PISA FOR DEVELOPMENT

CAPACITY NEEDS ANALYSIS:
PANAMA

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PISA FOR DEVELOPMENT CAPACITY NEEDS ANALYSIS REPORT: PANAMA

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1. Introduction and background

PISA for Development (PISA-D) is an initiative of the OECD and its 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 country capacity required in the context of the PISA-D 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 the PISA National Centre [NC] and the National Project Manager [NPM]), solve the likely problems that will arise during implementation and set and achieve project objectives in a sustainable manner.

Countries may desire 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-D's implementation timeframe and required activities.

This document describes the implementation of the CNA framework for PISA-D in the Panamanian context. The framework itself is derived from the PISA project requirements, which are outlined in the PISA National Project Manager (NPM) Manual (OECD, 2012a), the NPM Roles and Responsibilities (OECD, 2012b) and the project outputs in PISA-D (OECD, 2013). The framework is structured according to three dimensions: 1) enabling environment, 2) organisation and 3) individual. The framework is designed to assess the capacity of the countries to achieve the five project outputs of PISA-D, which are:

- enhanced contextual questionnaires and data collection instruments

- enhanced descriptive power of cognitive assessment instruments in reading, mathematics and sciences, at appropriate skill levels within the PISA cognitive framework

- an approach, including a methodology and analytical framework, for including out-of-school 15-year-olds in the assessments

- increased country capacity in assessment, analysis and use of results for monitoring and improvement

- learning opportunities among peers from other countries and other developing countries.

The CNA is designed to generate an understanding of capacities achieved and needed, which, in turn, will lead to the formulation of a Capacity Building Plan (CBP). The framework for capacity building assessment utilises elements of the Systems Approach for Better Education Results (SABER) questionnaires developed by the World Bank to assess the development of large-scale assessment systems (Clarke, 2012); as well as the PISA technical standards as the benchmarks for assessing Panama's assessment system and capacity for managing National and International Large-Scale Assessments (NLSAs and ILSAs). 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 CBP. The tool used to enter data into the framework is online at: https://polymetrika.org/ILSA/.

The information summed up in this report was gleaned from a reading of appropriate documents and extensive interviews with the staff members and other officials from the Panama Ministry of Education (MEDUCA), particularly the PISA NPM, Mr. Jahir Calvo. In addition, Mrs. Marelisa Tribaldos, Panama's main PISA PGB representative, staff from the National Directorate for Education Assessment, and many users of the data and information produced by learning assessments were also interviewed. The interviews took place over the course of two visits to Panama by the OECD consultant. The first visit coincided with the launch in Panama of PISA 2018 and PISA-D, between 18 and 29 April 2016; and the second visit was between 18 and 29 August 2016. After the visits, the needs analysis was finalised through emails and virtual meetings.

1.1 General conclusions

It can be said that Panama is initially well-positioned to implement PISA 2018 and the PISA-D out-of-school component. The country has taken part successfully in PISA 2009 and in the two most recent administrations of the Latin American Laboratory for Assessment of the Quality of Education (LLECE): the Second Regional Comparative and Explanatory Study (SERCE) and the Third Regional Comparative and Explanatory Study (TERCE). Panama's purpose in taking part in PISA-D is to assess 15-year-olds that are out-of-school or still in primary school (Strand C of PISA-D), and in order to benefit from the implementation support and capacity building afforded by the programme.

1.2 National assessments in Panama

In addition to the international assessments already mentioned, several national assessments have been conducted in Panama, as shown in the table below.

Table 1.   Learning assessments conducted on samples in different grades according to subject

Year	Grades	Subjects
1998	3rd and 6th	Spanish, Mathematics and Natural Sciences
2000	6th	Spanish, Mathematics, Natural Sciences and Social Sciences
2001	3rd, 6th and 9th	Mathematics, Spanish and Natural Sciences
2005	3rd, 6th and 9th	Spanish, Mathematics, Natural Sciences and Social Sciences
2005	12th	Spanish, Mathematics and English
2008	3rd and 6th	Spanish, Mathematics and Natural Sciences

The tests in 2000 were funded by the Education Development Project (PRODE). In this case, it was specified that for the four subjects assessments would be conducted on comprehension, composition, analysis and problem-solving skills with a specific focus on abilities and criteria. In 2001 it was specified that the assessment would be conducted on skill and ability accomplishment levels in the various areas. In a presentation to deliver results given in 2008 it was stated that the data would be processed using item

response theory (IRT) in order to draw comparisons. Nevertheless, very little is known about this within MEDUCA.[1]

In 2016, the field trial and the main test for the census test known as *Diagnóstico* (Diagnosis), for 3rd grade in reading, was implemented. It was conducted as preparation for implementing the *Aprende al máximo* (Learn as Much as Possible) project. During 2017, tests will be administered to 3rd and 6th grade.

1.3 System and institutional issues

The MEDUCA assessment structure has faced difficulties when it comes to taking advantage of the extensive experience in assessment owing to its lack of staff and notable rotation thereof. Interest in assessment has only recently been re-ignited in the Ministry and most of those involved in previous experiences are no longer working at the MEDUCA assessment structure. Furthermore, most assessment work is outsourced and capacities are not consolidated within this structure.

The MEDUCA team working in the area of educational evaluation has expanded over the past two years; however, it still lacks the size needed to address the various duties incumbent upon it. In order to construct items, the team relies on support from supervisors and teachers from the educational system. This year, counselling and training has been provided by the University of the Andes in Colombia.

While student assessment is mentioned in the Ministerial Decree 423 (year 2002) and in the Ministerial Resolution 174 (year 2017), the periodicity of these assessments is not stipulated there and there is no medium-term schedule of national and international assessments. Accordingly, assessment depends on whichever government is in power, so it is subject to the vicissitudes of successive political changes in governments. However, the primary pillar for external, standardised large-scale assessment is social and political demand: If this demand exists and there are sufficient resources, and if the assessments are deemed technically valid and reliable, any government would have a difficult time cancelling such a policy.

The experience of the international and national assessments performed in Panama to date leads one to consider the need and importance of institutionalising assessment activities in a broader system or strategy. One option for this would be to strengthen the educational evaluation capacities within the MEDUCA assessment structure, which offers the advantage that it would benefit from the scarce experience and assessment knowledge in the country. Another option that currently has more support in Panama is to create an independent assessment institute, such as has been done in several countries in Latin America. The major advantage of the institute option is that it would be independent and not attached to whichever government is in power. However, it would require setting up an administrative organisation and assure that technical capabilities of human resources in the country are present and strengthened, which nowadays is a weak point in the country. Both options, creating a new institute and strengthening the technical capacities of the MEDUCA assessment staff, would require a substantial volume of resources, in addition to technical and operating expenses.

While there is strong political will to create the independent Assessment Institute, the plans for this are currently in discussion, and no date has been set for when it would start functioning. It is the conclusion of this report that in the interim period before the Assessment Institute is designed and operationalised, Panama should focus on strengthening the capacity of the current teams involved in learning assessment in MEDUCA, including the established PISA NC. This report also strongly recommends that the Assessment Institute must benefit of the current capacities of the MEDUCA assessment structure and those capacities built in the months and years ahead. This CNA and the CBP that has been developed subsequently have been based on an assumption that this will indeed be the strategy adopted by Panama in respect of the institutional home for assessment in the country over the medium term.

1.4 Structure of the report

In addition to this first section, the structure of this report incorporates three further sections. Section 2 includes a description of the needs assessment methodology together with a presentation of the needs assessment framework. Section 3 summarises the needs assessment for Panama with respect to the five PISA-D project outputs, the PISA Technical Standards and the SABER benchmarks. Section 4 describes the capacity building priorities that arise from the needs analysis. The detailed capacity needs analysis is presented in Annex A.

2. Methodology

The development and application of the CNA framework in Panama followed three distinct phases. The first phase involved the analysis of primary documents in order to develop an initial set of 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 framework in the Panamanian 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 preparation of the draft report with a view to facilitating the development of the CBP. 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 from the NC and MEDUCA in response to the initial analyses. The following sub-sections discuss each of these phases in greater detail.

2.1 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-D products. Each element is defined by an overall description and descriptions of two to four levels of development (as applicable to each element).

The structure of the framework is hierarchical, with each PISA-D capacity element nested within the three main dimensions:

- The enabling environment, encompassing the legislative context and culture that facilitates the implementation of the project, and the stakeholders who should make use of the results

- Organisation, encompassing the NC and any institutions that are involved in the implementation of the project

- Individual, encompassing the staff of the NC and related organisations, in particular the NPM(s) and his/her team.

Within each dimension, the elements are further organised according to the output for which the capacities are needed and in the order in which they are first needed. The PISA-D requirements are an extension of the main PISA project milestones; they roughly follow a sequence beginning with establishment of the NC and ending with dissemination of results to stakeholders to support decision making. They are defined as follows:

- Designation of NPM and establishment of NC

- Compilation and confirmation of information on schools and students for the definition of the assessment population, stipulation of languages in which PISA will need to be implemented and definition of criteria for stratification of school and student samples

- Establishment of security protocols for the NC and for national sub-contractors

- Co-ordination of enhancements/adaptations/translations of instruments, manuals and guides, and field trial and verification process with international contractors

- Decisions taken on the scale of national adaptations and number of assessment languages and co-ordination of enhancements/adaptations/translations of instruments, manuals and guides, and the field trial and verification process with 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 conjunction with schools

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

- Planning of the quality assurance process so that Quality Monitors visit a sample of schools to observe and document quality of implementation

- Planning of staffing and resources (human and material) needed for coding of test booklets and contextual questionnaires and data entry

- Establishment of a training plan with key staff of the NC to attend training sessions

- Preparation and distribution of testing materials to schools in a secure fashion, ensuring materials arrive safely and without suffering damage or alterations

- Suitable monitoring of school and student response rates in co-ordination with international and national contractors

- Sample of the student testing booklets that were coded will be submitted to the international contractor for an International Coder Review (ICR)

- Review of the database and the draft analysis plans for the national report by the NPM in consultation with educational authorities, the international contractors, the OECD Secretariat and relevant development partners

- Provision of input and guidance from the NPM with regards to the policy priorities that should help determine the content and analysis presented in the country report

- Development of a dissemination plan of participation in PISA-D and the relevant results from the project by the NPM

- Production of reporting documents and involvement of the media

- Dissemination of results to general audiences

- Dissemination of results to key specific stakeholders.

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

In case further information is required, each element also refers to one or more primary documents listed below.

2.2 Using the framework

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

The rubrics are reviewed with stakeholders to identify the current status of each element. The information is collected using appropriate needs assessment methodologies such as questionnaire or interview. The completed rubrics also include a 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 are added to the framework. If a new element is added, it is indexed by the structure defined and the textual descriptions of the levels follow the normative descriptions.

Preliminary target capacity levels are identified for each element and basic information for planning capacity building is completed along with the targets. Responsibility for developing specific capacity elements is assigned to different resources, along with allocation of person-time, money and expected start/end dates. This information is used to develop the CBP and prioritise the different capacity building goals.

2.3 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-D context.

- PISA-D document: This document outlines the broad goals of PISA-D.

- PISA National Project Manager (NPM) Manual: This document outlines the sequence of activities, and describes the recommended resources required for PISA implementation.

- SABER – Student Assessment: The SABER framework describes the broader context of student assessment in a country. In particular, the CNA framework focussed particularly on large-scale national and international assessments.

These documents were added to the PISA-based documents to expand on the requirements for participation on examining the broader enabling environment. 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.

The first stage of analysis examined each of these documents from the dimensions of the enabling environment, organisation and individual to identify the required elements of each dimension that are necessary to produce the PISA-D project 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 requires several capacity building activities, the activities are similar enough to draw from similar human or physical resources and affect the same group of country-level stakeholders.

For each of these preliminary programme elements, development levels were defined by following the approach established by the SABER instruments. Using a priori assumptions about the key features likely to be found at the four SABER levels, descriptions were defined for each level (as applicable) for each 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.

2.4 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. During PISA-D as new elements have been identified and included in the framework, these normative descriptions have guided the textual descriptions 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 2. 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 3. 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 4.   Individual ratings: Normative definitions used for each element

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

2.5 Information collection activities

The information collection begun during the first visit in parallel to preparations for the PISA launch, essentially based on interviews with MEDUCA staff and officials. On this occasion, the only individual solely devoted to PISA was the NPM who was unavailable due to unforeseen circumstances. The remaining staff from the MEDUCA assessment structure were given some explanatory PISA presentations and certain queries were clarified. Also on this visit they were told what the CNA, the CBP and the Project Implementation Plan (PIP) consisted of. On the second visit, more staff had been hired in the MEDUCA assessment structure, and three of those individuals were assigned specifically to the PISA NC. A group meeting and other occasional meetings were held with those individuals also.

Moreover, meetings were held with the National Director for Education Assessment, Mrs. Gina Garcés; and with the advisor from the Ministry, Mrs. Marelisa Tribaldos, who in turn is the Panama representative to the PGB.

Table 5.   Staff in the MEDUCA assessment structure interviewed

Name	Educational levels	Position
Gina Garcés	Master's degree in Education Assessment and Research Methods	National Director for Education Assessment
Itzel Pinzón	Teacher of Natural Sciences	Central Panama evaluation regional liaison officer
Lilia Baysa	Teacher of Spanish	West Panama evaluation regional liaison officer
Irma Rodríguez	Teacher of Spanish	Technician from the Institutional Assessment Unit, National Directorate for Education Assessment
Boric Cedeño	Teacher of Spanish	Technician from the Research and Studies Unit, National Directorate for Education Assessment
Narciso Bastos	Teacher of Social Sciences	Technician from the Research and Studies Unit, National Directorate for Education Assessment
Janina Castro	Sociologist	Coordinator from the Research and Studies Unit, National Directorate for Education Assessment
Elyna Sánchez	Grade-level teacher	Coclé Province evaluation regional liaison officer
Jahir Calvo	Bachelor's degree in Electromechanical Engineering, Postgraduate degree in Top Management, Postgraduate courses in Higher Teaching, Master's degree in Higher Education Research and Development	PISA NPM Coordinator of the PISA National Centre
Zahic Alvarez	Teacher of Ethical Philosophy and Values	Performance Assessment Unit coordinator, National Directorate for Education Assessment
Genoveva Iglesias	Industrial engineer	Technical support for PISA 2018, PISA National Centre
Luis Enrique Ávila	Industrial engineer	Technical support for PISA-D, PISA National Centre
Jannett Ho[2]	Teacher of Spanish	Spanish Network coordinator

During the first visit, two meetings were held with staff from the National Directorate for Education Assessment. The first meeting (22/04/16) was attended by some evaluation regional liaison officers along

with the Spanish Network coordinator. The second meeting (27/04/16) was solely attended by individuals working in Panama City.

Moreover, a meeting was held with some teachers and supervisors of Mathematics who take part in the Mathematics Network.[3] This network (along with the Spanish and Science networks) was set up in order to draft a manual for item development, a project in process that seeks to raise awareness among teachers and students of various types of items. To do so, technical counselling was provided by experts from the University of the Andes, Colombia. The individuals who attended this meeting are listed in Table 6 below.

Table 6. Individuals in attendance at the Mathematics Network meeting

Name	Position
Iris Montenegro	MEDUCA Mathematics supervisor
Genarina Ceballos	MEDUCA Colón Mathematics supervisor
Miguel A. Robles	MEDUCA Los Santos Mathematics supervisor
Yordis González	Teacher of Mathematics, Nägbe-Buglé county
Roxana Roux	Chiriquí regional supervisor
Rita Villarroel	San Miguelito supervisor
Manuel Arias	Coclé supervisor
José A. González	ENYDA teacher
Victor Sánchez	M. F. Beckulon teacher
Moisés Ramírez	National supervisor for private education
Iquela de C. Vienbenido	Herrera Mathematics supervisor
Nelson Sanjur	West Panama Mathematics supervisor
José de la Rosa	Mathematics supervisor
Jusentino Vásquez	East Panama Mathematics supervisor
René César	Darién Mathematics supervisor
Gibzca de Vernier	National Mathematics supervisor

During the two visits, interviews were also held with various individuals with an interest in education and, specifically, in PISA. In addition, a group interview was organised with teachers from the Education Faculty.

Table 7. Stakeholders interviewed

Name	Institution	Position
Marcela Paredes de Vásquez	MEDUCA	Minister of Education
Marelisa Tribaldos	MEDUCA	Ministerial advisor, PGB representative
Melisa Wong Sagel	OEI	Resident representative, national director
María Heller	National Department for Sciences, Technology and Innovation (SENACYT)	Advisor for learning innovation, Learning Innovation Directorate
Carlos Staff S.	MEDUCA	Deputy academic minister for education
Marilú Salvador	MEDUCA	National director for general primary education
Cynthia M. Hobbs	Inter-American Development Bank (IDB)	Education specialist
Práxedes de León	MEDUCA	Chief of programming and investments
Yadicel Cedeño	MEDUCA	Statistics team
José Antonio Frías G	MEDUCA	National syllabus director
Nivia Rossana Castrellón	Unidos por la Educación	Vice-president
Laura Paviot	IDB	IDB consultant for national dialogue
Migdalia Bustamante de Avilés	Faculty of Education Sciences of the University of Panama	Dean
Luzmila de Sánchez	Faculty of Education Sciences of the University of Panama	Postgraduate director and currently vice dean
Elisa Ríos	Faculty of Education Sciences of the University of Panama	Director for assessment during SERCE administration. Coordinator of the master's degree in Education Research and Assessment
Carmen Llamas	Faculty of Education Sciences of the University of Panama	Coordinator of the master's degree in Education Research and Assessment
Daysi Noemi Jackson	MEDUCA	Teacher and former employee from the National Directorate for Education Assessment
Lucas Rodríguez	University of the Americas (UDELA)	Academic advisor

During the first visit, meetings were undertaken at Fermín Naudeau school, which teaches pre-secondary (7th, 8th and 9th grade) and secondary education in both academic and vocational modes. Firstly, the head teacher of the school was interviewed and then two group meetings were held, one with teachers and the other with students. The tables below list the persons in attendance at those meetings.

Table 8. 10th grade teachers of interviewed in Fermín Naudeau school

Teacher name	Subject taught
Ernestina Morales	Spanish
Clorinda Montilla	Spanish
Circe D. Ungo	Sciences
Manuel Lombardo	Sciences
Javier Toribio	Mathematics
Nixia Ureña	Mathematics
Magaly Zelaya	Sciences
Beneranda Jiménez	Sciences
Jaime Romero	Deputy head teacher

Table 9.   10th grade students of interviewed in Fermín Naudeau school

Students
Christie Rangel
Idayra Mercado
Oliver Rodríguez
Ninoshka Espinosa
Vivian Ábrego
Daniel Peña
Anna Tirado

3. Summary of the capacity needs analysis

As stated above, Panama has engaged in a number of large-scale national assessments and three international assessments. At present, aside from Strand C of PISA-D, the country is taking part in PISA 2018 to draw comparative data with respect to PISA 2009. Nevertheless, there has been no systematic assessment of student learning and no thorough use has been made of the aforementioned assessments. Furthermore, between 2009 and 2014, with the exception of TERCE, assessments were suspended and ceased to constitute an education policy priority. This had a huge bearing on the MEDUCA assessment structure which lost a large body of its staff who were qualified at the time and, upon resuming duties, the Directorate was compelled to organise itself to do so anew.

In 2014, teachers were offered a substantial salary raise subject to performance and Decree 155 was issued which, in theory, highlighted institutional assessment. The current President of the Republic of Panama incorporated assessment into his programme, announcing that the country would resume participation in PISA. In early 2017 Panama's NC was created to co-ordinate the implementation of both PISA 2018 and PISA-D. This Centre depends directly on the Ministerial Office.

Figure 1. Organisational chart of the Ministry of Education
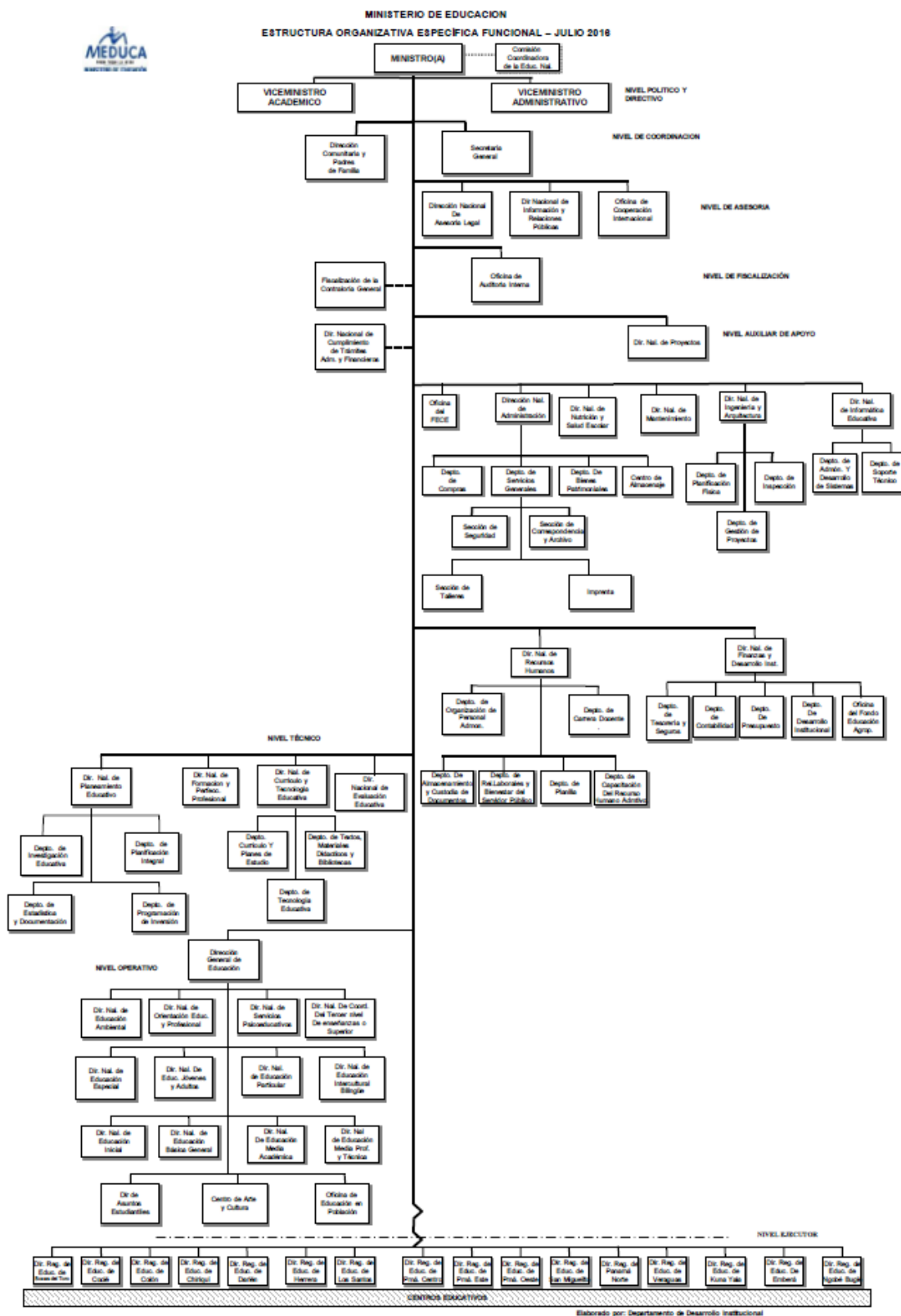
Source: www.meduca.gob.pa/sites/default/files/2016-12/organigrama_funcional_julio_2016.pdf

Figure 1 shows the functional organisational chart of MEDUCA in 2016.

Within the MEDUCA assessment structure we note the National Directorate for Education Assessment (established in 2002) and the PISA NC (established in early 2017 and devoted only for the PISA project).

The National Directorate for Education Assessment is shown in the MEDUCA's organisational chart as one of the more than 20 national directorates directly attached to the Ministry and vice ministries. Looking at its internal structure we note that it is simple and organised according to projects rather than by duties. The Directorate is in charge of Institutional (school) Assessment (including learning assessment, with the exception of PISA), Teacher Assessment and the Assessment of some Special Programmes. This Directorate is responsible for the national test and are also in charge of supporting some studies include the following:

- *Best practice study* incorporating results from the SERCE. This is qualitative and is based on classroom observation. An agreement will be signed with Santa María La Antigua Catholic University which will provide researchers to assist in the process. They will be funded by SENACYT.

- *TERCE national report*. This consists of an associated factors analysis, taking into consideration socio-economic variables. In this case, it was conducted by an expert from Unidos por la Educación; however, the Directorate did perform an analysis in parallel using SPSS.

- Standardised test item development manual.

At the time of the interviews, the PISA NC (devoted only for the PISA project) was embedded as an informal administrative unit in the National Directorate for Education Assessment. After the interviews had been concluded, the PISA NC in Panama was formally created by Ministerial Resolution 174 of January 12, 2017 as an independent administrative unit reporting directly to the Minister of Education, in order to facilitate the successful implementation of the PISA project and enhance its international nature, as stressed in the Article 1 of such Resolution. Although not yet shown in the functional organisational chart of the institution, the aforementioned Ministerial Resolution shows us its structure, as it can be observed in Figure 2.

Figure 2. Current organisational chart of the established PISA National Centre for Panama
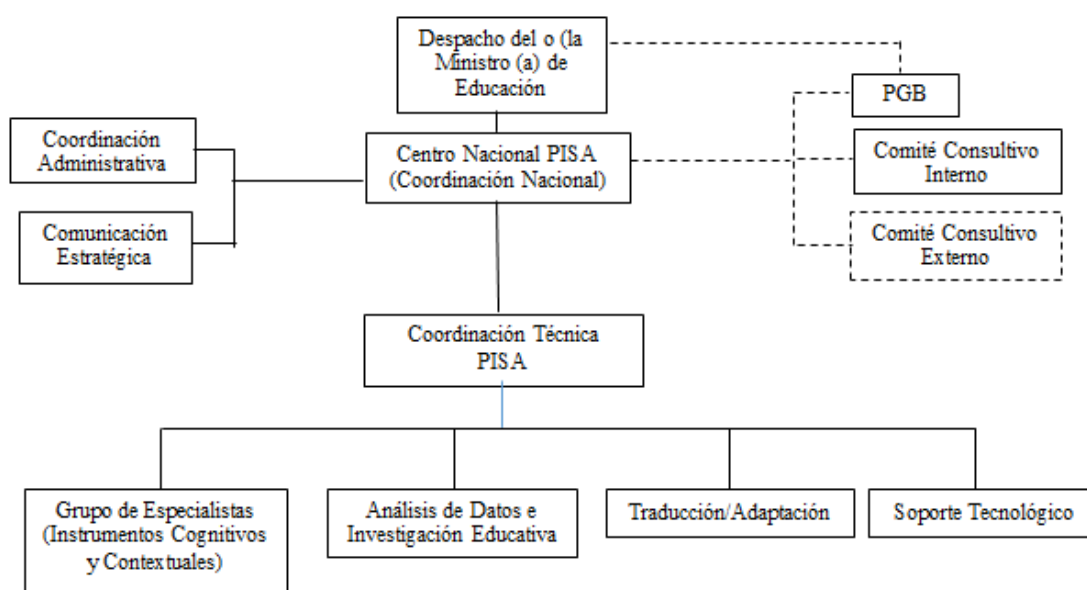
Source: MEDUCA, 2017.

The established PISA NC for Panama is the unit responsible for co-ordinating the national implementation of the PISA international test projects in all their phases, ensuring compliance with the international procedures and standards defined for this implementation to be of high quality.

It is noteworthy that the MEDUCA structure for assessment engages in significant, demanding duties nationally that it needs to fulfil using a staff workforce that is somewhat thin on the ground.[4]

There is political and social will to create an independent institute of assessment. The initiative is currently under discussion and has been considered within the current Commitment for Education developed by various sectors of society to define the educational agenda of the coming years, raising the issue of education to country policy, which would include the creation of this evaluation institute, whose functions still have to be established. It is this report's perspective that while this initiative becomes a reality, it is necessary to strengthen the capacities not only of the teams already working on the MEDUCA assessment area, but at the national level. Permanent and stable technical staff and an effective organisational structure for a centre of assessment must be guaranteed.

This needs analysis was performed considering the whole MEDUCA assessment structure, however, when possible, emphasis has been given to the recently formalised PISA NC. Also as noted earlier in this report, it will be essential to ensure that the staff of the PISA NC remains once PISA 2018 has been implemented, either as a continuing separate unit in MEDUCA responding to the Minister of Education or as part of the new institute of assessment – otherwise, many, if not all, of the capacity building benefits of Panama's participation in PISA 2018 and PISA-D will be lost.

3.1 General findings

Using the Polymetrika tool, the 112 capacity elements that are required for successful implementation of the PISA project are classified, as mentioned in the foregoing section. The result of this classification is set out in the table below.

Table 10. Classification of elements according to dimension

	Enabling environment		Organisation		Individual		Total	
Latent	4	8.5%	7	20%	7	25%	18	16.4%
Emerging	10	21.3%	5	14.3%	7	25%	22	20%
Established	21	44.7%	11	31.4%	10	35.7%	42	38.2%
Advanced	12	25.5%	12	34.3%	4	14.3%	28	25.5%
Total	47	100%	35	100%	28	100%	110	100%

The above table shows that the greatest capacity needs are in the Individual dimension, with 50% being classified as **latent** or **emerging**, and in the Organisation dimension, with 34% being classified as **latent** or **emerging**.

It should be noted that the main strength of Panama is to have enough resources given its expanding economy. Special consideration should be given to planning to prioritise and secure investments according to country needs. In addition to resources, there is an important support from authorities and civil society representatives, which will be very helpful for guaranteeing assessment stability in the long term.

3.2 Capacity assessment to improve contextual questionnaires and data-collection and implementation instruments

The team currently working at the MEDUCA assessment structure has received assistance, co-ordination and supervision from University of the Andes in Colombia in order to conduct administration of the national assessment field trial to make it possible to calibrate the questions and questionnaires produced, and test in the field the implementation of protocols and processes for the main administration of the national test. This support has included the processes of specifying and developing questions in Language and Mathematics for 3rd and 6th grades, and in Science for 6th grade. Analyses of results have been also considered as part of the support been provided. The 2016 test did not incorporate questionnaires; accordingly, workshops conducted with this purpose in mind have been considered once the preparation of cognitive items for the 2017 tests has commenced.

A review was carried out on contextual questionnaires administered jointly with national assessment tests in 2005 that appeared to be valuable in terms of their content and the effort entailed. Nevertheless, certain technical aspects with scope for improvement were identified in the development and clarification of the objectives of the questions, and in the process of correcting the test print.

3.3 Capacity assessment to improve the cognitive instruments and provide a better description of the skills of students at the lower end of the achievement scale

Workshops about item development have been organised for the various assessments that have been implemented, especially addressed to the item developers. Nevertheless, by and large these developers were external to the MEDUCA assessment structure and many of them are no longer associated with it in any way.

For the 2016 and 2017 national assessments, work has been carried out on item development and specification tables with the support of the University of the Andes. Moreover, nine individuals from MEDUCA attended the regional workshop in the context of PISA-D. As almost every individual who was subject to this latest round of training was not tied to the MEDUCA assessment structure in an administrative sense, but instead associated with other MEDUCA duty distributions, once again this Directorate runs the risk of failing to build capacities. Accordingly, it would be important for there to be

one specialist item developer in each area. Likewise, they would need to be trained in classical theory and item response theory for assessing the quality of items.

3.4 Capacity assessment of the country in assessing, analysing and using results for monitoring and progress

This aspect calls for much focus in the CBP because most reports have been produced by external staff and are somewhat simple and descriptive. MEDUCA hopes that assessment will contribute to policy-making and the design of education practices. As a result, it would benefit greatly from the capacity to conduct multivariate, multi-level analyses, along with communication techniques to help with dissemination.

The country as a whole does not have sufficient technical capacity to conduct complex analyses using the results of large-scale assessments. For the TERCE, the MEDUCA commissioned experts to conduct a secondary study adopting a descriptive approach. Three documents were reviewed; the most developed of them deals with associated factors, which include bi-variate analyses without addressing association coefficients or their significance levels.

Various stakeholders interviewed stated that it was important to receive results conducive to improvement, pointing out that if this condition was met, they would champion large-scale tests.

3.5 Identification of scope for capacity building among peers

Panama reaped the benefits of a distance course taught by the Mexican partners, and a face-to-face course was also given. The course was conceived as an introduction in order to draw greater benefit from the regional workshop on IRT conducted already in late 2016. However, the distance course firstly mentioned turned out to be too demanding in terms of availability of MEDUCA staff time. It would be necessary to assess the difficulties encountered and address them in order to capitalise on the learning opportunities they are being given.

It has also been envisaged for these partners to assist with the subsequent psychometric analyses.

3.6 Assessment of scope for including out-of-school 15-year-olds

Given that Panama will administer the 2018 test, securing the inclusion of these young people in the PISA-D sample is highly significant. The National Institute for Statistics, which is familiar with the home survey technique, expressed support in this regard early this year.

In 2012, adolescents at ages pertaining to lower secondary who were out-of-school accounted for 11% and in upper secondary accounted for 14%.[5] Consequently, it will be necessary to find them using a focused approach. Panama has a census and a home survey that publish information on a province-based scale. Census information can be requested on a district or *corregimiento* level (i.e. a township-level, which is smaller than a district); however, the most recent census was in 2010. The drawback in the case of the home survey – which is yearly – is that the sample is only representative on a province-based level.

In the case of 15-year-old students following 1st to 6th grade, preliminary data has been obtained so far.

This point will be described in more detail in the CBP.

4. Capacity development priorities

Below is a summary of the main capacity development priorities for each dimension envisaged within the theoretical framework (enabling environment, organisation and individual).

4.1 Enabling environment

- To disseminate the benefits and uses of standardised, large-scale learning assessment:

    - An extensive, frequent dissemination plan for the national and international assessment will be designed and promoted

    - Widespread dissemination of results will be programmed, along with planning for data analysis

    - The results of the 2016 census national test in third grade reading will be handed out to all establishments via purposely-recruited monitors

    - Research that makes use of the national and international test databases will be fostered

    - Ties will be strengthened with a broader number of stakeholders. One way to do this will be to set up an Advisory Assessment Committee.

- To improve reporting and results reports in order to have a positive bearing on education quality. To do so, the following is envisaged:

    - A public plan for disseminating PISA results as of 2020 encompassing various stakeholders and specific users

    - Promotion of research by the MEDUCA assessment structure which plans to allocate funding and resources to enhance analyses on assessment results

    - More complex analyses than those delivered thus far will be given to the press and the media, particularly incorporating the PISA results

    - Newsletter-type pamphlet shall be prepared, addressed to policy makers

    - The national report will incorporate more complex, thorough analyses, capitalising on the knowledge acquired in training. Moreover, additional material is hoped to be prepared in order to make results more accessible and suitable for various audiences

    - The MEDUCA assessment structure will strengthen its capacities through experience in daily dissemination efforts

    - Public acknowledgment must be sought in relation to the helpfulness of large-scale assessments and their results by preparing a plan for the analysis of PISA results centred on policy-making and the improvement of education practices.

- To forge support networks that enhance assessment:

- A effective tie will be established with the National Institute for Statistics and Census in order to draw up the PISA-D data

- The daily custom of communicating with various stakeholders will strengthen these ties.

- To promote the importance of benefitting from a consolidated (national and international) system for learning assessment that operates systematically:

  - A document that officially determines the regularity of assessments will be published on the website

  - Funding must be assured for continuous training

  - The national assessment shall be institutionalised by means of a legal document assuring its sustainability and operation in time in a regular, systematic manner

  - An assessment plan with a 10-year term shall be prepared and disseminated, publicly announcing the commitments to assessing the quality of learning

  - The assessment dissemination plan will encompass all key users and will seek to engage them in the goals of the assessment

  - The National Assessment Institute (when established) should be designed and planned so that will facilitate internal tasks and promote exchanges with stakeholders

  - The MEDUCA assessment structure and the National Assessment Institute (when established) shall be highly technical in nature and, as a result, shall be respected in that capacity. Therefore, various means will be used in order to avoid staff rotation.

The challenge for Panama is to set up an assessment system that will stand the test of time. To do so, a decree or law should be passed determining a specific degree of regularity and coverage for the assessment. Equally important is the backing of the public for these assessments, and civil society should be involved in the quality of education; this may be partly achieved through effective dissemination and analysis of results. It is irrefutable that users continually insist on measures being adopted as a result of assessment.

4.2 Organisation

- To improve the internal organisation of assessment in Panama the current MEDUCA structure for national and international assessment or the Assessment Institute (when established) would require:

  - A technical staff structure specialising in the various assessment processes

  - A structure designed to meet the needs of a learning assessment system in keeping with international standards. To do so, the support of a consultancy firm specialising in organisation of work could be contemplated, particularly as preparation for a new institute.

- To improve the internal organisation of the PISA NC:

- The NPM should organise his work according to the structure that has been put in place and receive the support needed to meet all requirements imposed upon him every day.

- Co-ordination meetings should be established and a computer tool should be used to make it possible to co-ordinate meetings and activities within the NC. To improve the PISA NC infrastructure:

  - It is necessary to purchase equipment and specialised software, including a server to host confidential information belonging to the PISA NC.

  - The PISA NC office should be redesigned according to the organisational and safety needs of the body. Generally speaking, organisations like to encourage assembly among staff and, in particular, among people carrying out similar duties.

  - The re-design should include setting up a lock-sealed area with sufficient security measures for storing material, in compliance with PISA security protocols.

A similar improvement of infrastructure should be envisaged for the National Directorate for Education Assessment, which suffers the same weaknesses as the PISA NC.

At present, the challenge faced by the MEDUCA assessment structure is twofold. On one hand, it requires more staff specialising in the various technical tasks of assessment. And it should also achieve an organisation centred on the promotion of an assessment system that encompasses national and international assessments. An important condition of the technical implementation of assessment is to make the most of this synergy, although it is equally important for quality in education and, in particular, to reach out to the institutions and the public in a co-ordinated manner.

In relation to infrastructure, the current design of the offices is not conducive to staff exchange and productivity, and it also lacks the most basic security measures needed in a learning assessment office.

4.3 Individual

- To develop skills in psychometrics:

  - IRT will be used to analyse the PISA data and will be needed for the national test.

  - A lead analyst will be required who is ready to be trained by the OECD, long distance in 2017-2018 and face-to-face in 2019.

- To improve new and existing procedures, as well as the means of overseeing quality, in relation to regular procedures for any assessment:

  - The investment in human resources shall be strengthened and greater numbers of qualified staff shall be recruited.

  - Staff will be trained to adapt items, fulfilling the specific technical requirements of those items.

  - Quality standards will be met in PISA and in national assessments, and supervisors will be given training to serve as internal monitors.

  − An open call will be issued for candidates with the appropriate profile to become coders.

  − Temporary staff from outside the schools in the sample shall be recruited or assigned to support data collection for national assessments and for PISA 2018. For PISA-D Strand C, consideration is being given to seeking support from the National Institute for Statistics and Census or to outsourcing assistance from a private company with expertise in home surveys.

  − The Statistics unit within MEDUCA is producing a project to improve information databases by using an automated data centralisation system that envisages a range of pertinent variables.

  − For the recruitment of test administrators, a record of applicants shall be prepared incorporating personal details and profile information based on an extensive call for applications. Once trained and selected, their successive performances shall be added to the record.

  − A workshop shall be organised with various authors of reports to agree on the elements for consideration and in order to standardise them in a publications manual.

  − The NPM will refine his expertise in various aspects through continued work, daily experiences and his own learning.

  − A system will be in place to centralise information sent by the various agents at the time of information collection.

  − Security protocols must be in place, fulfilled and monitored for all processes involving confidential material, and staff should be trained in implementing them.

  − As part of the security protocol, a record will be kept on those individuals who access confidential material, along with the type of material and the occasions on which they have access.

- To strengthen skills in sampling and databases:

  − Efforts will be made to develop skills in handling databases, in using statistical software, in probability sampling and, in general, in complying with the PISA standards.

  − Staff assigned to the task of data processing should be trained in order to meet the requirements of PISA, of ERCE (Regional Study on Education Quality) and of the national tests.

- To improve the preparation, assessment and storage of items:

  − The MEDUCA assessment structure will have qualified staff in the field of item development and assessment.

  − Efforts will get underway on producing a bank of items as part of documentation and recording work.

As part of the priority endeavours to consolidate a system for the assessment of education quality and, in particular, of learning, the assessment system should incorporate a thorough technical approach making

it possible to hold up to the vicissitudes of politics. This calls for huge organisational efforts and co-ordinated wills.

5. Conclusion

Panama has huge potential in order to develop an assessment system. Within the MEDUCA assessment structure, some members have more experience and know-how in assessment than others, but all members have the opportunity to undergo training. In order to capitalise on these opportunities, there is a need to ease the burden of work by recruiting or assigning more staff. Moreover, all new staff should be granted the opportunity to develop their skills in assessment. It is similarly necessary to hire staff with an analyst profile to develop skills in psychometric analysis and educational research, as well as staff with a communication-based profile. These specialist areas constitute a shortcoming within the MEDUCA assessment structure and they are essential if the assessment results are expected to have any impact and in order to engage public opinion in assessment.

The aim for assessment to adopt a thorough technical approach and to be based on a State policy is shared by all parties involved. Nevertheless, explicit agreements need to be made regarding the means and pathways of action required in order to achieve this, and all parties need to work in co-ordination towards reaching this goal. Under the new distribution of tasks that was implemented after this needs analysis had been conducted, it is particularly necessary for the current MEDUCA assessment structure to work collaboratively so that broader capacity building objectives are achieved and the results of the PISA assessment are maximised.

Panama has resources and scope to invest them in assessment; therefore, the preparation of a plan to maximise those resources is vital in order to secure an assessment system that functions in keeping with international standards.

NOTES

1. Daysi Noemi Jacson: *Una mirada a la Evaluación de los Aprendizajes en Panamá*, in: *Revista La Antigua*, November 2015, La Antigüa Catholic University.

2. She was present at the meeting, but does not work at the National Directorate for Education Assessment.

3. In Panama all official education teachers are attached to the Ministry of Education; therefore, they may be assigned various duties without the need for appointments or specific contracts.

4. In July 2016, the National Directorate for Education Assessment employed a total of 35 officials (including 19 regional liaison officers, all technicians); also, 10 technicians work in the offices of Panama City, along with the National Director and 5 administrative support workers).

5. See
http://data.uis.unesco.org/Index.aspx?DataSetCode=EDULIT_DS&popupcustomise=true&lang=en#.

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Clarke, M. (2012), *What Matters Most for Student Assessment Systems: A Framework Paper*, The World Bank, Washington, DC, https://openknowledge.worldbank.org/handle/10986/17471, License: CC BY 3.0 IGO.

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OECD (2013), *PISA for Development Project Document (with Logical Framework)*, OECD, Paris.

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ANNEX A: SUMMARY OF RATINGS FOR CNA DIMENSIONS

The following Annex is a direct export of data from the PISA-D CNA application. The structure of the information is hierarchical, nesting each PISA-D needs assessment element within: 1) the three CNA dimensions (enabling environment, organisation, individual), 2) PISA-D project requirements (the sequential operational requirements for implementation of PISA), and 3) the five PISA-D project 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 Panama.

Enabling environment	Latent	4	8%
	Emerging	10	21%
	Established	21	44%
	Advanced	12	25%
Organisation	Latent	7	19%
	Emerging	5	14%
	Established	11	31%
	Advanced	12	33%
Individual	Latent	7	25%
	Emerging	7	25%
	Established	10	36%
	Advanced	4	14%

CNA Dimension 1. Enabling environment

Project Requirement 1. Designation of NPM and establishment of NC

1. Stability of NLSA programme

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: SABER-SA-NLSA: EC1

Latent	Emerging	Established	Advanced
No NLSA exercise has taken place	**The NLSA has been operating on an irregular basis**	The NLSA is a stable programme that has been operating regularly	

Justification: The country has taken part unhindered in the two most recent administrations of LLECE; namely, SERCE and TERCE, and in PISA 2009. Moreover, it has conducted several national sample-based assessments (1998, 2000, 2001, 2005 and 2008) and administered a census-based test on third grade reading in October 2016. This test is known as Diagnosis and was conducted as preparation for implementing the *Aprende al Máximo* (Learn as Much as Possible) project. In 2017,

the country will administer Spanish and Math tests on 3rd and a Science test to 6th grade. Tests for 9th grade depend on the syllabus to be ready.

2. Having regular funding for NLSA

Project 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**	There is regular funding allocated to the NLSA	

Justification: Until 2015 the MEDUCA structure for national assessment did not have its own budget and operated using the institutional budget. As of 2016, the unit in charge of this kind of assessment took over administration of expenses and investment,

3. Adequacy of NLSA funding

Project 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: To date, all actions planned have been funded, but there is a lack of technical and specialist resources. In addition to the difficulty in finding these human resources on the market, salaries are somewhat low to attract expert staff. However, it should be pointed out that there is widespread political will, the country has the resources and co-operation agencies are well predisposed towards assessment. Indeed, recently-recruited staff has been taken on with higher salaries than former staff.

4. Relevance of NC expertise

Project 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 MEDUCA structure for national assessment fulfils several duties and in July 2016 it employed a total of 35 officials (including 19 evaluation regional liaison officers, all technicians; also, 10 technicians, along with the National Director and five administrative support workers). Only two

experts in assessment were included among the staff and no statisticians. No psychometricians are trained in the country, posing a difficulty for recruitment. Technical staff require training in classical theory in assessment and IRT. There are also no researchers in education with the exception of the co-ordinator of the Unit for Research and Study of the MEDUCA structure for national. It must be noted that for the implementation of many projects the MEDUCA structure for national assessment seeks support from universities that have human resources with experience in assessment and research.

5. Experience in planning, organising and conducting large-scale surveys

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: SABER-SA: NLSA

Latent	Emerging	Established	Advanced
The country/system does not offer opportunities that prepare individuals for work on NLSA		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: The MEDUCA structure for national assessment with the support of international counselling is training teachers and supervisors in the development of items; as a result of the workshops an item development manual for the subjects of mathematics, Spanish and natural sciences, aimed at middle school, is being elaborated. The goal of this manual is to sensitise teachers and students of the importance of promoting life skills and assessment as a tool that is useful for continuous improvement of the quality of learning. The items will be used to illustrate the indications in the manual. The Faculty of Education Sciences of the University of Panama teaches a master's degree in Research and Assessment, wherein the decision was made to enhance the assessment of learning following a recent evaluation. Nevertheless, reference has been made suggesting that assessment focuses on assessment in class and of projects and institutions, and requires strengthening research abilities. Given this circumstance, it would be deemed as highly advantageous to include teachers from the faculty in training given to members of the MEDUCA structure for national assessment. It is predicted that a syllabus expert, psychometricians, specialists in education research and measurement, and top level statisticians are needed.

6. Experience in planning, organising and conducting international assessments

Project 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	**The country/system has participated in two or more ILSA in the last 10 years**

Justification: Panama took part in PISA 2009, SERCE and TERCE. The PISA 2009 work was conducted in co-ordination with the Technological University. The issue was that insufficient capacities were institutionalised because most processes were outsourced and human resources are not

stable. Teams are put together, but following changes of government many staff members return to their previous jobs or leave the system. In the case of TERCE, progress has been made inasmuch as dissemination documents are being developed thanks to the participation of the Unit for Research and Study. For TERCE the sample analyses and item reviews were conducted by the project co-ordinator for MEDUCA and a non-profit organisation, both of which also conducted the test analyses. One example of the lack of accumulation of knowledge and learning is that presentations with results from the 2008 national test – virtually unheard of within the current MEDUCA structure for assessment – include information with IRT scores and significance of differences. Recent analyses do not include these features. This is due to staff rotation and lack of records in the aforementioned structure. It is necessary to point out that human resources within this structure have witnessed high rotation and very little information is published.

7. Having regular funding for ILSA

Project 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	There is funding from loans or external donors	**There is regular funding allocated at discretion**	There is regular funding approved by law, decree or norm

Justification: There is no medium-term schedule of national and international assessments to be conducted. Accordingly, assessment depends on whichever government is in power, so the aim is to institutionalise it so it becomes State policy. Two alternatives are envisaged in this regard: one is to establish the periodicity of assessments by law or decree; the other is to create an independent assessment institute. Several of those interviewed considered that there is a need for a national commitment to implement a publicly-determined schedule for national and international tests in the medium- and long-term.

8. Adequacy of ILSA funding

Project 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	**Funding covers all core activities of the ILSA**	

Justification: In order to obtain a budget for PISA-D in 2016, an exceptional budget item was requested. PISA 2018 was already budgeted, as with national assessments. For future years, PISA 2018 and PISA-D will be budgeted in advance.

9. Bureaucratic efficiency

Project 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	**Communication channels allow direct institutional access between NC and stakeholders**

Justification: A citizen group formed by business and civic organisations and individuals named *Fundación Unidos por la Educación* (United for Education) and the *Fundación para la Promoción de la Excelencia Educativa* (Foundation for the Promotion of Educational Excellence) strongly support participation in PISA, and so do the universities. In general, the stakeholders consulted objected to suspending participation in PISA 2012 and 2015. Communication between the MEDUCA structure for assessment and other ministerial authorities is fluent and direct. Moreover, the education guilds – a total of 19 different groups – agree with the assessments and are explicitly in favour of PISA even if they have conflicts with the Ministry owing to other reasons.

10. Efficiency of communication protocols

Project 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)**	The NPM can engage most stakeholders as a peer

Justification: The NPM has the position to have direct access to stakeholders, but he still needs to expand his network of contacts and communicate with several other groups of stakeholders.

11. Communication with stakeholders

Project 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	The NC has regular meetings or accessible forums with stakeholders for two-way discussions

Justification: For the exclusive subject of PISA 2018 and PISA D, there is no organised or institutionalised communication with a group of stakeholders, although there is a National Coordinating Committee of Education that is the instance that maintains communication with teachers' unions, and there is also the National Advisory Council for Education, CONASED. Communication with stakeholders is spontaneous and rather frequent, albeit disorganised and not institutionalised in order to attain systematic, balanced representation.

12. NLSA research and development funding

Project 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	**Funding covers some professional development activities**	Funding covers research and development activities

Justification: Sufficient funding has been provided for studies and research, although in general it has been outsourced; whereby, capacities have not been built within the MEDUCA structure for national assessment. It is required to strengthen human resources for the analysis of results, conduct research internally or to supervise and act as an active and demanding counterpart of the externalised studies. It should be noted that in the past two years they have received external support for generating research from IADB, SENACYT and the universities.

13. Having strong organisational structures for NLSA

Project 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	**The NLSA office is a permanent agency, institution, or unit**	The NLSA office is an independently-funded and operating agency, institution, or unit

Justification: There has been a MEDUCA structure for assessment within the Ministry since 2002 that co-ordinated the SINECA and LLECE tests. Recently, it has been conducting specific assessment duties and engaging more directly with outsourced companies contracted for certain projects. It performs institutional assessment functions, including on head teachers, teachers, students and administrative assistants in schools, starting with a self-assessment and subsequently a peer assessment, albeit with a lack of reliable instruments; followed by an assessment of accomplishments

relating to the evaluation of educational and administrative processes, the assessment of the roles of principals, teachers, supervisors, co-ordination of various components in the system and the generation of information for decision-making; at the end of the school year teachers are administered a self-assessment instrument that should be discussed with the school principal until a consensus is reached in order for it to be submitted to the regional directorate. Likewise, the MEDUCA structure for assessment should assess educational innovations and projects, identify the need for supervisory and monitoring studies and produce information for decision-making. It does all of this with a staff team of 30 technicians which has grown enormously in the past two years. Nonetheless, staff are still short if we consider the skills and profiles needed in an assessment system. In relation to the statements in the above paragraph, it is necessary to point out that the MEDUCA structure for assessment has very little information from previous authorities. According to a number of accounts, each authority starts from scratch. As a result, it is vital to establish a State policy regulating assessments and to design a system for recording and documentation to provide information about all steps taken and describe the processes, guidelines or indicators followed.

14. Autonomy of NLSA structures

Project 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	**Political considerations sometimes hamper technical considerations**	Political considerations never hamper technical considerations

Justification: Within the Ministry there is evidence of political will at present, something that was limited in previous assessment experiences. Examples are the results of PISA 2009 and the 2008 national assessment which were not widely disseminated, so much so that some parties within the ministry were unaware of them. This is made worse by the lack of records and communication between the teams currently responsible and previous ones.

15. Accountability of LSA structures

Project 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	**The NLSA office is accountable to a clearly recognised body**	

Justification: The MEDUCA structure for national assessment was set up on 23 August 2002 by means of Executive Decree 423. This Directorate is directly attached to the Minister, as shown in the pertinent organisational chart. One of the priority projects of this Directorate is the National System for Assessing the Quality of Learning, the key goal of which is to establish the quality of education in terms of achievement, appropriateness and relevance of student learning and the performance of the education system in general in keeping with society's needs, and taking into account associated factors, with a view to focussing decision-making on achieving lasting improvement in a clear-cut, timely fashion.

16. ILSA research and development funding

Project 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		Funding covers some professional development activities	**Funding covers research and development activities**

Justification: Financial resources are available and international co-operation bodies and citizens are willing to provide funding if required. Nonetheless, it is necessary to strengthen and increase technical capacity for research within the MEDUCA structure for international assessments and in the country.

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

17. Geography and climate obstacles

Project 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	**Quality of transportation networks limits the ability to reach certain regions under certain weather conditions**	All regions are accessible

Justification: Of the 16 educational regions in the country, three are installed in native counties that are difficult to access. This restricts the performance of activities and actions at certain times of the year, but it does not prevent these people from taking part in occasional assessments. During the monsoon season, it is more difficult to access those areas. There are other regions that are difficult to access despite not being native areas. County refers to a geographical area with a predominantly native population. According to the law, they are characterised by indigenous identity and world views and they preserve their customs and institutions provided they are compatible with fundamental rights. In addition, their authorities and institutions are acknowledged, along with the administration of justice and conflict resolution procedures their culture deems applicable. The law promotes the legal security and protection of their land and acknowledges and safeguards collective ownership of non-assignable land. Their inhabitants have the right to make use of renewable natural resources and the right to environmental preservation and protection according to their traditions, along with the pertinent benefits and compensations. Other rights include intercultural bilingual education; the Ministry of Health acknowledges traditional medicine as a valuable contribution to healthcare and has set up specific arenas to promote it; their religion is also recognised.

18. Security issues with data collection

Project 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	**All regions are accessible**

Justification: The assessment system benefits from staff assigned as "liaison officers" for assessment in each educational region, who support and co-ordinate the distribution and custody of materials in addition to training test administrators and monitoring implementation.

19. Effect of political climate on implementation

Project 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**	All relevant political bodies (government and opposition) actively support the project

Justification: It is the political will of the government for the country to resume participation in national and international tests. Representatives of the guilds have taken part in round tables with the Minister, having reached agreements. However, it should be noted that previous authorities have discontinued assessments, for instance, PISA 2012 and 2015. In addition national assessments were suspended. It is therefore important to strengthen a comprehensive assessment system in order to establish the frequency of administration of the tests, the results analysis, their dissemination and the generation of educational projects based on the results.

20. Reliability of student attendance

Project 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	Student attendance may be monitored but is vulnerable to out-of-school factors (e.g. work, weather)	**Student attendance is reliable but is not formally monitored with attendance records**	Student attendance is reliable, monitored, and enforced with attendance policies

Justification: The only background available is the administration of PISA and TERCE, in which no attendance problems on the part of students nor issues relating to participation from schools were observed.

21. Quality of school sample frame

Project 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	**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)**	An EMIS is updated annually with an accurate frame

Justification: In the Ministry there are two main databases, one in the Statistics area, attached to the Education Planning department, and another for the Directorate for Educational Computing. There is no merger with them. On the one hand, the Computing database does not include private schools, while the Statistics database includes private schools that report information voluntarily. On a visit to the Computing area it was noted that in the database students appear with an ID and a date of birth. Moreover, requests are being made to include information on private schools. The Statistics database does not include dates of birth. The most reliable Statistics database is from 2015. Plans are afoot within the Computing directorate to pool and standardise information on all schools, including the unique ID and date of birth of students.

22. Level of detail in administrative student data

Project 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
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	**Students data are recorded in central records that link student name and school name**	Students have profiles and personal identification numbers that persist across grades and schools

Justification: Information is provided for individual schools, albeit incomplete. The Statistics area handles aggregate enrolment information for students; the Computing directorate handles this on an individual school basis and students are individually identified, but the database does not include private schools; accordingly, they will work with both databases.

23. Scheduling conflicts due to local political activities

Project 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	Use of common resources (schools, teachers/ head teachers) causes scheduling conflicts with implementation of PISA in schools	**Scheduled political or civic activities do not adversely affect the project**

Justification: No political activities are envisaged that could affect PISA implementation aside from teacher strikes. Nonetheless, they are not frequent and, in particular, following the resolution of the conflict from 24 July 2016 it is hoped that the agreement will avoid future strikes.

24. 15-year-old census

Project 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	**Information about out-of-school 15 year olds is available from data sources updated with >5 year frequency**	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: Panama applies the national population census every 10 years. The last was in 2010 and new *corregimientos* have emerged since. In addition, there is also a household survey applied annually.

25. Location of 15 year olds

Project 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	Information about location of 15 year olds is at regional levels (e.g. number of 15 year olds in each province)	**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: Both the census and the home survey involve the publication of information on a province-based scale. The drawback in the case of the home survey is that the sample is only representative on a province-based level. Census information can be requested on a district- or *corregimiento*-level (i.e. a township-level, which is smaller than a district); however, the most recent census was in 2010.

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

26. Information on student language of instruction

Project 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
No student records are available	Student records are available but do not store dominant language of instruction	Student information records the dominant language of instruction	**Student information records the language of instruction for each subject**

Justification: All instruction is given in Spanish with the exception of international schools. The mother tongue of students is currently unknown, but ethnic origin is being recorded in the computer database. Moreover, it is also known that students from counties are entitled to receive bilingual education in the mother tongue and in Spanish. Indeed, teachers are being trained to speak the native languages and meet this demand.

27. Information on school language of instruction

Project 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	School information contains predominant language of instruction	

Justification: It is known that all instruction is given in Spanish with the exception of international schools. In the counties implementation has commenced on bilingual intercultural schools, but it is not known which ones they are and to what extent.

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

28. Clear statement of purpose for participation in NLSA

Project 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**	There is a formal policy document that authorises the NLSA	

Justification: There are legal documents from which it can be inferred that authorisation is given to assess learning of students, but it is not regulated. As a result, there is no certainty surrounding the regularity with which tests will be administered or in relation to which grades or subjects. The aims of the assessment and the consequences are also not defined. The existing document, contained in the "Learn as Much as Possible" project, refers solely to a diagnosis of 3rd grade reading. Nonetheless, there is no document for assessments.

29. Transparent policy for NLSA

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: SABER-SA-NLSA: EC1

Latent	Emerging	Established	Advanced
No defined policy	The policy document is not available to the public	The policy document is available to the public	

Justification: There is no document setting out a policy, there is "no defined policy", therefore the rating should be **Latent**.

30. Clear statement of purpose for participation in ILSA

Project 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	**There is a formal policy document that addresses participation in ILSA**	

Justification: In conjunction with the OECD, MEDUCA is in the process of signing an agreement to take part in PISA 2018 and PISA-D Strand C. Additionally, the country has confirmed its interest in taking part in UNESCO's Forth Regional Comparative and Explanatory Study. In conjunction with the World Bank, the country upholds a commitment to continually take part in international tests on education assessment in the coming years. This is part of the agreements for the disbursements of the loan granted. This agreement also includes the publication of results and non-confidential micro data on international projects.

31. Use of ILSA

Project 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 from the ILSA are not used to inform decision making in the country/system	Results from the ILSA are used in a limited way to inform decision making in the country/system	**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: Evidence gathered indicates that the national results of PISA 2009 were scantly disseminated in Panama. The international report in English is in the public domain on the OECD website. Nonetheless, the national report prepared by Panama in 2009 has not yet been made public, nor indeed is it easily accessible. The results of the TERCE have received extensive dissemination

with presentations in the education regions addressed to the various stakeholders, including teachers. However, we should point out that certain teachers interviewed from the capital stated that they had not received information from the regional directorate or from school head teachers. According to the opinion of those interviewed, this would be the surest way of finding out because the press and the Internet did not suffice for them. The foundation Unidos por la Educación co-operated with the national report on TERCE. Results were disseminated and a technical report is pending publication and will include the analysis methodology. . There were some difficulties to implement the study. A strategy will be held in place for disseminating Panama's participation in the PISA 2018 test and to disseminate the results of the TERCE, which shall encompass mentions in the media, dissemination in universities, news in the press and information on the MEDUCA website. One pertinent action was the fact that the SENACYT call for applications incorporated the presentation of projects based on secondary analyses of assessment data.

32. Stakeholder use of LSA data

Project 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	**Stakeholders commission specialised reports or reference correlations and other specific information from LSA**	Stakeholders actively analyse data for specific information

Justification: The country as a whole needs to strengthen and improve their capacities to conduct complex analysis using the results of large-scale assessments. For the TERCE, the MEDUCA commissioned a civil society group to conduct a secondary study adopting a descriptive approach. Three documents were reviewed; the most developed of them deals with associated factors, which include bi-variate analyses without pointing to significances and coefficients of association. Various stakeholders interviewed stated that it was important to receive results conducive to improvement, pointing out that if this condition was met, they would champion international large-scale tests.

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

33. Engagement of data collection agency or network with collection sites (e.g. schools)

Project 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**	The NC has regular contact with schools through professional development and/or previous LSA activities

Justification: In the country's educational regions there are assessment liaison officers attached to the MEDUCA structure for assessment charged with promoting association between assessments and schools. The liaison officers are highly effective in carrying out related tasks, but this association is subject to the requirement for orientation or training. The MEDUCA structure for assessment does not have the duty of supervising; rather, the academic directorates have a group of national and regional supervisors. The National Directorate of Teacher Training is responsible for the training of educational centres.

34. Perceptions of external survey-based large-scale assessment (LSA) of lower-level stakeholders

Project 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	**Stakeholders recognise a clear washback effect from the results of LSA and the policies and practices affecting learning**	Stakeholders recognise external uses of LSA information and make internal use of LSA results to inform policy and practice

Justification: Only a group of six teachers was interviewed. Of these, one teacher had been granted the possibility of coding open-ended questions in PISA 2009 and she stated that this chance did have an impact on her practices. The others stated that they were unaware of the results, only knowing that the country performed poorly. At present, MEDUCA promotes an online PISA support platform donated by a non-profit association which seeks to acquaint various stakeholders – including teachers – with PISA, giving information on the PISA project and the assessment frameworks, as well as being granted access to items released from previous cycles and strategies for improving teaching practices. To promote this enhancement, tutoring teachers will be on hand.

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

35. Funding for NPM/NC for international training and meetings

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: NPM Manual: International participation

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**	Dedicated funds are available for participation in international training and meetings

Justification: MEDUCA has funding for participation in international training and meetings.

36. Availability of NPM/NC for international training and meetings

Project 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	Participation in international activities is within the scope of institutional responsibilities, but in addition to regular responsibilities	**Time is specifically allocated to participation in and preparation for international activities**

Justification: The NPM has been specifically recruited for this position and, as such, has no other duties to perform. All other staff are authorised to attend training.

37. Participation in previous international ILSA training

Project 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	The ILSA team attended some international workshops or meetings	**The ILSA team attended all international workshops or meetings**	

Justification: They have attended all meetings since taking part in PISA-D and PISA 2018.

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

38. Expectations for NLSA

Project 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**	There is a written NLSA plan for the coming years

Justification: No official information is available on the national tests to be conducted for the coming year.

39. Having strong public engagement for NLSA

Project 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	**All stakeholder groups support the NLSA**

Justification: Teaching guilds, the education community and civil society are keen to support learning quality assessment processes.

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

40. Setting clear policies for ILSA

Project 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: As of March 2017 the agreement with the OECD has not been signed and the MEDUCA website does not show the charter with a declaration of intent to take part in the forthcoming UNESCO regional study.

41. Contributions to ILSA

Project 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

Justification: To date, Panama's participation in PISA has been somewhat passive. Even so, feedback has been given in relation to instruments. A regional PISA report is being planned and Panama will take part in this initiative. In the context of the TERCE, Panama participated in the item preparation workshops.

42. Dissemination of ILSA results

Project 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	**Country/system-specific results and information are disseminated irregularly in the country/system**	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: PISA 2009 was not widely disseminated, although the TERCE results were broadly disseminated, thanks to a dissemination component. Likewise, since the commencement of participation in PISA 2018, this development has been promoted, highlighting the benefits it will afford the country.

43. Feedback from ILSA

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: SABER-SA-ILSA: AQ2

Latent	Emerging	Established	Advanced
Products to provide feedback to schools and educators about the ILSA results are not made available		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: The outputs in relation to TERCE in Panama have been examined, and while interesting and pertinent, they do not centre on a change of teaching practices, which is part of the strategy or purpose sought from the assessment.

44. Breadth of stakeholder engagement

Project 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	K-12, TEVET and University sectors are engaged in LSA	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: The analyses are conducted by external agencies, such as universities or NGOs, and also by the staff from the MEDUCA structure for assessment. As inter-institutional strategy to promote the use of the data, the National Secretary of Science and Technology (SENACYT) issued an invitation to tender for secondary research on assessment. The analyses carried out by external staff were contracted by MEDUCA or *Unidos por la Educación*. Teachers tend to favour PISA. A website has been set up to raise awareness among teachers, agents and students concerning PISA.

45. Media coverage of ILSA

Project 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	**There is media coverage of the national averages and percentages from ILSA results**	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: The TERCE results have been disseminated inasmuch as they have been examined, although the analyses were very simple. As a result, this has been classified as **Emerging**. Media coverage surrounding the PISA launch has been noteworthy.

46. Positive washback of ILSA

Project 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		ILSA results have influenced decision-making intended to improve students' achievement levels	Decisions based on the ILSA results have had a positive impact on students' achievement levels

Justification: As mentioned, dissemination of PISA 2009 was scarce, if not non-existent. TERCE was disseminated in 2016 and it is not known if it will have an impact.

47. Learning needs for non-academic outcomes

Project 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		The trade/vocational training sector defines foundational skills for occupational training	**A framework extends the K-12 curricula to adult competencies relevant to local contexts (including economy, citizenship, etc.)**

Justification: A common curricula exists for K-12 that is wide-ranging and emphasises education in citizenship.

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

48. Monitoring of collection procedures

Project 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	Monitored sites are selected randomly with ad hoc exclusions	**Monitored sites are randomly sampled and the rationale for any exclusions from site monitoring is agreed upon prior to sampling**

Justification: This will be done as instructed because the aim is to comply with the PISA standards. In national tests, supervision is conducted at various levels and quality checks are performed incorporating observers in class.

CNA Dimension 2. Organisation

Project Requirement 1. Designation of NPM and establishment of NC

49. National co-ordinator for ILSA

Project 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	**There is a team and national/system co-ordinator to carry out the ILSA activities**	

Justification: Panama established its PISA NC devoted only for the PISA projects. Seven individuals, including the NPM, are working full time in this Centre. The PISA team also has the support of national and regional supervisors of English, Spanish, Science and Mathematics.

50. Effectiveness of human resources for ILSA

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: SABER-SA-ILSA: EC3

Latent	Emerging	Established	Advanced
	The ILSA office is inadequately staffed or trained to carry out the assessment effectively	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: There is a lack of suitable staff for designing the analysis, analysing data and preparing a national report. This need can be addressed by means of a specialist in education research. Greater knowledge is also required in sampling. Although a psychometrician is needed for the entire assessment team, it may prove difficult to hire such a professional according to the NC as there are very few of them in Panama. Two industrial engineers will deal with field operations and preparation

of databases. Nonetheless, they have no previous experience in standardised large-scale learning assessment. They were trained in an introductory course to large-scale education assessment.

51. Scheduling priority given to ILSA activities

Project 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 are typically assigned higher priority requests related to other projects	**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: Given that organisation of work means taking on new requests with immediate effect, it is difficult to plan activities in advance.

52. Availability of NPM

Project 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	Sufficient time commitments are made by NC staff to meet PISA demands, but no individuals are assigned full-time to PISA responsibilities	**Sufficient person-time is allocated to PISA with at least one full-time (non-clerical) NC staff member**

Justification: The NPM is solely devoted to PISA and already has part of the team needed.

53. Engagement of clerical/administrative support

Project 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
Clerical support is not involved in correspondence (NPM manages all correspondence directly)		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: Currently, bilingual secretarial support is available, but the NPM and the technical staff with the longest time of service continue to maintain much of the communication of the PISA NC, since they manage in more depth the characteristics of the project. To the extent that the person in charge of secretarial support knows more about the project, it will release this burden for the rest of the team.

54. NC co-ordination

Project 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		Staff meetings are scheduled and attended regularly	NC staff use shared agendas to enable regular and ad hoc scheduling of meetings

Justification: It is necessary to have a better way of organising meetings: fixing them in advance, keeping the appointments, starting on time, having an established table, keeping records of them and following up on the agreements.

55. Access to a reliable, high bandwidth Internet connection and e-mail facilities

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: NPM Manual: Resources of the NC

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**	NC has a fully networked environment with universal access to high bandwidth internet and email

Justification: Broadband is often limited to be able to meet the most advanced needs such as webinars, video training, video conferencing with contractors, etc. The storage space assigned for email is limited, making it difficult to meet standards for communication on the context of the PISA project. There is no network server or working group, and there are no security protocols for working on the project.

56. Computing environment

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: NPM Manual: Resources of the NC

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**	NC staff all have personal or dedicated computers with standard software; access to the workplace network may be limited	NC has dedicated workplace computers for all staff with standard software and network access

Justification: The project support team members use their personal computers as there are not enough high capacity computers within the NC. The computing equipment available is not networked; instead, each workstation operates individually. There is similarly a lack of specialised software needed for the project, such as Microsoft Project, SPSS, etc.

57. Data quality of ILSA

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

References: SABER-SA-ILSA: AQ1

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	**The country/system met all technical standards required to have its data presented in the main displays of the international report**	

Justification: Both in PISA 2009 and in TERCE, the data for Panama was published without issues, in other words, the standards required to be included in the international reports were met.

58. Local capacity building for ILSA

Project output: Enhanced contextual questionnaires and data-collection instruments

References: SABER-SA-ILSA: SA1

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

Justification: Ever since the release of the TERCE results in 2015, information has been disseminated regarding TERCE and PISA. With the release of the databases there are opportunities to learn and generate new knowledge with the results of international testing, between the research bodies of Universities, Study Centres, the MEDUCA decision makers and civil society. Currently three investigations are being conducted with the data from TERCE.

Project Requirement 5. Establishing security protocols for the NC and for national sub-contractors

59. Integrity of coding

Project 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	Coders are selected from nominated applicants using transparent criteria	

Justification: According to reports from the individual in charge of coding in TERCE, an extensive call was made for individuals with references within MEDUCA or other institutions. The NPM points out that staff appointed to review instruments and adapt items stem from a network of contact individuals with the necessary profile, rather than from open calls for applicants. Based on previous experiences, the performance of these partners is already known. The national assessments for 2016 did not include open-ended questions, but those for 2017 may include short answer open-ended questions. Coders for the 2017 national test have been selected from a workshop of mass participation where teachers and supervisors of the three subjects (mathematics, natural sciences and Spanish) were invited to participate, then after an induction they took a test and the teachers who scored better were selected.

60. Computing security

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: NPM Manual: Resources of the NC

Latent	Emerging	Established	Advanced
Security software is limited to pre-installed software on personal or office computers	Staff are personally responsible for maintaining antivirus and software updates without supervision	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: Users have an access key to allow them to carry out certain actions, but they do not have administrator settings. An institutional technical support department is on hand within the Ministry.

61. Accountability for security

Project 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	**Where uncontrolled access is possible, legally binding confidentiality agreements enforce the data access restrictions and apply to all staff**

Justification: For the PISA project, individuals with access to information signed a confidentiality agreement. For the national test, a legally binding confidentiality agreement is signed which entails penalties for breaches.

62. Secure storage of completed materials following data collection

Project 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	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)

Justification: There is no check on admission to facilities and there is no receptionist. There is also a lack of furniture in order to store confidential information in a manner that incorporates security measures. The MEDUCA structure for assessment is in a process of restructuring accommodations and storage, following the commitments made with the participation of Panama in international and national tests. There are requirements for a receptionist and security equipment and furniture for archiving information.

63. Adherence to security protocols

Project 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	All staff receive training in security protocols

Justification: The current team has not been granted the opportunity to administer tests and handle confidential material. To date, the protocols in the PISA standards have been met but there are no any other protocols.

64. Security auditing

Project 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	Access to secure materials is verified and recorded every time the material is accessed

Justification: No specific safeguards were observed during the visit in relation to any material deemed confidential. The team has already learnt from this and now the PISA team is the only one who has access to information that is sent, and any people recruited to help in the revision and translation work do so in the presence of the PISA team members. The NPM is the person who is in charge of the confidentiality agreements.

65. Secure space for conducting the coding operations

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: NPM Manual: Resources of the NC

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**	Dedicated secured facilities are available

Justification: During the visit it was noted that there were areas within the NC that would be used for various purposes, although they do not have the security needed. Currently the NC is being restructured in order to ensure the safeguarding and confidentiality of information.

66. Software resources

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: NPM Manual: Resources of the NC

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	Individuals may download or purchase software for their own use but have access to institutional copies of required software	**The NC administration maintains software licenses and manages acquisition and installation of necessary software**

Justification: Institutional software licenses for common use have been secured and mechanisms are in place for acquiring specialised software. Nonetheless, it has been stated that administrative procedure is bureaucratic and the requests have not yet been met. It is necessary to consider that staff members who use their own computers are not subject to these restrictions.

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

67. Sufficiency of data collection staff

Project 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	There are few trained data collectors who must travel to many sites or many inexperienced or linguistically challenged data collectors	There is a sufficient number of qualified data collectors for all sites

Justification: It will be necessary to recruit or assign temporary staff to support data collection for PISA 2018. For PISA-D, Strand C, consideration is being given to requesting support from the National Institute for Statistics and Census or outsourcing the process to a private firm with experience in home surveys.

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

68. Availability of ILSA training

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: SABER-SA-ILSA: SA1

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

Justification: Endeavours are being made to build capacity in education assessment throughout the entire education system; hence, there is scope for learning on the issue, not merely among staff directly supporting the project. Evidence of this lies in the fact that management has been conducted for the participation of a substantial group of teachers from within and outside MEDUCA in virtual and face-to-face training activities, such as: preparation of PISA-type items and large-scale education assessments. For future training, the ministerial authorities have stated that they will give their support in providing more officials with opportunities.

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

69. Commitment of data collection staff

Project 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	**Data collection staff are part-time, shared with other projects in the same institution**	Data collection staff are specifically hired or reassigned for this role/project

Justification: To date, prior assessments have essentially been carried out involving teachers, administrative staff or supervisors from the Ministry, who have demonstrated their devotion to their duties. PISA 2009 was conducted with the support of SENACYT and the Technological University of Panama.

70. Availability of training facilities

Project 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)		**Existing facilities may be repurposed to accommodate training**	A dedicated training environment is available

Justification: At the NC there are no facilities, but the Ministry does have other offices with multi-purpose rooms. Moreover, ties have been established with universities who regularly co-operate providing facilities and resources.

71. Avoidance of conflicting interests

Project output: Country capacity in assessment, analysis and use of results for monitoring and improvement

References: PISA Technical Standards: Standard 6.3

Latent	Emerging	Established	Advanced
Hiring for data collection is treated as casual employment	The NC maintains employment records of data collectors	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: No test administrations have been carried out by the current team. For PISA the plan is to avoid any conflict of interest.

72. Commitment of data collectors to training

Project 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	Data collector time is compensated but regular responsibilities may conflict with the training schedule	**Training time is compensated and is integrated with regular duties (or staff are hired exclusively for data collection)**

Justification: In the national test administered in 2016 and the ones to be administered in 2017, applicators will be hired in the urban areas from among university students. This will be made possible by outsourcing the field work, although a large amount of supervision will be conducted by staff from the MEDUCA structure for national assessment. There are greater difficulties in rural areas and possible solutions will be looked at, such as teachers from other schools or from the same school but from a higher grade. There has been no issue in training teachers/applicators on previous occasions, as they have been assigned points in order to rise in the hierarchy. In PISA this decision will be made later. In PISA-D this will be carried out by individuals with experience in home surveys.

73. Household survey collection

Project 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	**The NC has access to service providers with national survey capacity**	NC staff already has staff or existing relationship with resources for national survey collection

Justification: In terms of the country as a whole, a home survey is conducted yearly and the census every 10 years. MEDUCA has no experience in these surveys, although discussions are being held with the National Institute for Statistics and Census which does perform these studies. In addition, external suppliers are available to carry out these tasks.

74. Correct sequencing of administration of national options

Project 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	Data collection staff have been/will be trained using the final instruments	**Final administration protocols are/will be sequentially scripted and bound and provided with the international testing materials**

Justification: The PISA standards will be followed.

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

75. Providing teachers with opportunities to learn about the NLSA

Project 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	**There are occasional courses or workshops on the NLSA**	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: University and system teachers have been given opportunities to take part in workshops. Moreover, the teachers assist with assessment tasks and this gives them scope for learning. Nonetheless, these workshops are not regular and coverage in the system is still limited. At present, a website has been launched with all explanations concerning PISA and released items: (https://pruebat.org).

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

76. Booklet distribution infrastructure

Project 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 re-tasked to print and distribute booklets but must be trained with proper protocols	**Existing infrastructure can be used to transport testing materials using pre-existing security protocols**

Justification: Assessment liaison officers exist in all education regions to support logistics for PISA and the national tests.

77. Adequacy of transportation for data collectors

Project 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	**Data collectors use dedicated institutional vehicles**

Justification: Transport typically involves institutional vehicles. In cases involving difficulty in access where applicators need to travel one or two days in advance, transportation and per diem expenses are paid.

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

78. Effectiveness of training for data collection

Project 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	**Training for data collection is conducted in group settings with feedback between trainees**

Justification: For PISA, the PISA protocols shall be followed. National tests directly train applicators in situ or in nearby venues.

79. Availability of document formatting and print specifications

Project 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	Document and print specifications are not standardised or easily accessible	All document print and specifications are maintained in manuals accessible to all NC staff	

Justification: Formal guidelines set out in a written document have not been found. Nonetheless, a tradition does exist in relation to certain aspects of MEDUCA publications.

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

80. Responsiveness of sample design to data collection activities

Project 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		**The data collection to is periodically updated to respond to sample non-response and assign replacements**	Daily or real-time updates on data collection or sample design are available from centralised data processing

Justification: The plan is to centralise information daily. It is not yet known exactly what method will be used for information collection.

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

81. Quality of document proofing

Project 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		**Document production relies on informal experience using individual expertise or idiosyncratic methods**	Clear protocols exist for the identification of potential typographic errors and/or the NC has an official dictionary and manual of style

Justification: One teacher of Spanish with experience in proofreading typically reads and corrects the NC's documents before they are made public.

82. Availability and quality of publishing resources

Project 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	**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**

Justification: Despite there being printing resources in the Ministry, it is preferred to outsource this work to ensure it is completed within established deadlines.

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

83. Fidelity of response coding

Project output: Enhanced contextual questionnaires and data-collection instruments

References: PISA Technical Standards: Standard 11.3

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

Justification: In PISA the aim is to follow the coding manual. National assessments have not included open-ended questions to date. The contractor's directions were followed during TERCE.

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

84. Data collection monitoring

Project 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	**All monitors are trained as data collectors**

Justification: The PISA standards will be adhered to. In national tests, monitors are trained as if they were supervisors.

CNA Dimension 3. Individual

Project Requirement 1. Designation of NPM and establishment of NC

85. Adherence to protocol

Project 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		**Data processing staff have experience carrying out specific instructions in specific contexts**	Data processing staff have experience operating with a variety of protocols in different contexts

Justification: At the time of the diagnosis, one individual had experience following protocols in order to complete databases in contexts not related to education assessment, but that person is no longer working at the NC. A replacement will be hired.

86. NPM experience with dissemination of results from large scale assessment

Project 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	**LSA reports include statistical tables and descriptions of statistical comparisons and notes where differences are substantive or significant**	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: The national reports to which access was enabled in relation to both PISA and TERCE are basic and descriptive. These reports were not prepared at the NC; instead, they were prepared externally. Capacity to draw up complex reports is limited in the country.

87. NPM regularity of communication

Project 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	**NPM can access and respond to email and voicemail at least once a day**	NPM can process all incoming email and voicemail each day

Justification: At present, the capacity assigned to institutional email is highly limited; this entails a risk as they need to be ready to receive documents and presentations from all sources. On occasions, due to lack of time or an excess workload it is not always possible to reply within stated timeframes.

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

Project 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	NPM has experience in a matrix management structure where project team members belong to different administrative hierarchies

Justification: The NPM states that he managed a small team of surveyors in a previous study on university dropout. He currently has a small team working under him which he has been directing from mid-2016.

89. Relevance of NPM expertise

Project 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**	NPM's expertise includes specialised knowledge, management experience and knowledge of government policy issues and/or international issues

Justification: In his previous position the NPM has had more than 10 years' experience at the top level, carrying out a range of functions including administrative duties, staff training, strategic planning and, more recently, assessment and accreditation tasks. He also has some experience in teaching.

90. NPM's previous experience in planning, organising and conducting large-scale surveys

Project 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**	NPM has experience in several aspects of large-scale surveys, including design and data collection

Justification: The NPM had experience co-ordinating field operations for a study involving a sample of about 6 00.

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

Project 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	**NPM has sufficient seniority to represent country's interests and knowledge of the interests of different stakeholder groups**	NPM has sufficient seniority to represent the country's interests and experience interacting with different sub-national and international stakeholders

Justification: The NPM has maintained contact and relations with certain internal stakeholders and in international PISA meetings.

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

Project 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	NPM has existing relationships with stakeholders within the education system	

Justification: The NPM is responsible for representing the project in the face of public opinion, other directorates in the Ministry and a small group of stakeholders.

93. NPM knowledge of language of assessments

Project 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	The national/system co-ordinator has immediate access designated team members that are fluent in the official language(s) of the assessment	**The national/system co-ordinator is fluent in the official language(s) of the assessment**

Justification: The NPM's mother tongue is Spanish.

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

Project 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**	NPM is sufficiently fluent in English to argue a specific perspective or position and represent complex or novel issues

Justification: The NPM studied a master's degree in English language and is proficient in reading comprehension and listening, as well as writing. His speaking fluency and vocabulary are enough to communicate his ideas and take a position on technical issues, though he does not feel confident.

95. NPM's previous work experience in an education system and experience in education assessment

Project 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	**NPM has previous experience working within the education sector**

Justification: The NPM worked on assessment within the Technological University of Panama.

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

Project 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	**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**

Justification: The NPM has expertise as an **Advanced** user because he has worked in and taught computer science.

97. English proficiency of NPM

Project 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 has 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	NPM is fluent or operates professionally in English

Justification: The NPM studied a master's degree in English language and though he lacks some fluency and vocabulary he can communicate acceptable in English, however he doesn't feel confident speaking. He is proficient in reading comprehension and listening, as well as writing.

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

98. Specialised skill for scientific probability sampling

Project 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	Survey design staff have experience designing self-weighting or unweighted complex samples (multi-stage clusters and stratification)	Survey design staff have experience designing complex samples with appropriate design weights and/or performed non-response adjustments to analysis weights

Justification: At present the NC team does not have a statistician. There are statisticians within other areas of MEDUCA, albeit without experience in home sampling for Strand C of PISA-D.

99. Quality of replacement sample

Project 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	The replacement sample provides random assignment of matched replacement(s) for each school

Justification: In TERCE and PISA 2009 they were compelled to use the replacement samples assigned, but there were no replacement samples in the national assessments. In any event, administration of these tests was not the responsibility of the current team.

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

100. Management of linked data files

Project 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	**Data processing staff have experience performing data merges using primary and foreign keys**	

Justification: The statistician that was working at the NC until late 2016 had experience in merging large databases, such as those from home surveys, for instance. The rest of the team lack this proficiency.

101. Data manipulation skill: manipulating data structures

Project 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

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

Justification: The MEDUCA structure for national assessment offered a course to some staff concerning SPSS.

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

Project 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	**Data management is performed mainly using point-and-click menus**	Data management is performed using syntax files

Justification: The statistician that was working at the NC until late 2016 had advanced proficiency in SPSS, intermediate/advanced level experience in SAS and intermediate level in R. The rest of the team lack this proficiency.

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

103. NPM's and NC's Familiarity with PISA skill ontology / framework

Project output: Enhanced cognitive assessments for below-baseline proficiency levels in PISA

References: NPM Manual: NPM/NC responsibilities

Latent	Emerging	Established	Advanced
	NC staff have experience instructing students with a wide range of skill profiles	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: Only one staff member from the NC has experience teaching in high school. The team has little or no experience developing programs for salient groups of student skills.

104. NC's understanding of item response theory

Project 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	NC staff have used item response theory in limited context (e.g. scaling dichotomous responses)	NC staff have experience with multiple item response models (e.g. polytomous, Rasch, 2PL, 3PL)

Justification: Staff of the MEDUCA assessment structure do not have experience in classical theory. In previous assessments, external experts have been responsible for these analyses.

105. NC's test development skills

Project 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	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

Justification: Specialists in Spanish, Mathematics and Natural Sciences have taken part in an item preparation workshop organised by the University of the Andes. In 2016, five individuals from the MEDUCA structure for assessment and four specialist classroom teachers attended the regional workshop on item preparation on the context of PISA-D. As a result, these people are embarking on training and they cannot yet be classed as experts.

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

106. Fidelity of administration in local contexts

Project 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	Translators or staff responsible for adaptation have been trained in data collection procedures	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: Until late 2016, there was no staff in charge of translation. The only translator working at the NC has no experience in PISA data collection procedures.

107. Quality of training for data collection

Project 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	**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**	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: In previous assessments, the test applicators were teachers with experience in the classroom. Henceforth, it has been contemplated that this can also be carried out by external staff.

108. Adequacy of translator assessment background

Project 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**	Translators or staff responsible for adaptation are also professional item writers

Justification: The teachers who supported the PISA adaptation process have classroom experience.

109. Translator knowledge of PISA framework

Project 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 or knowledge of PISA framework		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

Justification: They are preparing to receive training but the frameworks need to be translated into Spanish.

110. Appropriateness of instrument translation and adaptation to local contexts

Project 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	**Translators or staff responsible for adaptation have functional knowledge of dialects or language in different contexts**

Justification: The test will be administered in Spanish, the mother tongue of the entire team.

111. Fidelity of instrument translation and adaptation to local contexts

Project 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
Translators or staff responsible for adaptation have no experience with research		Translators or staff responsible for instrument adaptation have experience with survey research or experience with questionnaire design	Translators or staff responsible for instrument adaption are knowledgeable about the constructs measured by PISA questionnaires (e.g. SES, school climate, engagement with learning, etc.)

Justification: To date the team has devoted itself to other duties and they do not have experience in research.

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

112. Response coding expertise

Project 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	Response coders have experience manually coding student responses in large-scale assessments	Response coders are recalibrated periodically based on results of reliability analysis (see Standard 11.3)

Justification: The current team has not directly taken part in coding. In the case of PISA they are studying the possibility of hiring degree students in their final years who are able to follow instructions and coding manuals.

PISA FOR DEVELOPMENT
Capacity Needs Analysis: Panama

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 Education 2030 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. Panama is one of six countries participating in the out-of-school component of the project, and the Ministry of Education, through the PISA National Centre, is responsible for the project in the country. Panama is assessing its in-school population through participation in PISA 2018. This report presents the results of an analysis of Panama 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 Panama that will be implemented by the OECD, its contractors, the Ministry of Education, and the PISA National Centre, through the PISA for Development project.

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