criminal activities that would jeopardise data collection.

Description: Effect of political climate on implementation

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
Political conflict prevents project from proceeding	Political tensions introduce bureaucratic difficulties which reduce the ability of the NPM to reach consensus with stakeholders or meet timelines	Political climate does not adversely affect the project	<b>All relevant political bodies (government and opposition) actively support the project</b>

Justification:

There is unanimous support from all stakeholders for the implementation of PISA for Development. The Participation Agreement has been signed, which effectively defines the programme as government policy.

Description: Reliability of student attendance

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 1.10

Latent	Emerging	Established	Advanced
Student attendance is unreliable and/or not monitored	<b>Student attendance may be monitored but is vulnerable to out-of-school factors (e.g., work, weather)</b>	Student attendance is reliable but is not formally monitored with attendance records	Student attendance is reliable, monitored, and enforced with attendance policies

Justification:

Student attendance is generally reliable, and student attendance is noted at the school level. However, during certain times of the year in rural regions, attendance may be irregular due to increased family responsibilities.

Description: Quality of school sample frame

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 1.6, PISA Technical Standards: Standard 9.3, PISA Technical Standards: Standard 16.1

Latent	Emerging	Established	Advanced
There is no EMIS or equivalent infrastructure to provide a school sampling frame	An EMIS is present but is not used or is not accessible for confidentiality or bureaucratic reasons	<b>An EMIS exists and is accessible but is not updated regularly or the frame is inaccurate (missing schools or have schools that don't exist)</b>	An EMIS is updated annually with an accurate frame

Justification:

School data is updated annually through the annual school census. However, processing and reporting of the school census data is typically delayed at least a year due to the high manual processing load. Data are collection through paper and pencil questionnaires and are not stored in a centrally accessible database with a known structure and protocols for access/extraction. The primary use of the census is for the production of the school census report.

Description: Level of detail in administrative student data

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS 34

References:

PISA Technical Standards: Standard 1.6, PISA Technical Standards: Standard 9.3, PISA Technical Standards: Standard 16.1

Latent	Emerging	Established	Advanced
No student data (e.g., grade, age) is available for individual schools	Student data (e.g., grade, age) is recorded in aggregate at the school level	<b>Students data are recorded in central records that link student name and school name</b>	Students have profiles and personal identification numbers that persist across grades and schools

Justification:

At age 15, student records will be linked to schools due to student registrations for public examinations. The ECZ manages this registration database, so the information will be available for the design of PISA for Development's school sample.

Description: Scheduling conflicts due to local political activities

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
Regional resources are not available due to conflicting or uncertain availability	Uncertainty over the timing of magnitude of political or civic events results in inability of individuals, institutions, or regions to commit to participating in PISA	<b>Use of common resources (schools, teachers/ head teachers) causes scheduling conflicts with implementation of PISA in schools</b>	Scheduled political or civic activities do not adversely affect the project

Justification:

PISA for Development activities will need to be scheduled around the calendar of civic and political events, because schools and teachers' roles in these activities will take priority over national and international LSA activities. Co-ordination with these activities will need to be co-ordinated in the PISA for Development project implementation plan.

Description: 15-year-old census

Programme Output: Including out-of-school 15-year-olds

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
No information is available about out-of-school 15-year-olds	<b>Information about out-of-school 15-year-olds is available from data sources updated with &gt;5 year frequency</b>	Information about out-of-school 15-year-olds is available from data sources updated with 2-5 year frequency	Information about out-of-school 15-year-olds is available from data sources updated annually

Justification:

The national census is conducted every 10 years, with synthetic estimates in the interim that are based on assumptions about birth and mortality rates. Annual school census data record the number of enrolled student at all ages; a time series may be constructed to estimate the number of out-of-school 15-year-olds in a school's catchment area for a given year.

Description: Location of 15-year-olds

Programme Output: Including out-of-school 15-year-olds

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
No information is available about geographic location of 15-year-olds	<b>Information about location of 15-year-olds is at regional levels (e.g., number of 15-year-olds in each province)</b>	Information about location is at community or district levels (e.g., number of 15-year-olds in each community)	Information about location includes household addresses of 15-year-olds

Justification:

Census data (updated every 10 years) provides synthetic estimates of number of 15-year-olds at the community level, but the models are not accurate at small geographies. Cumulative annual school census can be used to estimate the number of 15-year-olds who have dropped out of school in the surrounding community since initial entry into the school system. However, there is no indication that the school reported numbers are more accurate than the census-based estimates; school participation rates at the regional level often exceed 100%.

*Project Requirement 3. Stipulation of languages in which assessment materials will need to be available*

Description: Information on student language of instruction

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 2.1

ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS 36

Latent	Emerging	Established	Advanced
No student records are available	Student records are available but do not store dominant language of instruction	<b>Student information records the dominant language of instruction</b>	Student information records the language of instruction for each subject

Justification:

Student records do not record language of student instruction (it is presumed to be the same as the language of the school). Primary education is typically in local language and the language of secondary education is English. However, teachers often teach in the language that in which they can best communicate with students.

Description: Information on school language of instruction

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 2.1

Latent	Emerging	Established	Advanced
There is no EMIS or equivalent system	School information is centrally stored but without language of instruction	<b>School information contains predominant language of instruction</b>	

Justification:

School language of instruction is determined by the surrounding community (local language). The official language of instruction for secondary students is English, and national and international LSA at the secondary level are conducted in English. Information about school language is available through administrative records and school census.

*Project Requirement 4. Definition of criteria for stratification of school and student samples*

Description: Clear statement of purpose for participation in NLSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: EC1

Latent	Emerging	Established	Advanced
There is no policy document pertaining to NLSA.	There is an informal or draft policy document that authorises the NLSA.	<b>There is a formal policy document that authorises the NLSA.</b>	

Justification:

The NLSA was formally authorised by the MoE's National Implementation Framework (2007) for the Fifth National Development Plan. The NLSA has continued under this framework with annual budget allocations.

Description: Transparent policy for NLSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: EC1

Latent	Emerging	Established	Advanced
	The policy document is not available to the public.	The policy document is available to the public.	

Justification:

The National Implementation Framework is available on request from MoE staff.

Description: Clear statement of purpose for participation in ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: EC1

Latent	Emerging	Established	Advanced
There is no policy document that addresses participation in ILSA.	There is an informal or draft policy document that addresses participation in ILSA.	<b>There is a formal policy document that addresses participation in ILSA.</b>	

Justification:

Participation in ILSA is discretionary and opportunistic, depending on the availability of external funding. However, MoE has signed a formal agreement with OECD that commits Zambia to participating in PISA for Development for the current cycle.

Description: Use of ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS 38

References:

SABER-SA-ILSA: AQ2

Latent	Emerging	Established	Advanced
If any, country/system-specific results and information from the ILSA are not used to inform decision making in the country/system.	<b>Results from the ILSA are used in a limited way to inform decision making in the country/system.</b>	Results from the ILSA are used in some ways to inform decision making in the country/system.	Results from the ILSA are used in a variety of ways to inform decision making in the country/system.

Justification:

Historically, interpretation of SACMEQ results has been used to draw attention to the education sector but not to inform specific policy development.

Description: Stakeholder use of LSA data

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 19.1

Latent	Emerging	Established	Advanced
No stakeholders use of LSA	Stakeholders reference reported average scores and 'passing' percentages from published LSA information	<b>Stakeholders commission specialised reports or reference correlations and other specific information from LSA</b>	Stakeholders actively analyse data for specific information

Justification:

Historically, where stakeholders use national or international LSA results, the references are limited to simple percentages-above-standard or high-level averages for geographic regions. In conversation, aggregate results are referred to in general terms, such as "the results showed poor performance for some regions." Newer reporting of results stress the relationships between performance of different groups, such as the possible effects of teacher skills on student skills.

*Project Requirement 9. Communication and co-ordination with schools that will participate in the assessment*

Description: Engagement of data collection agency or network with collection sites (e.g., schools)

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

## PISA Technical Standards: Standard 1.6

Latent	Emerging	Established	Advanced
	The NC has contact information for individuals with access to school sites	The NC has intermittent administrative contact with schools or contact through previous LSA	<b>The NC has regular contact with schools through professional development and/or previous LSA activities</b>

## Justification:

The data collection network employed for all LSA is continuously engaged by the ECZ through a variety of ongoing LSA and outreach projects.

Description: Perceptions of external survey-based large-scale assessment (LSA) of lower-level stakeholders

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

PISA Technical Standards: Standard 1.10

Latent	Emerging	Established	Advanced
Stakeholders have no knowledge of external LSA or assume that LSA is used to evaluate specific school performance	Stakeholders understand LSA is not antagonistic but see it as an unnecessary disruption	<b>Stakeholders recognise a clear washback effect from the results of LSA and the policies and practices affecting learning</b>	Stakeholders recognise external uses of LSA information and make internal use of LSA results to inform policy and practice

## Justification:

Many stakeholders voluntarily speak to specific policies that have arisen as a consequence of the results from previous national and international LSA. The policies tend to be attempts at broad improvements to the quality of education motivated by average student performance rather than specific interventions inspired by correlations found in LSA results. Development partners have use previous LSA results for programme monitoring and evaluation.

*Project Requirement 14. Establishing a training plan with key staff of the NC to attend training sessions*

Description: Funding for NPM/NC for international training and meetings

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

NPM Manual: International participation

ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS 40

Latent	Emerging	Established	Advanced
No budget or time exists for international training	Ad hoc funds are allocated, when available, to support participation in international training and meetings	Institutional participation is formally committed, with funding from a variety of sources	<b>Dedicated funds are available for participation in international training and meetings</b>

Justification:

The PISA for Development budget covers all international training and meetings.

Description: Availability of NPM/NC for international training and meetings

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: International participation

Latent	Emerging	Established	Advanced
Staff are prevented from participating in international activities due to restrictions on personal or professional travel	No time is allocated for international activities, and they are completely external to staff's institutional responsibilities	<b>Participation in international activities is within the scope of institutional responsibilities, but in addition to regular responsibilities</b>	Time is specifically allocated to participation in and preparation for international activities

Justification:

The MoE has emphasised the importance of fully participating in PISA for Development and has committed the ECZ to this role. However, the staff are still responsible for completing all the tasks required by in-country activities that they were assigned prior to PISA for Development.

Description: Participation in previous international ILSA training

Programme Output: Identify peer-to-peer learning opportunities regarding PISA participation with other countries and development partners

References:

SABER-SA-ILSA: SA1

Latent	Emerging	Established	Advanced
The ILSA team has not attended international workshops or meetings.	<b>The ILSA team attended some international workshops or meetings.</b>	The ILSA team attended all international workshops or meetings.	

Justification:

The local SACMEQ team participated in international workshops and meetings but found that these workshops were not effective as capacity building exercises. The main reason for the poor effectiveness was development of workshop content that did not adequately consider the needs and existing capacity of the participants. Currently, participation in PISA for Development meetings by team leaders has been sporadic due to staff availability. If unaddressed, this inconsistency may reduce the ability of the ECZ to develop institutional knowledge base for PISA for Development.

*Project Requirement 25. NPM develops a national dissemination plan of their country's participation in PISA for Development and the relevant results from the pilot*

Description: Expectations for NLSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: EC1

Latent	Emerging	Established	Advanced
There is no plan for NLSA activity.		There is a general understanding that the NLSA will take place.	<b>There is a written NLSA plan for the coming years.</b>

Justification:

The NLSA is implemented under a previous education sector plan, and has continued under the existing framework.

Description: Having strong public engagement for NLSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: EC2

Latent	Emerging	Established	Advanced
All stakeholder groups strongly oppose the NLSA.	Some stakeholder groups oppose the NLSA.	Most stakeholders groups support the NLSA.	<b>All stakeholder groups support the NLSA.</b>

Justification:

All national stakeholder groups in the education sector are represented on the National Assessment Steering Committee, which approves all decisions related to NAS strategic planning.

*Project Requirement 27. The NPM provides input and guidance with regards to the policy priorities that should help determine the content and analysis presented in the country report*

Description: Setting clear policies for ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: EC1

Latent	Emerging	Established	Advanced
	The policy document is not available to the public.	The policy document is available to the public.	

Justification:

There is no policy document for ILSA in Zambia. Documentation specific to Zambia's participation in SACMEQ is difficult to access, either through Zambian stakeholders or SACMEQ itself. There is currently no mechanism to make the PISA for Development Participation Agreement public accessible.

Description: Contributions to ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: AQ1

Latent	Emerging	Established	Advanced
The country/system has not contributed new knowledge on ILSA.			The country/system has contributed new knowledge on ILSA.

7.1.8.3. Description: Dissemination of ILSA results

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: AQ2

Latent	Emerging	Established	Advanced
If any, country/system-specific results and information are not disseminated in the country/system.	<b>Country/system-specific results and information are disseminated irregularly in the country/system.</b>	Country/system-specific results and information are regularly disseminated in the country/system.	Country/system-specific results and information are regularly and widely disseminated in the country/system.

Justification:

Dissemination of SACMEQ results has depended on releases to media and subsequent media engagement with the international SACMEQ report.

Description: Feedback from ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: AQ2

Latent	Emerging	Established	Advanced
<b>Products to provide feedback to schools and educators about the ILSA results are not made available.</b>		Products to provide feedback to schools and educators about the ILSA results are sometimes made available.	Products to provide feedback to schools and educators about ILSA results are systematically made available.

Justification:

SACMEQ results are summarised in thematic reports that are available on the SACMEQ website, but no information products are produced for or disseminated to schools.

Description: Breadth of stakeholder engagement

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 19.1

Latent	Emerging	Established	Advanced
Only the K-12 sector is engaged in LSA	<b>K-12, TEVET and University sectors are engaged in LSA</b>	Multiple stakeholders representing public interests including education and non-education sectors are engaged	Multiple stakeholders are engaged including non-government or indirect educational stakeholders

## Justification:

There is substantial stakeholder involvement, but it is primarily limited to government sectors and Development partners with interests directly in Education.

Description: Media coverage of ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

SABER-SA-ILSA: AQ2

Latent	Emerging	Established	Advanced
There is no media coverage of the ILSA results.	<b>There is media coverage of the national averages and percentages from ILSA results.</b>	There is national media coverage of the ILSA results beyond national averages/percentages that includes correlations and demographic comparisons.	There is national and local media coverage of detailed ILSA results.

## Justification:

Media coverage tends to focus on comparisons of average performance of large geographic regions.

Description: Positive washback of ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

SABER-SA-ILSA: AQ2

Latent	Emerging	Established	Advanced
It is not clear that decisions based on ILSA results have had a positive impact on students' achievement levels.		<b>ILSA results have influenced decision-making intended to improve students' achievement levels.</b>	Decisions based on the ILSA results have had a positive impact on students' achievement levels.

## Justification:

Comparison of national performance with other countries' has motivated examination and reformulation of national education policies, such as teacher training and provision of educational resources. Although no policies specifically reference the SACMEQ results for monitoring purposes, interviewees widely reported that public sentiment about poor performance of Zambia relative to peer countries created a political climate that facilitated development and implementation of new policies.

Description: Learning needs for non-academic outcomes

Programme Output: Enhanced cognitive assessments for below-baseline proficiency levels in PISA

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
No attention is given in the education sector to non-academic skills		<b>The trade/vocational training sector defines foundational skills for occupational training</b>	A framework extends the K-12 curricula to adult competencies relevant to local contexts (including economy, citizenship, etc.)

Justification:

The new K-12 curricula includes additional life skills that extend traditional academic domains. The TVET sector is responsible for determining student entry requirements, but there is no common framework for 'minimum adult competencies' required for successful participation in the workforce or general life.

*Project Requirement 32. Planning of the quality assurance process so that Quality Monitors visit a sample of schools during testing sessions to observe and document quality of sessions*

Description: Monitoring of collection procedures

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 9.3

Latent	Emerging	Established	Advanced
	Institutions or individual stakeholders may nominate or exclude specific sites from monitoring	<b>Monitored sites are selected randomly with ad hoc exclusions</b>	Monitored sites are randomly sampled and the rationale for any exclusions from site monitoring is agreed upon prior to sampling

Justification:

Exclusions from sampling tend to be determined by access issues that arise during the data collection process. Approval for site exclusion is made centrally after initial attempts for collection have failed.

### ***CNA Dimension 2. Organisation***

*Project Requirement 1. Designation of NPM and establishment of National Centre*

Description: National co-ordinator for ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: EC3

Latent	Emerging	Established	Advanced
There is no team or national/system co-ordinator to carry out the ILSA activities.	There is a team or national/system co-ordinator to carry out the ILSA activities.	<b>There is a team and national/system co-ordinator to carry out the ILSA activities.</b>	

Justification:

Each ILSA makes use of a different national co-ordinator. The national team responsible for SACMEQ will not be responsible for PISA for Development, although there are common team members (specifically, the PISA for Development NPM). The NPM for PISA for Development has been confirmed in the signed Participation Agreement.

Description: Effectiveness of human resources for ILSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: EC3

Latent	Emerging	Established	Advanced
	<b>The ILSA office is inadequately staffed or trained to carry out the assessment effectively.</b>	The ILSA office is adequately staffed or trained to carry out the ILSA effectively, with minimal issues.	The ILSA office is adequately staffed and trained to carry out the ILSA effectively, with no issues.

Justification:

Occasional delays are caused as project staff become overwhelmed managing operational tasks as well as performing routine clerical duties. In the long term, this issue may reduce the sustainability of the program.

Description: Scheduling priority given to ILSA activities

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
<b>NC staff are typically assigned higher priority requests related to other projects</b>	NC staff are typically required to immediately attend or do not reschedule meeting requests from managers or colleagues (i.e., meeting requests take priority over pending work)	NC staff manage their own schedules and may reschedule ad hoc meeting requests	Administrative support for NC intercepts and schedules or co-ordinates ad hoc meeting requests on behalf of NC staff

Justification:

ILSA activities typically assume the lowest priority for NC staff. Even though the ILSA are deemed important by all levels of management, because international schedules have traditionally been less stringent than annual production cycles of ECZ activities, if there is a conflict of human or technical resources, the ILSA activities become under-resourced. If the ILSA schedule is equally stringent, individuals within the ECZ must make up the resourcing gap by performing ILSA activities through unpaid overtime. This resource allocation strategy risks the long-term sustainability of all LSA programs; satisfying all competing LSA projects' demands will be a key component in the PISA for Development project implementation plan.

Description: Availability of NPM

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
NPM time is committed as required, in addition to regular responsibilities	Part time commitments from one or more people do not adequately cover the minimum PISA commitment (2 full-time equivalents). PISA responsibilities are managed through paid or unpaid overtime	<b>Sufficient time commitments are made by NC staff to meet PISA demands, but no individuals are assigned full-time to PISA responsibilities</b>	Sufficient person-time is allocated to PISA with at least one full-time (non-clerical) NC staff member.

Justification:

The PISA for Development staffing requirements will be met with a combination of two senior managers and lower level staff for clerical support. Additional PISA requirements will be met with a combination of ECZ staff and external service providers.

Description: Engagement of clerical/administrative support

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities, PISA Technical Standards: Standard 17.3, PISA Technical Standards: Standard 17.4

Latent	Emerging	Established	Advanced
<b>Clerical support is not involved in correspondence (NPM manages all correspondence directly)</b>		Clerical support distributes outgoing correspondence from NC	Clerical support is the initial point of contact and/or has access to all incoming and outgoing correspondence

Justification:

Clerical support is provided for Director-level communications but not for NPM.

Description: National Centre co-ordination

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
NC staff have no set schedule of appointments or meetings		<b>Staff meetings are scheduled and attended regularly</b>	NC staff use shared agendas to enable regular and ad hoc scheduling of meetings

Justification:

Staff meetings are held weekly and schedules are arranged through email and memoranda. If ad hoc meetings are required, there are arranged through email, telephone, or in-person.

Description: Access to a reliable, high bandwidth Internet connection and e-mail facilities

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: Resources of the National Centre

Latent	Emerging	Established	Advanced
NC has no internet access	NC has low bandwidth or unreliable internet	Reliable, high bandwidth internet is available onsite at selected terminals within the NC	<b>NC has a fully networked environment with universal access to high bandwidth internet and email</b>

Justification:

All staff have access to the broadband workplace network through work PC's and may also connect personal computers.

Description: Computing environment

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: Resources of the National Centre

Latent	Emerging	Established	Advanced
Not all staff have full-time computer access or do not have access to document and spreadsheet applications	NC relies on personal computers of staff running Windows XP or later with Microsoft Office professional (2007 or later); all computers include Excel and Word applications but do not connect to a workplace network	<b>NC staff all have personal or dedicated computers with standard software; access to the workplace network may be limited</b>	NC has dedicated workplace computers for all staff with standard software and network access

Justification:

Not all computers are of equal quality. The newest, most powerful computers tend to be personal laptops.

Description: Data quality of ILSA

Programme Output: Identify peer-to-peer learning opportunities regarding PISA participation with other countries and development partners

References:

SABER-SA-ILSA: AQ1

ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS 50

Latent	Emerging	Established	Advanced
Data from the ILSA have not been published.	The country/system met sufficient standards to have its data presented beneath the main display of the international report or in an annex.	<b>The country/system met all technical standards required to have its data presented in the main displays of the international report.</b>	

Justification:

Zambia has had its results included in all cycles of its SACMEQ participation.

Description: Local capacity building for ILSA

Programme Output: Enhanced contextual questionnaires and data-collection instruments

References:

SABER-SA-ILSA: SA1

Latent	Emerging	Established	Advanced
<b>The country/system offers no opportunities to learn about ILSA.</b>		The country/system offers some opportunities to learn about ILSA.	The country/system offers a wide range of opportunities to learn about ILSA.

*Project Requirement 5. Establishing security protocols for the National Centre and for national sub-contractors*

Description: Integrity of coding

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 11.4

Latent	Emerging	Established	Advanced
	Coders are selected from bureaucratic appointments or personal networks	<b>Coders are selected from nominated applicants using transparent criteria</b>	

Justification:

Coders are hired following a transparent nomination, evaluation and competition. All coders must meet minimum criteria for professional credentials and experience.

Description: Computing security

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: Resources of the National Centre

Latent	Emerging	Established	Advanced
Security software is limited to pre-installed software on personal or office computers	<b>Staff are personally responsible for maintaining antivirus and software updates without supervision</b>	Staff follow institutional policies regarding regular software and antivirus definition updates	Dedicated IT staff or network policies ensure all software updates are installed at the institutional level

Justification:

Many staff members do not have up-to-date software patches, antivirus software or virus definitions. As a result, the network security is potentially compromised. The most secure computing environments tend to be personal computers that have been routinely updated.

Description: Accountability for security

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 8.1, PISA Technical Standards: Standard 18.2

Latent	Emerging	Established	Advanced
There are no consequences for breaches in security	There are ad hoc or discretionary policies regarding how to respond to breaches in security	There are discipline policies for breaches in security with ad hoc or discretionary consequences and individuals with access to secure materials are aware of security protocols	<b>Where uncontrolled access is possible, legally binding confidentiality agreements enforce the data access restrictions and apply to all staff</b>

Justification:

All NC staff must abide by legally binding agreements and laws governing the security of the ECZ.

Description: Secure storage of completed materials following data collection

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 8.1, PISA Technical Standards: Standard 18.2

Latent	Emerging	Established	Advanced
No secure facilities are available to the NC		Repurposed storage or private office space is used to secure materials within the NC	<b>NC facilities have a specific security infrastructure for storing data collection materials (i.e. it is not physically possible for individuals to access secure material without it being granted by NPM)</b>

Justification:

The NC has secure physical facilities for the storage and processing of completed data collection materials. The premises are guarded and access to the specific rooms is managed by the NPM.

Description: Adherence to security protocols

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 8.1, PISA Technical Standards: Standard 18.2

Latent	Emerging	Established	Advanced
NC staff and partners have no experience with or no culture of security	There is a legal or administrative framework for accountability with respect to security	Staff with access to secure materials receive training in security protocols	<b>All staff receive training in security protocols</b>

Justification:

Training in security protocols is mandatory for all staff. Breaches in security are not well documented, but anecdotally, there have been no breaches in security as a result of the actions of core ECZ staff. Protocols are maintained with electronic measures that require individual authentication for access to sensitive materials. Notices of consequences for violations of government examinations policy are visibly posted throughout the ECZ offices.

Description: Security auditing

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 8.1, PISA Technical Standards: Standard 18.2

Latent	Emerging	Established	Advanced
No tracking is made of access to secure materials	A list of individuals with permission is used to grant access to secure materials	The NPM can invoke or revoke access for any individual on the permitted list at any time	<b>Access to secure materials is verified and recorded every time the material is accessed</b>

Justification:

Permissions to secure material are limited, but the management of this access with respect to specific individuals is less precise. Generally, the culture of security is quite strong, and staff within the ECZ self-police with respect to accessing protected areas. There is no indication that permissions, once granted to specific staff, are ever revoked.

Description: Secure space for conducting the coding operations

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: Resources of the National Centre

Latent	Emerging	Established	Advanced
No facilities are available	Multi-purpose facilities outside the NC are available for coding	Multi-purpose facilities within the NC may be secured for coding	<b>Dedicated secured facilities are available</b>

Justification:

Coding activities for PISA for Development will make use of the same physical infrastructure as other LSA marking activities.

Description: Software resources

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: Resources of the National Centre

Latent	Emerging	Established	Advanced
There is no mechanism for acquiring specialised software that is not already installed with computer at time of purchase	Individuals may download or purchase software for their own use without technical support or oversight	<b>Individuals may download or purchase software for their own use but have access to institutional copies of required software</b>	The NC administration maintains software licenses and manages acquisition and installation of necessary software

## Justification:

Computer use is generally unpoliced by IT dedicated staff; individual users are responsible for managing acquisition and installation of the software that they use personally. IT staff are responsible for installation and licensing of Enterprise-level applications.

*Project Requirement 9. Communication and co-ordination with schools that will participate in the assessment*

Description: Sufficiency of data collection staff

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

PISA Technical Standards: Standard 1.7, PISA Technical Standards: Standard 1.8, PISA Technical Standards: Standard 3.1

Latent	Emerging	Established	Advanced
There are no available data collections staff	Available data collection staff are inexperienced, poorly trained, or do not have appropriate linguistic skills	<b>There are few trained data collectors who must travel to many sites or many inexperienced or linguistically challenged data collectors</b>	<b>There is a sufficient number of qualified data collectors for all sites</b>

## Justification:

There is a reasonably large pool of local staff for data collection available through district offices of the MoE. These district personnel have access to all schools in Zambia and the long term plan of the ECZ is to provide continuous professional development for district office staff for data collection activities. While the district centre network has a wide reach and staff available, the rating of established, rather than advanced, is justified in this area because the district centre staff currently have no training in data collection. Moreover, trained data collectors are difficult to provide for more remote regions.

*Project Requirement 14. Establishing a training plan with key staff of the NC to attend training sessions*

Description: Availability of ILSA training

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

## References:

SABER-SA-ILSA: SA1

Latent	Emerging	Established	Advanced
		<b>Opportunities to learn about ILSA are available to the country's/system's ILSA team members only.</b>	Opportunities to learn about ILSA are available to a wide audience, in addition to the country's/system's ILSA team members.

Justification:

The first opportunity individuals have to learn about LSA typically occur after they have joined the project team. Information about LSA is typically found through the media or direct requests made from interested parties to the ECZ.

*Project Requirement 24. Recruitment and training of test administrators that do not have any direct relationship to the students that will be assessed and that are experienced and competent enough to carry out the testing sessions following the scripts, guidelines and procedures established*

Description: Commitment of data collection staff

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 1.7, PISA Technical Standards: Standard 3.1, PISA Technical Standards: Standard 1.3

Latent	Emerging	Established	Advanced
Insufficient data collection staff	Data collection staff are part-time, shared with other institutions	<b>Data collection staff are part-time, shared with other projects in the same institution</b>	Data collection staff are specifically hired or reassigned for this role/project

7.2.5.2. Description: Availability of training facilities

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 6.2, PISA Technical Standards: Standard 11.2

Latent	Emerging	Established	Advanced
No facilities available (self-study or one-one-one)		<b>Existing facilities may be repurposed to accommodate training</b>	A dedicated training environment is available

Justification:

ECZ facilities cannot accommodate large group training, but there are several local venues which have previously been used for similar activities for the NAS, public examinations and SACMEQ.

Description: Avoidance of conflicting interests

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS 56

References:

PISA Technical Standards: Standard 6.3

Latent	Emerging	Established	Advanced
Hiring for data collection is treated as casual employment	<b>The NC maintains employment records of data collectors</b>	Employment records include subjects taught by data collectors and schools worked at	Employment framework require data collectors to disclose any potential conflict of interest

Justification:

There are no specific mechanisms for negotiating potential conflicts of interest for data collectors other than requiring that they be employed by local district MoE offices rather than the participating schools.

Description: Commitment of data collectors to training

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 6.2

Latent	Emerging	Established	Advanced
There is no provision or time for training	Data collectors must volunteer time or training time conflicts with regular responsibilities	<b>Data collector time is compensated but regular responsibilities may conflict with the training schedule</b>	Training time is compensated and is integrated with regular duties (or staff are hired exclusively for data collection)

Justification:

Data collectors are typically already employed, so any additional training must occur in addition to regular work activities. The project implementation plan must co-ordinate training with existing responsibilities.

Description: Household survey collection

Programme Output: Including out-of-school 15-year-olds

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
The no in-country capacity to conduct national surveys	Public or private data collection agencies are available but do not have capacity for national surveys	<b>The NC has access to service providers with national survey capacity</b>	National centre staff already has staff or existing relationship with resources for national survey collection

## Justification:

The national statistics office, CSO, has limited capacity to conduct an extended interview with an assessment component. However, it may be developing this capacity using electronic data collection using tablets through the implementation of an in-development health-related survey. Private data collection firms may have this technical capacity at regional levels, but there are none with scope for national data collection.

Description: Correct sequencing of administration of national options

Programme Output: Enhanced contextual questionnaires and data-collection instruments

References:

PISA Technical Standards: Standard 7.2

Latent	Emerging	Established	Advanced
Data collection staff have been/will be given instructions on the protocols	Data collection staff have been/will be trained after PISA design has been finalised	<b>Data collection staff have been/will be trained using the final instruments</b>	Final administration protocols are/will be sequentially scripted and bound and provided with the international testing materials

## Justification:

All PISA instrumentation is expected to be completed prior to the training of data collection staff.

*Project Requirement 25. NPM develops a national dissemination plan of their country's participation in PISA for Development and the relevant results from the pilot*

Description: Providing teachers with opportunities to learn about the NLSA

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-NLSA: SA2

Latent	Emerging	Established	Advanced
There are no courses or workshops on the NLSA.	<b>There are occasional courses or workshops on the NLSA.</b>	There are some courses or workshops on the NLSA offered on a regular basis.	There are widely available high quality courses or workshops on the NLSA offered on a regular basis.

Justification:

The ECZ produces a variety of communications materials, including pamphlets and PowerPoint presentations, which are distributed to schools and teachers through the outreach activities of district education offices.

*Project Requirement 26. Preparing and distributing testing materials to schools in a secure fashion, ensuring materials arrive safely and without suffering damage or alterations*

Description: Booklet distribution infrastructure

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA for Development Document

Latent	Emerging	Established	Advanced
Only ad hoc or site-specific printing resources are available		Service provider(s) or internal staff may be contracted or retasked to print and distribute booklets but must be trained with proper protocols	<b>Existing infrastructure can be used to transport testing materials using pre-existing security protocols</b>

Justification:

Booklet distribution for public examinations is reliable with high volumes in short time periods and is also very secure.

Description: Adequacy of transportation for data collectors

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 1.7, PISA Technical Standards: Standard 3.1, PISA Technical Standards: Standard 1.3

Latent	Emerging	Established	Advanced
	Data collectors use public or shared transportation or use personal transportation without reimbursement	Data collectors use personal vehicles with reimbursement	<b>Data collectors use dedicated institutional vehicles</b>

Justification:

Data collectors will use a combination of ECZ vehicles and personal vehicles. Travel time and expense is compensated.

*Project Requirement 28. Co-ordination of appropriate enhancements/adaptations/translations of instruments, manuals and guides, and field trial and verification process with international contractors*

Description: Effectiveness of training for data collection

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 6.1

Latent	Emerging	Established	Advanced
	Training for data collection consists of review of protocols or may not be standardised	Training for data collection is conducted individually	<b>Training for data collection is conducted in group settings with feedback between trainees</b>

Description: Availability of document formatting and print specifications

Programme Output: Enhanced contextual questionnaires and data-collection instruments

References:

PISA Technical Standards: Standard 10.2, PISA Technical Standards: Standard 10.3, PISA Technical Standards: Standard 10.4, NPM Manual: NC responsibilities

Latent	Emerging	Established	Advanced
Authors choose formats for their own documents	<b>Document and print specifications are not standardised or easily accessible</b>	All document print and specifications are maintained in manuals accessible to all NC staff	

Justification:

Individual authors tend to use default formatting templates that accompany standard office software.

*Project Requirement 29. Monitoring of school and student response rates, in co-ordination with international and national contractors, as appropriate*

Description: Responsiveness of sample design to data collection activities

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 1.6

Latent	Emerging	Established	Advanced
There no updates on sampling or non-response provided during data collection period		<b>The data collection is periodically updated to respond to sample non-response and assign replacements</b>	Daily or real-time updates on data collection or sample design are available from centralised data processing

Justification:

During the NAS data collection, daily reports of school non-response (due to inaccessibility, rather than refusal) are used to initiate the selection of replacement schools.

*Project Requirement 30. Organisation of plans for local printing of assessment materials and verification of print and paper quality in all languages that will be covered, while maintaining security*

Description: Quality of document proofing

Programme Output: Enhanced contextual questionnaires and data-collection instruments

References:

PISA Technical Standards: Standard 10.2, PISA Technical Standards: Standard 10.3, PISA Technical Standards: Standard 10.4, Publishing (NC responsibilities)

Latent	Emerging	Established	Advanced
Authors are responsible for proofing their own documents		<b>Document production relies on informal experience using individual expertise or idiosyncratic methods</b>	Clear protocols exist for the identification of potential typographic errors and/or the NC has an official dictionary and manual of style

Justification:

Authors rely on ad hoc peer review of documents in the production process. Documents tend to use neutral, professional language in passive voice, but there is no formal documentation of this style.

Description: Availability and quality of publishing resources

Programme Output: Enhanced contextual questionnaires and data-collection instruments

References:

NPM Manual: NC responsibilities, PISA Technical Standards: Standard 10.1

Latent	Emerging	Established	Advanced
NC has no existing relationship with publishers or publishing resources		NC has access to publishers with appropriate print quality and binding options but may require several firms to accommodate volume	<b>A dedicated outsourced publisher can accommodate the print volume in the desired time span prior to data collection or NC has in-house resources to handle publishing</b>

Justification:

The ECZ has both internal printing capacity and relationships with third party service providers sufficient to handle the volume of booklet production for PISA for Development.

*Project Requirement 31. Planning of staffing and resources (technical and material) needed for coding of test booklets and contextual questionnaires and data management*

Description: Fidelity of response coding

Programme Output: Enhanced contextual questionnaires and data-collection instruments

References:

PISA Technical Standards: Standard 11.3

Latent	Emerging	Established	Advanced
<b>Response coders and managers have not received or are not acquainted with operations manual from the NPM</b>	Coders and managers have access to the operations manual	The operations manual is used directly in training for and management of coding activities	

Justification:

None of the NC staff have reviewed or been briefed on the PISA operations, aside from general information provided in interviews during the CNA.

*Project Requirement 32. Planning of the quality assurance process so that Quality Monitors visit a sample of schools during testing sessions to observe and document quality of sessions*

Description: Data collection monitoring

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 9.1

Latent	Emerging	Established	Advanced
There is an insufficient quantity of external monitors	Monitors do not receive the same training or same quality of training in data collection as data collectors (see PISA Technical Standards: Standard 6);	Selected monitors are also trained as data collectors	<b>All monitors are trained as data collectors</b>

Justification:

Data collection monitors tend to be higher-level managers within the ECZ (or other MoE departments) because of the level of seniority required to provide oversight to data collection staff. However, senior staff may not have participated in data collection training activities with the same depth as actual data collectors.

### *CNA Dimension 3. Individual*

#### *Project Requirement 1. Designation of NPM and establishment of National Centre*

Description: Adherence to protocol

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 18.2, PISA Technical Standards: Standard 17.5, PISA Technical Standards: Standard 1.2, PISA Technical Standards: Standard 9.2

Latent	Emerging	Established	Advanced
Data processing staff have no experience with large scale data processing protocols		<b>Data processing staff have experience carrying out specific instructions in specific contexts</b>	Data processing staff have experience operating with a variety of protocols in different contexts

Justification:

Research officers are experienced following project-specific protocols that have evolved over time. These protocols are tied closely to idiosyncratic project methods, such as the test and questionnaire design, statistical methods and data capture technology.

*Description: NPM experience with dissemination of results from large scale assessment*

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
LSA reports statistical results only	<b>LSA reports include statistical tables and descriptions of statistical comparisons and notes where differences are substantive or significant</b>	LSA reporting uses narratives to relate results from separate statistical results or data sets	LSA reporting uses multiple narratives to multiple audiences, referencing relevant data where appropriate

Justification:

Previous public reports have been limited to tables of statistics and accompanying descriptions of the relative sizes of statistics in the same table of results.

*Description: NPM regularity of communication*

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
NPM has no email or voicemail	NPM has limited access to email and/or voicemail	<b>NPM can access and respond to email and voicemail at least once a day</b>	NPM can process all incoming email and voicemail each day

Justification:

The NPM's have daily access to email and voicemail, but lack of clerical support for communications tasks may result in communications backlogs that prevent NPM's from timely responses to correspondence.

*Description: NPM's skill in managing a team of project staff who carry out multiple tasks often needing simultaneous attention*

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities, PISA Technical Standards: Standard 19.2

Latent	Emerging	Established	Advanced
NPM has no previous management experience	NPM has experience managing a few people sharing common skills and responsibilities	NPM has experience managing a large team or a team composed of individuals with diverse responsibilities and skill sets	<b>NPM has experience in a matrix management structure where project team members belong to different administrative hierarchies</b>

Justification:

The national assessment structure involves a combination of stakeholder agencies whose activities are co-ordinated by the NPM.

Description: Relevance of NPM expertise

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
	NPM's expertise is related to a technical or specialised field, such as data management, analysis, or classroom instruction	NPM's expertise includes specialised knowledge as well as management experience	<b>NPM's expertise includes specialised knowledge, management experience and knowledge of government policy issues and/or international issues</b>

Justification:

The NPM has extensive experience within the education sector and has long-standing personal and professional relationships with representatives of most stakeholder organisations.

Description: NPM's previous experience in planning, organising and conducting large-scale surveys

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
	NPM has experience with polling or non-intensive questionnaire-based surveys or experience implementing large-scale survey	NPM has experience with planning some aspects of large-scale assessment surveys (e.g., testing, sampling, data collection)	<b>NPM has experience in several aspects of large-scale surveys, including design and data collection</b>

Justification:

The NPM has been working on national and international LSA projects in Zambia for over 10 years. Other NC staff have 5-10 years' experience working on LSA's.

Description: NPM's knowledge and confidence to represent the country at international meetings where aspects of the project will be discussed

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
NPM has sufficient seniority to represent the country's interests	NPM has experience working with different stakeholder groups within country and sufficient seniority to represent country's interests	<b>NPM has sufficient seniority to represent country's interests and knowledge of the interests of different stakeholder groups</b>	NPM has sufficient seniority to represent the country's interests and experience interacting with different sub-national and international stakeholders

Justification:

The NPM has sufficient knowledge and authority to represent the country's positions, but may not have the authority to make on-the-spot decisions that establish new positions with respect to issues that arise during international meetings.

Description: NPM's knowledge of, and the confidence to deal with government agencies, school principals, parents and teachers within their own countries

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
	NPM has sufficient seniority to speak with authority on behalf of Ministry or Department	<b>NPM has existing relationships with stakeholders within the education system</b>	

Justification:

The NPM's experience with NLSA and Examinations have developed extensive personal relationships with key stakeholders.

Description: NPM knowledge of language of assessments

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

SABER-SA-ILSA: EC3

Latent	Emerging	Established	Advanced
	The national/system co-ordinator or other designated team member is not fluent in the official language(s) of the assessment	<b>The national/system co-ordinator has immediate access designated team members that are fluent in the official language(s) of the assessment</b>	The national/system co-ordinator is fluent in the official language(s) of the assessment

Justification:

The NC staff are largely representative of the Copperbelt and Lusaka regions, but the network of item and test developers provides access to all linguistic groups in the country.

Description: NPM's level of oral and written communication skills in English for meetings and communications with the OECD Secretariat and with the International Contractor

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
	NPM is sufficiently fluent in English to understand general concepts and non-technical issues	NPM is sufficiently fluent in English to understand and take a position on issues presented by OECD Secretariat or International Contractor	<b>NPM is sufficiently fluent in English to argue a specific perspective or position and represent complex or novel issues</b>

Justification:

The NPM and all NC staff are fluent in professional and colloquial spoken and written English.

Description: NPM's previous work experience in an education system and experience in educational assessment

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
		NPM is familiar with education system in a professional context	<b>NPM has previous experience working within the education sector</b>

Justification:

The NPM has worked in the education sector for over a decade.

Description: NPM's General computing skills (e.g., Microsoft Office suite, WebEx and secure FTPs)

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
Use of computers is primarily for email and internet and basic document reading/reviewing functions	Uses computers for email and internet use as well as producing and editing basic documents and presentations in standard word processors and spreadsheets	In addition to email, and internet, uses formatting conventions, edit/review functions and other shared authorship functions in office software	<b>Uses email, internet and file sharing applications with versioning and complex formatting (e.g., document merges, conversion of file types) and/or works in a secure networked file sharing environment</b>

Justification:

NPM is familiar with network applications, file sharing and advanced document editing functions.

Description: English proficiency of NPM

Programme Output: Identify peer-to-peer learning opportunities regarding PISA participation with other countries and development partners

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
NPM has no English proficiency	NPM can limited English fluency (i.e., passive communication with basic productive communication)	NPM has mastery of English as a second language but operates professionally primarily in another language	<b>NPM is fluent or operates professionally in English</b>

*Project Requirement 4. Definition of criteria for stratification of school and student samples*

Description: Specialised skill for scientific probability sampling

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 9.3, PISA Technical Standards: Standard 16.1, PISA Technical Standards: Standard 17.3, PISA Technical Standards: Standard 1.3, PISA Technical Standards: Standard 1.4, PISA Technical Standards: Standard 1.5

Latent	Emerging	Established	Advanced
Survey design staff have experience with convenience sampling	Survey design staff have experience drawing simple random samples	<b>Survey design staff have experience designing self-weighting or unweighted complex samples (multi-stage clusters and stratification)</b>	Survey design staff have experience designing complex samples with appropriate design weights and/or performed non-response adjustments to analysis weights

Justification:

National assessment samples are complex (multi-level, stratified) but historically there have been no design weights calculated for or used in the analysis of the data. The current (2014) national assessment will be the first to have a complete implementation of a complex survey design, including the use of consistent design weights.

Description: Quality of replacement sample

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 1.9

Latent	Emerging	Established	Advanced
There is no replacement sample in the survey design	The replacement sample only allows convenience sampling	The replacement sample is random	<b>The replacement sample provides random assignment of matched replacement(s) for each school</b>

Justification:

Although school level response is high, where non-response does occur, the replacement school is drawn randomly from within the same stratum. If one case where a replacement school was accidentally selected for convenience, its data were subsequently removed from the sample data.

*Project Requirement 10. Communication and co-ordination with international contractors for the selection of the student samples in each school*

Description: Management of linked data files

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 12.1, PISA Technical Standards: Standard 12.5, PISA Technical Standards: Standard 16.2, PISA Technical Standards: Standard 17.3, PISA Technical Standards: Standard 17.5

Latent	Emerging	Established	Advanced
Data processing staff have been given instructions on data management protocols	Data processing staff have experience sorting or extracting data from files with primary keys or unique identifiers	<b>Data processing staff have experience performing data merges using primary and foreign keys</b>	

Justification:

Processing of NLSA and examinations data requires separate processing and subsequent merging of data files using common identifiers.

Description: Data manipulation skill: manipulating data structures

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 12.5, PISA Technical Standards: Standard 16.2, PISA Technical Standards: Standard 17.5, PISA Technical Standards: Standard 12.2, PISA Technical Standards: Standard 17.2

ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS 70

Latent	Emerging	Established	Advanced
	Staff have experience with single format data (e.g., Excel, SPSS) sorting records and adding/computing new variables	<b>Staff have experience with single format data (e.g., Excel, SPSS), experience importing and exporting between proprietary formats using built-in software functions</b>	Staff have experience constructing or parsing proprietary formatted data files and text-based data files with defined formats

Justification:

Data manipulation tends to rely on data formatting conventions specific to a small suite of data management tools used within the ECZ.

Description: Data manipulation skill: fluency with statistical software (e.g., SPSS, SAS)

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 12.5, PISA Technical Standards: Standard 16.2, PISA Technical Standards: Standard 17.3, PISA Technical Standards: Standard 17.5, PISA Technical Standards: Standard 17.2, PISA Technical Standards: Standard 12.3

Latent	Emerging	Established	Advanced
There is no data management activity	Data management consists of simple spreadsheets and data entry	<b>Data management is performed mainly using point-and-click menus</b>	Data management is performed using syntax files

Justification:

Processing of Examinations data uses syntax files, but LSA data tends to be more idiosyncratic with less transparency. No data processing syntax is available for any previous LSA's.

*Project Requirement 14. Establishing a training plan with key staff of the NC to attend training sessions*

Description: NPM's and NC's Familiarity with PISA skill ontology / framework

Programme Output: Enhanced cognitive assessments for below-baseline proficiency levels in PISA

References:

NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
	<b>NC staff have experience instructing students with a wide range of skill profiles</b>	NC staff have experience developing programs for salient groups of student skills	A common framework is used by NC staff for identifying skill determinants and dependencies for different learning objectives

Justification:

Many ECZ staff are experienced teachers and have experience in the design of curriculum and educational materials. However, there is very limited exposure to the broad set of skills measured in the PISA framework.

Description: NC's understanding of item response theory

Programme Output: Enhanced cognitive assessments for below-baseline proficiency levels in PISA

References:

PISA for Development Document, NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
	NC staff have experience or familiarity with statistics and classical test theory	<b>NC staff have used item response theory in limited context (e.g., scaling dichotomous responses)</b>	NC staff have experience with multiple item response models (e.g., polytomous, Rasch, 2PL, 3PL)

Justification:

ECZ staff have been using item response theory in the design of examinations and the design and analysis of the current national LSA.

Description: NC's test development skills

Programme Output: Enhanced cognitive assessments for below-baseline proficiency levels in PISA

References:

PISA for Development Document, NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
NC staff have no experience developing tests or test items	NC staff have experience developing tests or test items using well-defined test specifications	NC staff have used classical test theory to examine item and test difficulty and discrimination/reliability and select appropriate items	<b>NC staff use multivariate statistics to examine test dimensionality, item bias or differential item functioning, and test information and increase the accuracy and relevance of tests</b>

Justification:

The ECZ has been using multivariate statistics in a lay capacity to analyse and improve the psychometric quality of public examinations and the current national LSA.

*Project Requirement 28. Co-ordination of appropriate enhancements/adaptations/translations of instruments, manuals and guides, and field trial and verification process with international contractors*

Description: Fidelity of administration in local contexts

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 5.1, PISA Technical Standards: Standard 5.2, PISA Technical Standards: Standard 4.4

Latent	Emerging	Established	Advanced
Translators or staff responsible for adaptation have translated data collection protocols	<b>Translators or staff responsible for adaptation have been trained in data collection procedures</b>	Translators or staff responsible for adaptation have participated in data collection	Translators or staff responsible for adaptation have been trained in PISA data collection procedures

Justification:

The ECZ staff responsible for instrument adaptation will have previously monitored data collection for LSA or public examinations. They will be trained with the inaugural PISA for Development implementation.

Description: Quality of training for data collection

Programme Output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References:

PISA Technical Standards: Standard 6.1

Latent	Emerging	Established	Advanced
	Data collection staff have been trained in data collection protocols	<b>Data collection staff have participated in data collection in previous survey or training but received no guidance or feedback regarding the effectiveness or appropriateness of method</b>	Data collection staff have been monitored during previous or mock data collection and have received feedback on their adherence to protocols during previous data collection

Justification:

Feedback on data collection procedures has historically been given in summary at a management level, rather than based on individual performance as feedback to data collectors.

Description: Adequacy of translator assessment background

Programme Output: Enhanced cognitive assessments for below-baseline proficiency levels in PISA

References:

PISA Technical Standards: Standard 4.2

Latent	Emerging	Established	Advanced
Translators or staff responsible for adaptation have no experience translating or adapting test items	Translators or staff responsible for adaptation have background or experience with education or psychology	Translators or staff responsible for adaptation are experienced teachers	<b>Translators or staff responsible for adaptation are also professional item writers</b>

Description: Translator knowledge of PISA framework

Programme Output: Enhanced cognitive assessments for below-baseline proficiency levels in PISA

References:

PISA Technical Standards: Standard 4.2

Latent	Emerging	Established	Advanced
<b>Translators or staff responsible for adaptation have no experience or knowledge of PISA framework</b>		Translators or staff responsible for adaptation are knowledgeable about the PISA assessment framework	Translators or staff responsible for adaptation can reliably predict the difficulty of PISA test items

Description: Appropriateness of instrument translation and adaptation to local contexts

Programme Output: Enhanced contextual questionnaires and data-collection instruments

References:

PISA Technical Standards: Standard 4.3, PISA Technical Standards: Standard 5.1

Latent	Emerging	Established	Advanced
	Translators have limited knowledge of common usage of testing languages	Translators have academic (i.e., foreign) knowledge of testing language usage in local contexts	<b>Translators or staff responsible for adaptation have functional knowledge of dialects or language in different contexts</b>

Description: Fidelity of instrument translation and adaptation to local contexts

Programme Output: Enhanced contextual questionnaires and data-collection instruments

References:

PISA Technical Standards: Standard 4.3, PISA Technical Standards: Standard 5.2

Latent	Emerging	Established	Advanced
<b>Translators or staff responsible for adaptation have no experience with research</b>		Translators or staff responsible for instrument adaptation have experience with survey research or experience with questionnaire design	Translators or staff responsible for instrument adaptation are knowledgeable about the constructs measured by PISA questionnaires (e.g., SES, school climate, engagement with learning, etc.)

*Project Requirement 31. Planning of staffing and resources (technical and material) needed for coding of test booklets and contextual questionnaires and data management*

Description: Response coding expertise

Programme Output: Enhanced cognitive assessments for below-baseline proficiency levels in PISA

References:

PISA Technical Standards: Standard 11.1

Latent	Emerging	Established	Advanced
Response coders have no experience with student work	Response coders have experience manually scoring student work	<b>Response coders have experience manually coding student responses in large-scale assessments</b>	Response coders are recalibrated periodically based on results of reliability analysis (see Standard 11.3)

Justification:

PISA for Development coding will draw mainly from a large pool of experience markers who have been used for previous examinations and LSA.

## ANNEX B: TERMS OF REFERENCE

This annex includes the introduction and statement of work sections of the OECD Terms of Reference for CNA and CBP.

### *Introduction*

OECD is seeking to enhance its Programme for International Student Assessment (PISA) to make it more relevant for developing countries. Through its PISA for development project, adapted survey instruments will be developed to allow developing countries to assess 15-year-olds competencies in the key subjects of reading, mathematics and science, while at the same time providing the countries with an opportunity to build their capacity to manage student assessment and apply the result for system improvement .

### *Statement of Work*

These terms of reference (ToR) cover the work to be carried out by three consultants (each hired with the same ToR) as part of the PISA for Development project. The purpose of the work is to ensure that for each of the 5-7 participating countries<sup>1</sup> the following deliverables are completed in a timely and accurate manner in order to support the effective implementing of the project:

- A. Capacity Needs-Assessment (CNA) report for each participating country focusing on the institutional and the student assessment areas related to the implementation of the PISA for Development project.
- B. Capacity-Building Programme (CBP) prepared for each of the participating countries that are fully costed and directly address the needs identified in the CNA for each country.

In order to produce these two deliverables the consultants will be required to complete the necessary tasks involved in co-ordination with the project team at the OECD and in-country with each of the participating countries. The tasks associated with each deliverable are described in the following three sub-sections.

#### *Deliverable A: capacity needs assessment reports*

In the context of the project's objectives, the roles and responsibilities for National Centres (NC) and National Project Managers (NPM) and the capacity building priorities identified by the countries, the consultants will undertake a capacity needs assessment (CNA) for each of the participating countries.

The benchmark for the CNA will be the necessary capacity required in the context of the PISA for Development project, which is defined as:

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1. The participating countries are likely to include: Cambodia, Ecuador, Guatemala, Punjab province of Pakistan, Senegal, Sri Lanka and Zambia. The participating countries together with their National Centres and National Project Managers will be confirmed by 30 November 2013.

- The ability of the individuals and institutions responsible for the project in each country to perform the necessary functions (as set out in the roles and responsibilities for NC and NPM), solve the likely problems that will arise during implementation and set and achieve project objectives in a sustainable manner.

Countries may desire future capacities for student assessment that go beyond this necessary ability and include competencies in, for example, item development, assessment methods and analysis of assessment data to support policy. In these cases the consultants will reflect the countries' desire in a broader statement of capacity than the one indicated at para. 5 above, but will ensure that these aspirations are rooted in a realistic appraisal of what is possible to achieve in a three year timeframe and given the capacity assets that countries are starting with.

The CNA for each country should be based on existing recent and relevant assessments of capacity for student assessment that may have been undertaken and a clear analysis of desired future capacities (as summarised at paras. 5 and 6 above) against current capacities. The assessment should also be couched in the broader context of the participating countries' education sector policies, strategies and priorities generally and their strategies for strengthening student assessment in particular. The assessment should generate an understanding of capacity assets and needs, which in turn should lead to the formulation of a capacity building programme (CBP, Deliverable B).

The CNA is integral to the project planning and programming process, as the understanding of capacity assets and needs will serve as key inputs into the formulation of the capacity building programme. The consultants will identify the indicators to be used to measure capacity assets that will serve as a foundation for the subsequent monitoring and evaluation of capacity development. The consultants will develop an overall capacity assessment framework to facilitate the task and this will be composed of three dimensions:

- the enabling environment, particularly the Ministry of Education and other users of the results of the PISA for development project;
- organisation, particularly the National Centre and any sub-national institutions that will be involved in the project; and
- individual, especially the staff of the National Centre and related organisations, in particular the National Project Manager and his/her team.

In undertaking this task the consultants should ensure that at the outset of the activity the capacity assessment objectives and expectations of the country are clarified in the context of the aims and objectives of the PISA for development project and the resources available and that the key stakeholders are identified and engaged throughout the process. In addition, the consultants should adapt the capacity assessment framework to local needs and priorities in each country, in particular the capacity asset indicators that are used. The assessment of existing capacity levels should be transparent and the summarising and interpretation of results should be clearly communicated to key stakeholders prior to the drafting of the capacity assessment report for each country.

In preparing the capacity assessment report for each country, it will be important for the consultants to include the process and methodology adopted, the stakeholders (internal/external) that were consulted, their perspectives and insights on the organisation housing the National Centre, a review and analysis of quantitative and qualitative information, and the resulting capacity development priority needs. The results should be reviewed, validated and enhanced through consultation meetings with the main stakeholders in each country and the OECD, prior to finalisation.

*Deliverable B: capacity building programmes*

On the basis of the CNA reports, the consultants should complete and agree with each partner country and OECD a CBP covering the three years of project implementation, taking care to ensure that training and capacity building opportunities are costed and scheduled in a timely and effective way. Specifically, the consultants are tasked to design a programme that will equip the National Centre, the National Project Manager and other related actors with the capacity they require to implement the PISA for Development project successfully and, in addition, respond to particular priorities for student assessment that the participating countries identify beyond those necessary for project implementation, such as assessment methods, item development, analysis and use of data to support policy development and student assessment for curriculum reform.

Technical capacity-building, institution building and knowledge-transfer opportunities have been clearly identified as part of the implementation of the project with each of the participating countries and development partners. These opportunities include, but are not restricted to, the following:

- Procedures for and verification of translations and adaptations of assessment materials (different languages and/or different adaptations of same language versions).
- Sample design and selection, including population coverage, exclusions and response rates.
- Field administration of the assessment and data collection.
- Quality assurance of the field administration and data collection.
- Marking and coding of open-ended and multiple-choice items (cognitive and questionnaire responses).
- Data entry, cleaning and verification.
- Scaling of results using IRT models (cognitive and contextual).
- Calculation of specific indices (e.g. ESCS gradients).
- Calculation, analysis and calibration of item parameters (item difficulty, point-bi-serial indices and other psychometric coefficients for possible data entry errors, translation or other problems)
- Compilation of data sets for analysis (student responses and scaled scores).
- Exploitation of PISA data sets for analysis (country-specific and international data sets).
- PISA Assessment Frameworks in Mathematics, Reading and Science (basis of the content, competencies and skills assessment).
- Item development process (based on PISA frameworks).
- Design and drafting of analytical report following PISA country report models.
- Specific technical topics: plausible variables, IRT models, conditioning, scaling, DIF (Xgender, Xcountry and Xlanguage), student and school weights.

In some cases, development partners may establish extended engagement with participating countries for technical assistance to support institutional capacity building and implementation that supports the PISA participation process and the consultants will need to take account of these contributions in the CBP.

The CBP for each country should respond to the needs identified and consist of initiatives and activities that build the foundation for capacity development as well as build momentum for the implementation of the project, the use of the results of student assessment and the achievement of the desired future capacities in a timely fashion. The CBP should also complement and, where possible, be integrated with the participating countries' broader strategies for student assessment at all levels of their education systems.

The CBP should include indicators to measure progress in the implementation of capacity development over the three years of the project. The programme should have a clear baseline and targets for each year of implementation should be established for each indicator. The process of monitoring progress should also allow the refinement of capacity development response strategies and potentially the design of new initiatives to address evolving needs. The CBP should be accurately costed in the context of the PISA for development international costs budget, the in-country project costs budget of each country and the additional development partner support that may be available in each country, beyond the project funding (as discussed in paragraph 12).

## Capacity Needs Analysis Report: Zambia

PISA for Development is an initiative of the OECD and development partners that aims to identify how its Programme for International Student Assessment (PISA) can best support evidence-based policy making in emerging and developing economies – and contribute to the UN-led definition of global learning goals for the post-2015 agenda. In addition the project will help to build country capacity in assessment, analysis and use of results for monitoring and improvement among participating countries. Zambia is one of seven countries participating in the project and the Ministry of Education, Science, Vocational Training and Early Education, through the Examinations Council of Zambia, is responsible for the project in the country. This report presents the results of an analysis of Zambia in respect of its capacity for managing large scale student assessments, such as PISA.

The results of this report are being used to design a capacity building plan for Zambia that will be implemented by the OECD, its contractors, the Ministry of Education, Science, Vocational Training and Early Education and the Examinations Council of Zambia through the PISA for Development project.