



**PISA FOR DEVELOPMENT
CAPACITY BUILDING PLAN:
PANAMA**



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This plan has been prepared based on the work conducted by Leonor Cariola Huerta on behalf of the OECD and the Ministry of Education of Panama (MEDUCA) as part of the PISA for Development project (PISA-D). PISA-D is an initiative of the OECD and its partners that aims to identify how the Programme for International Student Assessment (PISA) can best support evidence-based policy making in middle- and low-income countries – and contribute to the measurement and achievement of the UN-led Sustainable Development Goal (SDG) for education. In addition the project will help to build country capacity in assessment, analysis and use of results for monitoring and improvement among participating countries.

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PISA FOR DEVELOPMENT

CAPACITY BUILDING PLAN: PANAMA

1. Introduction and background

Since being launched in 2000, the Programme for International Student Assessment, or PISA, has assessed the skills of 15-year-old students in the areas of reading, mathematics and sciences. The results have provided reliable evidence for the purposes of decision making in the field of educational policies in member countries of the Organisation for Economic Co-operation and Development (OECD) and, increasingly, in other countries with experience in learning assessment. In conjunction with a number of development partners, the OECD has embarked on the PISA for Development (PISA-D) project, the aim of which is to facilitate the participation of a wider range of countries in the assessment using instruments enhanced to provide a more informative description of student performance at the lower levels of proficiency as measured by PISA and a more relevant set of contextual data for middle- and low-income countries.

Panama's participation is unique compared to other countries participating in PISA-D in that Panama had already taken part in PISA in 2009 and is currently taking part in PISA 2018. Nevertheless, it wanted to capitalise on the capacity building offered by PISA-D and to benefit from the incorporation of out-of-school 15-year-olds into its skills assessment. Moreover, it is necessary to bear in mind that Panama joined PISA-D in January 2016, even though the project had already begun in 2015.

The first stage of preparation in each participating country was to complete a Capacity Needs Analysis (CNA) (OECD, 2017). In the case of Panama, this stage began with data collection in April 2016 during an initial visit and extended through June. During a second visit in July feedback was gained in relation to the initial proposal. In August, the first draft report was issued.

The overall benchmark for the CNA is the country capacity needed in the context of the PISA-D project, defined as follows:

- 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.

PISA-D includes a Capacity Building Plan (CBP) for participating countries which is primarily intended to ensure success in participation. Greater capacity for learning assessment and analysis of results will be useful for making decisions founded on evidence and for developing educational goals subsequent to PISA-D. Training shall be given on all processes. Where possible, capacity building shall be included as part of the project in areas that are of interest to participating countries and are useful to national assessments.

Prior to implementing the project, the OECD hired the services of consultants to determine the capacity building needs of the participating countries and, on the basis of such findings, to develop this CBP and, subsequently, the Project Implementation Plan (PIP): the next stage prior to start-up. Panama began these diagnoses and planning processes later than most countries taking part in PISA-D, which had embarked on them in 2014 and 2015. As a consequence, the NC had to simultaneously begin project development and take part in the diagnosis and planning that should have been carried out earlier.

The document prior to this one – *PISA for Development Capacity Needs Analysis: Panama* – lays the foundations for the elaboration of the CBP. It sets out the framework of reference for PISA-D and details the use of this framework in the context of Panama.

The reference framework stems from the original version of the PISA requirements set out in the PISA NPM Manual (OECD, 2012a); the PISA NPM Roles and Responsibilities (OECD, 2012b); and the project outputs of PISA-D (OECD, 2013). The PISA requirements are linked to three dimensions: 1) enabling environment, 2) organisation and 3) individual.

The framework is designed to assess the capacity of participating countries to achieve the five programme outputs of PISA-D (OECD, 2013), which are:

- enhanced contextual questionnaires and data collection instruments¹
- enhanced descriptive power of cognitive assessments in reading, mathematics and sciences, at appropriate skill levels within the PISA framework
- the development of methodology and analytical framework, for including out-of-school 15-year-olds in PISA
- increased country capacity in assessment, analysis and use of results for monitoring and improvement
- engagement with the OECD and other similar countries for developing and identifying learning opportunities to enable them to contribute to the UN-led implementation of the Education Sustainable Development Goal.

The analysis of needs for Panama showed that the country is firmly placed to implement PISA-D and PISA 2018. The analysis also identified the need for capacity building to improve capabilities in each of the three dimensions: enabling environment, organisational capacity and individual skills.

The second stage of PISA-D preparation in each participating country, including Panama, is to complete the CBP based on analysis of the CNA. Panama began preparation of the CBP in August 2016 and the process went on until January 2017. The plan covers the four years of the project, from 2015 to 2019. Both PISA 2018 and PISA-D are technically complex, operatively demanding and statistically advanced; therefore, they call for certain baseline conditions. The CBP focuses on the components that make it possible to analyse results and facilitate their use to improve educational policies and the practices of the actors involved in education.

Currently, educational assessment is carried out by two different units. The Directorate for Education Assessment (DNEE) was created in 2002 and currently is in charge of Institutional (school) Assessment (including learning assessment), Teacher Assessment and the Assessment of some Special Programmes. The recently formed NC for PISA, in charge of the administration of PISA-D and PISA 2018, has been established as an independent unit reporting directly to the Minister of Education. This arrangement raises

the urgent need for intra-ministry co-ordination and support between the units in charge of learning assessment, to ensure intra-sectorial co-ordination, sharing of learning and skills, avoiding duplication of tasks and making the best possible use of scarce resources.

Panama has the need to develop a strong national assessment system. While there is strong political will to create a new Assessment Institute it does not yet have a specific calendar or an assigned budget and its functions have not yet been defined. Depending on the functions assigned to the new institute, it would require more or less staff and it is not clear if this staff would be transferred from existing units of the ministry or if new staff would be hired. The CNA suggested that until the decision on a new institute is made, it is necessary to strengthen the capacities of the teams already working on assessments in the DNEE and the PISA NC.

While the CNA was conducted for both the DNEE and the PISA NC, the focus of this CBP is to strengthen the capacity of the newly created PISA NC. This document assumes that 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 or as part of the new Assessment Institute– to ensure that the capacity building benefits of Panama’s participation in PISA 2018 and PISA-D will be maintained and the team can collaborate towards building an assessment system that functions in keeping with international standards.

2. Context

2.1 Country context

In 2015, Panama had a population of almost four million people (3 870 000). It has witnessed substantial economic growth in recent years: between 2001 and 2013, average year-to-year growth was 7.2%, more than twice the average in the region, and in subsequent years it came to 6.1% (2014) and 5.8% (2015) (World Bank, 2018a). Owing to this favourable situation, the country managed to cut poverty from 39.9% to 26.2% between 2007 and 2012. Even so, there are still big regional disparities, which may be accounted for by major social differences and institutional limitations. Poverty is prevalent in rural areas, largely populated by indigenous people. Extreme poverty stands at around 27% in rural areas, whereas it is below 4% in urban areas. Moreover, in indigenous regions, known as counties or *comarcas*, poverty exceeds 70%, and extreme poverty is above 40%. Lack of utilities – especially access to water and sewage services – still acts as a constraint in the counties (World Bank, 2018a).

The Gini coefficient in Panama remained steady between 2009 and 2013 at 0.52, one of the highest figures in the region (UNESCO, 2016a). The Gini coefficient had reached 50.7 by 2014 according to the World Bank (2018b).

Panama’s GDP in 2015 stood at USD 52 132 billion (World Bank, 2018b), while GDP per capita was USD 13 268. The average GDP per capita for Latin America and the Caribbean was USD 8 133 (World Bank, 2018b).

The Human Development Index in Panama in 2015 was 0.788, ranking it 60th in the world (UNDP, 2016).

2.2 Educational context

The education system in Panama is based on a regular sub-system and a non-regular sub-system (see Figure 1). This document will relate to the regular sub-system.

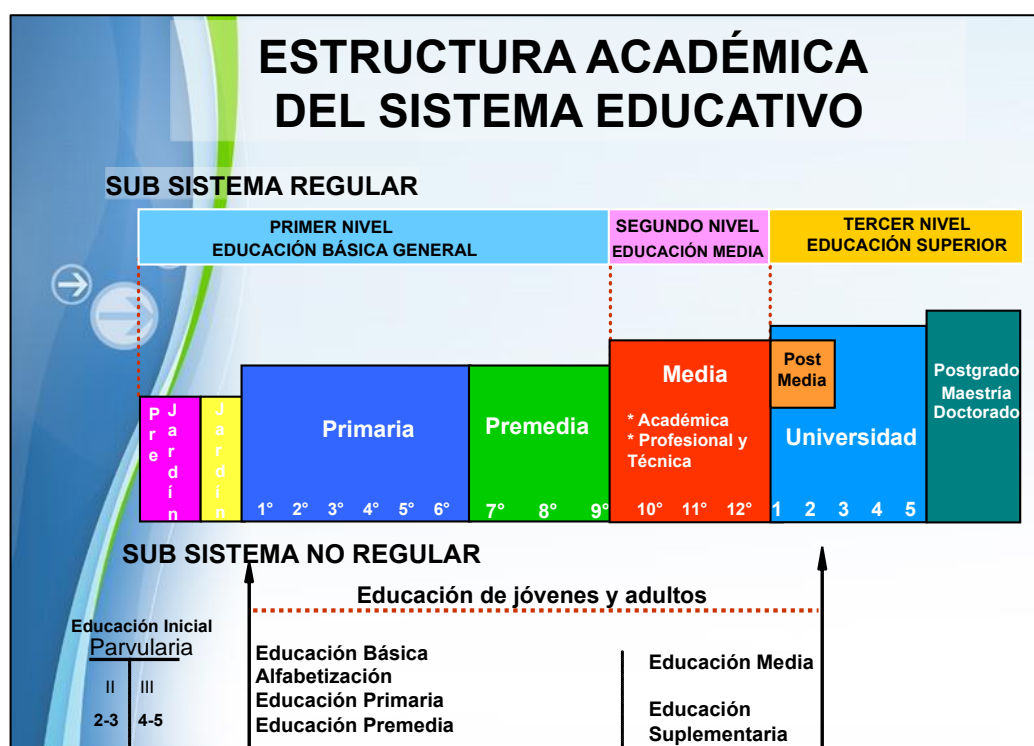
The regular sub-system incorporates three education levels. The first level is basic general education, which in turn is sub-divided into initial, including pre-kindergarten and kindergarten; primary, including

grades 1 to 6; and lower secondary (middle school), incorporating grades 7, 8 and 9. The second level relates to upper secondary education (high school), which may be academic or vocational and technical. The third, higher level includes post-secondary, university and postgraduate education.

It should be pointed out that there is a school known as the *Escuela Normal* (with about 500 students) that trains teachers to teach in 1st to 6th grade. Ninth grade graduates apply by taking an exam, and in three years they graduate with a Diploma in Education. Subsequently, after two years at the same school, they can graduate as licenciates. At the same time, the University of Panama runs a four-year programme for primary school teachers once they graduate from secondary education. Teachers graduate from the same university with qualifications to give classes in early secondary and secondary education; this takes place in the Faculty of Education, which incorporates specialist schools and awards degree certificates in a subject, for instance a Licenciante in Mathematics.

The education system structure is detailed in the following diagram.

Figure 1. Education system structure in Panama



Note: English translation of the figure: Academic structure of the education system; Regular sub-system; First level – Basic general education; Second level – Middle education; Third level – Higher education; Pre-kindergarten; Kindergarten; Primary; Pre-middle; Middle – *Academic, *Professional and technical; Post-middle – University; Postgraduate, Masters, Doctorate; Non-regular sub-system; Initial education – Nursery; Education of youth and adults; Basic education, Literacy, Primary education, Pre-middle education; Middle education, Supplementary education.

Source: Provided by José Antonio Frías G., B.A., Head of the National Curriculum Department, MEDUCA.

Compulsory education includes the entire first level of basic general education.

In Panama, total net rates of enrolment are relatively high, the figure being 97.1% in 2013 for primary level and 88.74% for (lower secondary in 2012. The gross rate for secondary education is lower, although still above other countries in Central America. A corollary to this, the rate of out-of-school children at primary level was low (3.5%) in 2013, having fallen since 2009 when it was 4.4%. However, the rate of

out-of-school adolescents at lower secondary level was 11.3%, among the highest in the region; this ties in with the gross enrolment ratio at secondary level in 2013 which was 71.49% (UIS, 2018).

Education levels among people aged 25 years and over show that education coverage has increased substantially over the past 20 years. In 2010, 38.1% of this group in Panama had followed education only as high as 6th grade or under, including those who had never attended school (17.1%), while only 22.6% of this group had followed any type of post-secondary education (UIS, 2018). The details of this breakdown are shown in the table below.

Table 1. Education level of people aged 25 and over in 2010

Education level	Percentage of the population
Unschoolled	7.3%
Incomplete primary	9.9%
Lower secondary (7th to 9th grades)	21.0%
Secondary (10th to 12th grades)	20.1%
Post-secondary and higher	22.6%

Source: UIS.Stat data base, <http://data.uis.unesco.org>.

In a ranking of countries from Latin America and the Caribbean, on the basis of the number of years of schooling of the population, Panama held the 8th spot in 1960 with an average of 4.26 years. In 2010 this figure had risen to 9.39 years and Panama was in 4th position (Universidad Bastiat, 2012).

Despite these positive indicators, in PISA 2009 students from Panama showed very low achievement with the country ranked at 62 out of the 65 participating countries (OECD, 2010a). A similar situation occurred with the Third Regional Comparative and Explanatory Study (TERCE): of the 15 participating countries, Panama was in the last four for the tests in reading and mathematics at 3rd and 6th grades and for the test in natural sciences at 6th grade (UNESCO, 2016b).

One possible explanation for this could be the huge differences in terms of quality and equality between areas and regions (OECD, 2010b), although it would be in Panama's interests to conduct research into the potential causes of these differences.

According to information from the National Directorate for Education Planning (DNEE) (MEDUCA, 2015), gross coverage at primary level varies between the different education regions from 83% in Panama province to 79% in Ngäbe-Buglé county.² Pass rates at primary level also vary between regions: in Emberá county 86.5% of pupils pass while in Herrera 98.5% attain a pass.³ One statistic that should be noted is the fact that, in the country as a whole, only 68.6% of pupils pass at early secondary level with no pending subjects, while 16.2% achieve a pass while still having three subjects pending (they must later take an exam on all pending subjects in order to pass). In addition, 39.3% fail their exams while 6.3% end up dropping out. This problem in efficiency needs to be researched in order to establish the necessary remedies. These figures should be considered reservedly as preliminary results.

2.3 Education policy challenges for Panama

As mentioned, Panama faces inequality issues in socio-economic and educational terms. This poses a major challenge for the education system as it makes it necessary to establish uniformity with regard to infrastructure conditions in the education context, and with regard to the quality of teachers and learning achievement. The country faces the need to improve the results of pupils and to reduce the disparities these results show.

In addition, there is a need to modify the structure of the Ministry of Education and the statistics areas relating to it. At present endeavours are being made along these lines, although there are still two units responsible (IT and Statistics) and neither of these include the entire private paid education system that is not compelled to report its information. Policy making requires valid, reliable statistics, particularly in order to embark on focussed policies. As a result, it would also be highly beneficial to review the organisation, co-ordination and assignment of duties to the main units.

The Ministry of Education is working very hard in order to make progress in implementing the assessment system. To do so, it has envisaged including institutions, teachers and student learning. In order to address this major challenge, all manner of resources are needed. Financial resources are available, but there is a shortfall in availability of human resources in the country.

The importance being placed on the improvement of education in various spheres and through a range of policy measures makes it necessary to consider the need for parsimony and planning in the medium- and long-term. This would be favoured with a state policy guided by major national agreements that are already being made, and by improving the organisation and co-ordination of the Ministry.

3. Summary of capacity building needs

It is important to bear in mind that Panama is taking part in regular PISA 2018 on account of the fact that it took part in PISA 2009. This means the country will apply the PISA 2018 cognitive test (not adapted for low levels of achievement) and the respective contextual questionnaires. As a result, meetings and regular activities for PISA 2018 will need to be attended, and they are included in this document. In addition, the country has opted to take part in the PISA-D capacity building and in assessing out-of-school 15-year-olds.

The CNA specified that the key capacity building needs relate to the individual dimension of the CNA framework (encompassing the staff of the NC and related organisations, in particular the NPM and their team), followed by the organisation dimension (encompassing the NC and any institutions that are involved in the implementation of the project). Individual capacity needs for assessment in general and for participation in PISA go beyond the Ministry and include the universities. In addition, most of the team working at the Ministry do not have a command of English. Attempts have been made to address this shortcoming by hiring new staff specifically for PISA, but their English is still at an elementary level according to the diagnosis carried out.

Aspects relating to data processing and analysis have the greatest capacity building needs. Lack of experience is widespread as virtually all staff currently at the Ministry and the entire national PISA team did not take part in the previous national assessments or in PISA 2009. They only took part in the final stage of the TERCE study and were highly active in its dissemination.

3.1 Capacity for enhancing contextual questionnaires and data collection instruments, as well as their implementation

Neither the National Directorate for Education Assessment (DNEE) nor the PISA team have experience in preparing contextual questionnaires. Only with the TERCE did the DNEE have the chance to study and analyse these types of questionnaires. Nevertheless, there is a history of experience with contextual questionnaires applied with national assessments in 2006.

3.2 Enhancing cognitive assessment instruments

The Ministry of Education has an agreement with the University of the Andes in Colombia to receive guidance with the design and development of national tests. In this context they have received capacity

building in order to prepare items and draft an item preparation manual. They have still not had experience in the assessment of items using item response theory (IRT) parameters, although in the context of the project they have taken part in a workshop on this area.

3.3 Capacity for assessing out-of-school 15-year-olds

In Panama, home surveys are conducted under the auspices of the National Institute for Statistics and the Census (INEC). PISA staff lack this experience and expect to rely on co-operation with INEC; otherwise, this task is expected to be outsourced to a private company. Another challenge is posed by the inaccuracy of the data available on the target population.

3.4 Capacity in assessment, analysis and use of results

Along these lines, there is huge interest in capacity training. The analysis conducted illustrated how appropriate it would be to benefit from capacity training in classical theory and in item response theory. Moreover, staff would benefit substantially from an acquaintance of the theoretical framework behind the contextual questionnaires as a form of introduction to education research for those involved. It would be pertinent for those involved to become familiar with the various types of analyses that exist for social statistics and establish what form a pertinent analysis plan for a national report would take.

4. Methodology

The CNA made it possible to classify capacity training needs into two types: those needed to implement PISA – incumbent upon the PISA NC – and those needed for national assessments – incumbent upon the DNEE. This CBP focusses essentially on capacity training needs relating to implementation of PISA, which are each in turn classified into a range of categories as set forth below:

- capacity building elements for developing the commitment of stakeholders
- capacity building elements for gaining an acquaintance of progress with new quality procedures and those established for the implementation of PISA-D
- elements for the progress in sampling of schools, students and out-of-school young people
- elements for development of products, communication and dissemination.

In order to determine the aforementioned capacity building needs, the 112 required conditions were classified into four categories according to the diagnosis described in the CNA: “Latent”, “Emerging”, “Established” and “Advanced”. For each of them there is a rubric that describes the status of those conditions. The final two categories, “Established” and “Advanced”, constitute the level needed for effective implementation of PISA-D. Each requirement that did not make it into the best category was assigned a target to be reached.

By using the <http://polymetrika.org/ILSA/> tool, a goal was assigned to each needs area.

For the areas stated, the pertinent capacity building plans were designed envisaging the five NPM meetings for PISA 2018, the eight international NPM meetings for all the PISA-D countries, the two meetings determined specifically for Strand C of PISA-D (the out-of-school component) and the four workshops in Spanish for Latin American countries taking part in PISA-D, which were determined on the basis of a diagnosis of those countries that began taking part in 2014.⁴ Moreover, support was included from partner country Mexico for certain processes. When designing this programme, the limitations of

most staff in English were taken into consideration; accordingly, capacity building elements in Spanish are decisive in order to broaden the number of qualified individuals. Consideration was also given to capacity training for activities that the country itself may embark upon with a view to developing an assessment system that would meet international standards.

Next, information was incorporated into the report concerning capacity building, and activities were established for each year according to the timeframe for PISA-D and PISA 2018, including the ten international meetings for PISA-D NPMs, the five International Advisory Group (IAG) meetings, and the five PISA 2018 NPM meetings, which had already been set. The following aspects were detailed for each activity: a description, the documents to be attached, the required reports, the responsibility of the country, administrative details, relevant documents and their cost. Some activities have already been implemented.

This task was performed in conjunction with the NPM.

5. Results of the analysis based on the capacity building reference framework and the Capacity Building Plan

The CBP was drawn up for the four-year PISA for Development cycle (2015-19). As stated, the preparation of this plan coordinated the capacity building needs with the ten international meetings that had previously been programmed and the PISA-D schedule that had been updated in March 2016.

This plan includes four capacity building aspects in Spanish to strengthen areas with the greatest need for capacity building: item development, secondary analyses and dissemination of results, which will be conducted jointly with other Latin American countries. Moreover, Panama has and may continue to engage in exchanges with partner country Mexico in order to strengthen learning in data analysis and psychometric analysis.

Certain international activities will meet several goals and, by extension, will serve several capacity building areas. When this is the case, the meeting is included in all areas but will only be budgeted for in relation to one. Accordingly, the extent to which each target will be met is known. The tables below detail the international meetings with the capacity building areas to which they contribute.

Table 2. International meetings with the capacity building areas proposed and envisaged attendees

NPM meeting (date and topics to address)	Capacity building area	Attendees (position and/or specialist area)
September 2015 – 1st meeting PISA-D contextual and cognitive reference frameworks Contextual and cognitive items Characteristics of the bank of items available Capacity building for preparation of items Strand C draft design National work on contextual questionnaires	5.2.1 Preparation, assessment and storage of responses	2 – NPM and PISA Governing Board (PGB) representative
January 2016 – 2nd meeting Capacity building for adaptation, translation and verification of all study materials Sampling Strand C: cognitive instruments and questionnaires Sampling and field operations for Strand C National work on contextual questionnaires	5.2.2 Strengthening knowledge of sampling and databases 5.2.1 Preparation, assessment and storage of responses	0
April 2016 – 3rd meeting Sampling of students and Strand C Field operations Test administrator training Changes to the technical standards of Strand C National adaptation of contextual questionnaires	5.2.2 Strengthening knowledge of sampling and databases	1 – NPM
July 2016 – 4th meeting Strand C field operations Contextual and cognitive coder training Data handling Computing co-ordination	5.1.2 Operational procedures	2 – NPM and national team
November 2016 – Meeting 4A Strand C field operations Quality assurance Strand C data processing via computer	5.1.5 Upgrading established procedures and new quality procedures for implementing PISA-D	5 – 1 NPM, 2 national team, 1 Assessment Director, 1 translator
May 2017 – 5th meeting Analysis and interpretation of pilot results Preparation for main application Sampling Progress stock take on data collection in Strand C	5.1.2 Development area for psychometric methods 5.1.3 Development of communication and dissemination products 5.2.2 School, student and out-of-school 15-year-old sampling	1 NPM
July 2017 – 6th meeting Field operations for final application Sampling of main application Test administrator training Open-ended question coding Data handling Preliminary results of Strand C pilot Instrument selection for main Strand C study Main Strand C sampling	5.2.3 Knowledge of psychometrics 5.1.2 Operational procedures 5.2.2 Strengthening knowledge of sampling and databases 5.1.8 Development area for preparation and storage of items	3 – 1 NPM, 1 national team, 1 sampling manager
May 2018 – Meeting 6A Test administration for Strand C main study Data management training	5.1.5 Upgrading established procedures and new quality procedures for implementing PISA-D 5.1.6 School, student and out-of-school 15-year-old sampling	5 – 1 PISA-D NPM, 1 PISA 2018 NPM, 3 national team

Table 2. International meetings with the capacity building areas proposed and envisaged attendees (continued)

NPM meeting (date and topics to address)	Capacity building area	Attendees (position and/or specialist area)
May 2018 – 7th meeting Scaling methodology Data analysis Mediation of reports for various audiences Progress stock take on data collection in Strand C	5.2.3 Knowledge of psychometrics 5.1.1 Dissemination of results 5.1.3 Development of analysis capacity	4 – 1 PISA-D NPM, 1 PISA 2018 NPM, 2 national team
July 2018 – 8th meeting Part 1: scaling, analysis and interpretation of definitive test results Preparation for reporting and disseminating results Part 2: plans for the national report	5.2.3 Knowledge of psychometrics 5.1.3 Development of communication and dissemination products	6 – 1 PISA-D NPM, 1 PISA 2018 NPM, 4 national team
March 2016 – IAG meeting	5.2.3 Knowledge of psychometrics	2 – NPM and PGB
May 2017 – IAG meeting	5.1.5 Upgrading established procedures and new quality procedures for implementing PISA-D	1 – NPM
May 2018 – IAG meeting	5.1.3 Development of communication and dissemination products	3 – 1 PISA-D NPM, 1 PISA 2018 NPM, 1 translator
Residency at the OECD of the senior analyst, April-June 2019	5.2.3 Knowledge of psychometrics 5.1.3 Development of communication and dissemination products	N/A

Table 3. Regional workshops in Spanish and peer co-operation

NPM meeting (date and topics to address)	Capacity building area	Attendees (position and/or specialist area)
Regional workshop 1: PISA-D item preparation, 2016	5.2.1 Development area for preparation and storage of items	1 NPM, 1 Director of Educational Assessment, 2 national team members from the national large-scale assessment (NLSA), 2 teachers of mathematics, 2 teachers of science
Regional workshop 2: Item response theory capacity building, September 2016	5.2.3. Knowledge of psychometrics	1 NPM, 1 Director of Educational Assessment, 2 national team members from the NLSA, 2 national team members from the PISA project, 2 teachers of mathematics, 2 teachers of science
Regional workshop 3: Secondary factor analysis, June 2017	5.1.1 Dissemination of results 5.1.3 Development of analysis capacity	1 national team member from the NLSA, 1 teacher of mathematics, 2 external invitees
Regional workshop 4: Relations between PISA and the media and stakeholders; experiences in the region, presentation of plans and discussion on dissemination, to be defined 2018	5.1.1 Dissemination of results 5.1.3 Development of analysis capacity	1 PISA 2018 NPM, 1 PISA-D NPM, 1 PGB, 1 Director of the NC, 1 communication team, 3 national team members from the PISA project

Capacity building needs have been identified for the following areas:

- dissemination of results
- operational procedures
- development of analysis capacity
- system for reporting education data
- creation, promotion and maintenance of an assessment support network
- infrastructure
- internal organisation of the PISA and PISA-D NC.

Generally speaking, each of these areas includes:

- the specific challenges for this area of the programme
- activities designed to reach the goals set
- indicators for monitoring these activities
- costs and funding.

5.1 Required capacity building for the current project implementation

The following priorities should be satisfied to ensure that the implementation goals are met. The project activities for the current implementation may be implemented successfully using one-time support from consultants and contractors to offset lack of existing capacity, but addressing the priorities in this section will increase the sustainability of future implementations.

5.1.1 Dissemination of results

The ultimate goal for this capacity building element is:

- To ensure a wide range of stakeholders and the general public are enabled access to information provided by the national and international assessments, likewise making sure they understand and use those assessments.

Monitoring and evaluation

Indicators	Target	Expected completion
National reports are published and distributed on each international assessment for various target audiences.	To ensure a wide range of stakeholders and the general public are enabled access to information provided by the international assessments, likewise making sure they understand and use those assessments.	March 2020

Specific capacities targeted by this programme element:

- Use of international large-scale assessment (ILSA) – advanced: Results from the ILSA are used in a variety of ways to inform decision making in the country/system. A public plan for disseminating PISA results as of 2020 encompassing various stakeholders and specific users.
- Dissemination of ILSA results – advanced: Country/system-specific results and information are regularly and widely disseminated in the country/system. An extensive, frequent dissemination plan for the international assessment will be promoted.
- Local capacity building for ILSA – advanced: The country/system offers a wide range of opportunities to learn about ILSA. Widespread dissemination of results will be programmed, along with planning for data analysis.
- Stakeholder use of ILSA data – advanced: Stakeholders directly access data for specific information. In 2019, three areas of research will be underway using the national and international test databases.
- Feedback from ILSA – advanced: Feedback to schools and educators about ILSA results are systematically made available through a communication strategy. Report or material for use by head teachers and teachers. This can be achieved provided there is an individual in charge of communications in order to develop specific materials for each user.
- Media coverage of ILSA – advanced: There is wide media coverage of the ILSA results. More complex analyses shall be offered to the press and the media. This will be possible after analysing the PISA results.

Procurements and capacity building activities

Year 2 (2016)

Activity 1	Attendance of Fourth NPM Meeting, July, Zambia. The topics covered were: capacity building around field test survey operations, scoring and coder training, and data management, including training and peer-to-peer learning activities.
Deliverables	Official mission report.
Reporting requirements	Brief staff at NC of main topics discussed during the meeting.
Country responsibilities	Provide information requested by contractors. Designate meeting participants based on profile required.
Administrative details	Make travel reservations. Secure travel permits. Read preparatory materials. Bring with necessary documentation requested by contractors.
Relevant documentation	Meeting materials provided by the contractors.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost year 2: USD 10 000

Year 3 (2017)

Activity 1	Attendance to Third Regional Workshop and reporting to team about the learning outcomes from this workshop.
Deliverables	Distribute documents on the course.
Reporting requirements	Brief staff at NC of main topics discussed during the meeting.
Country responsibilities	All staff from the NC shall be informed about the workshop, the development of it will be assessed and the Panama report plans will be addressed. Necessary to secure involvement of various national directorates attached to the Ministry and other Ministry authorities.
Administrative details	Prepare and organise the event.
Relevant documentation	Documentation provided by trainers.
Costs	USD 5 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 2	Fifth NPM Meeting, May 2017, held in Cambodia. Analysis plans for contextual questionnaires reviewed. Theoretical framework of the questionnaires (this activity is also included within the operational procedures and knowledge of psychometrics, but will merely be budgeted for here).
Deliverables	Theoretical framework of the questionnaires. Agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand, prepare a draft analysis plan, and share information using a presentation to train the remaining colleagues.
Administrative details	Make travel reservations. Secure travel permits. Read preparatory materials. Bring with necessary documentation requested by contractors.
Relevant documentation	Meeting materials provided by the contractors.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost year 3: USD 15 000

Year 4 (2018)

Activity 1	Publication prior to the test specifying its features and reference framework.
Deliverables	Descriptive flyers with information about PISA and country participation.
Reporting requirements	Wide dissemination across diverse groups of stake holders.
Country responsibilities	Take into account: plan for analysis; data analysis; writing; designing; test check; publication media.
Administrative details	Writers of materials, graphic designers, acquire distribution lists of stakeholders.
Relevant documentation	Frameworks and other descriptive documents from PISA.
Costs	USD 5 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 2	July 2018, Eighth NPM Meeting to be held in Guatemala over 8 to 10 days. The following topics will be addressed, among others: capacity building around analysis and interpretation of MS results and (Part 2) capacity building around preparations for reporting and dissemination of country reports, including training and peer-to-peer learning activities involving one or two countries already participating in PISA.
Deliverables	Summaries or instructions from manuals on software to be used. Agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Progress with plan for analysis to submit queries. Attendees: prepare the meeting, studying and sharing the documents sent beforehand.
Administrative details	Make travel reservations. Secure travel permits. Read preparatory materials. Bring with necessary documentation requested by contractors.
Relevant documentation	Meeting materials provided by the contractors.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 3	Fourth Regional Workshop, 2018. 3-day course in Spanish in Paraguay on media and stakeholder relations with PISA. Experiences in the region, presentation of plans, discussion, in readiness for preparing the country's national report.
Deliverables	Agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare dissemination plans and share them with the team. Prepare a presentation for discussion with the remaining colleagues and to be presented in the meeting.
Administrative details	Make travel reservations. Secure travel permits. Read preparatory materials. Bring with necessary documentation requested by contractors.
Relevant documentation	Meeting materials provided by the contractors.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost year 4: USD 25 000

Year 5 (2019)

There are no planned activities in this year.

Total cost Year 5: USD 0

Year 6 (2020)

Activity 1	March 2020 National report issued.
Deliverables	National report with PISA results.
Reporting requirements	Present result to ministry officials and call for press conference.
Country responsibilities	Prepare report in conjunction with OECD staff.
Administrative details	Organise report writer, co-ordinate graphic designer, printers, data analysts and reviewer.
Relevant documentation	PISA instruments, data files, statistical programmes.
Costs	USD100 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 2	Dissemination seminars for head teachers and teachers from schools.
Deliverables	Executive report and deck of slides for presentation to diverse stakeholders.
Reporting requirements	Present results to diverse groups of stake holders throughout the country.
Country responsibilities	Prepare materials and organise presentation sessions throughout the country.
Administrative details	Organise writers of materials, graphic designers, printing. Acquire list of stake holders, and issue invitations. Secure location for presentations (hotel, hall, etc.).
Relevant documentation	National report, PISA instruments, data, other supplementary information.
Costs	USD 50 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 3	Newsletter for policy-makers (at the end of each cycle of participation).
Deliverables	Brief publications with pertinent information.
Reporting requirements	Present results to diverse groups of stake holders throughout the country.
Country responsibilities	Take into account: plan for analysis; data analysis; writing; designing; test checks; publication media.
Administrative details	Organise writers of materials, graphic designers, printing. Acquire list of stake holders, and issue invitations. Secure location for presentations (hotel, hall, etc.).
Relevant documentation	National report, PISA instruments, data, other supplementary information.
Costs	USD 50 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost year 6: USD 200 000

Summary: Total capacity building element cost = USD 250 000

5.1.2 Operational procedures

The ultimate goal for this capacity building element is:

- To comply with the PISA standards in all procedures, including translation of materials for the test, data collection and coding of information. This goal includes developing a quality control system and keeping the records of it up-to-date.

Monitoring and evaluation

Indicators	Target	Expected completion
Both the consortium and the OECD accept each of the processes on time and publish the results without observations. There are records of various processes demonstrating quality controls have been performed and that a quality control system is in place.	To comply with the PISA standards in all procedures, including translation of materials for the test, data collection and coding of information. This goal includes developing a quality control system and keeping the records of it up-to-date.	January 2019

Specific capacities targeted by this programme element:

- Availability of document formatting and print specifications (manual of style) – established: Document print and specifications are maintained on servers accessible to all NC staff. A workshop shall be organised with various authors to agree on the elements for consideration and in order to standardise them.
- Fidelity of administration in local contexts – advanced: Translators or staff responsible for adaptation have been trained in ILSA data collection procedures. Staff shall be trained and have experience for the pilot test.
- Fidelity of instrument translation and adaptation to local contexts – advanced: Translators or staff responsible for instrument adaption are knowledgeable about the constructs measured by ILSA questionnaires (e.g. PISA's International Socio-Economic Index of Occupational Status [ISEI], PISA's index of economic, social and cultural status [ESCS], school climate, engagement with learning, etc.). The individuals currently working on this task will have gained experience and improved capacity building.
- Reliability of student attendance – advanced: Attendance is monitored, enforced and regular. The design and implementation of a system for monitoring and continually registering the attendance of teachers and pupils in conjunction with the Directorate for Planning, IT and other divisions of MEDUCA.
- Previous experience in planning, organising and conducting large-scale surveys – advanced: Experience in several aspects of large-scale surveys, including design and data collection. It will strengthen their capacities with experience in their day-to-day work within the DNEE.
- Response coding expertise – advanced: Response coders are recalibrated periodically based on results of reliability analysis. Comply with standards.
- Integrity of coding – established: Coders are selected from nominated applicants using transparent criteria. An open call will be issued for candidates with the appropriate profile.
- Security auditing – advanced: The NPM can manage access to secure materials through NC processes. 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.
- Household survey collection – advanced: NC already has staff or existing relationship with resources for national survey collection. A formal, effective tie will be established with the National Institute for Statistics and the Census in order to draw up the PISA-D data.
- Adequacy of translator assessment background – advanced: Translators or staff responsible for adaptation are also professional item writers. Item adaptors are being trained in item construction and they are the same individuals who are preparing the item construction manual.
- Quality of training for data collection – advanced: 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. Standards will be met in PISA and the DNEE team will be given training to serve as internal monitors.

- Relevance of NPM technical or scientific expertise – **advanced**: Expertise includes specialised knowledge of large-scale assessment (LSA) and previous experience in implementing LSA. It will strengthen their capacities with experience in their day-to-day work.
- Sufficiency of data collection staff – **advanced**: There is a sufficient number of qualified data collectors for all sites. A record of applicants shall be prepared incorporating personal particulars and profile information based on an extensive call for applications. Once trained and selected, their successive accomplishments shall be added to the record.
- Commitment of data collection staff – **advanced**: Data collection staff are specifically hired or reassigned for this role/project. 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 the Census or to outsourcing assistance from a private company with expertise in home surveys.
- Adherence to security protocols – **established**: Staff with access to secure materials receive training in security protocols. Security protocols must be in place, fulfilled and monitored for all processes involving confidential material, and staff should be trained in implementing them.

Procurements and capacity building activities

Year 1 (2015)

Activity 1	All staff of the NC shall be informed in relation to learning in the First NPM Meeting.
Deliverables	Distribute documents from the meeting and give an explanatory presentation.
Reporting requirements	Brief NC staff about information made available during the meeting.
Country responsibilities	Attendees at the meeting should prepare a presentation.
Administrative details	Prepare and organise the event, taking responsibility for a venue, attendance and material to be handed out.
Relevant documentation	Materials distributed during the 1st meeting.
Costs	USD 0
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 1: USD 0

Year 2 (2016)

Activity 1	Attendance of Second NPM Meeting considering that the meeting relates to training in KeyQuest (data processing software), questionnaire coding and overview of CBA systems. Sharing with staff from the NC.
Deliverables	Documents and presentations from the meeting.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand. Share information using a presentation to train the remaining colleagues. Administrative duties: secure travel permits.
Administrative details	Secure respective permits. Arrange travel, per diems, visas and travel insurance.
Relevant documentation	Software manuals and other documentation related to handling the software.
Costs	USD 15 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Activity 2	Third Meeting of the International Advisory Group (IAG), 28 March to 1 April 2016, held in Paraguay over three days during which upcoming tasks were planned and specific issues addressed. Sharing with staff from the NC.
Deliverables	Documents and presentations from the meeting.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand. Share information using a presentation to train the remaining colleagues.
Administrative details	Secure travel permits, secure respective permits. Arrange travel, per diems, visas and travel insurance.
Relevant documentation	Briefing materials distributed during the meeting.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 3	Attendance of Third NPM Meeting. The third meeting addressed a range of issues, including: pilot field operations; administrator training; changes to technical standards in Strand C; national adaptation of contextual questionnaires. Sharing with staff from the NC.
Deliverables	Manuals, presentations and other documents.
Reporting requirements	After the meeting, give a presentation to team members not in attendance.
Country responsibilities	Establish participants pertaining to these issues.
Administrative details	Arrange permits, travel reservations and per diems.
Relevant documentation	Briefing materials provided during the meeting.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 2: USD 35 000

Year 3 (2017)

Activity 1	May 2017, Fifth NPM Meeting held in Cambodia over 5 days. The focus of this meeting was to review the cognitive and questionnaire analyses of the Field Trial data and the proposed Main Survey instruments and questionnaires. There was also a debriefing from the Field Trial and preparation for the Main Survey (questionnaires, cognitive instruments, sampling, and survey operations) for Strands A/B.
Deliverables	Notes, presentations and manuals on aspects relating to the course: data collection and operations manual.
Reporting requirements	After the course, share information using a presentation to train the remaining colleagues.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand, carry a report on developments with data collection in Stand C.
Administrative details	Secure travel permits, travel reservations, per diems, visas and travel insurance.
Relevant documentation	Briefing materials provided during the meeting.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 2	Sixth NPM Meeting to be held in the USA in July 2017. It will address the following items: capacity building around MS survey operations, MS student sampling, test administrator training, scoring and data management for Strands A and B.
Deliverables	Agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand, prepare a report of problems encountered in the pilot (PISA 2018, if implemented already as applicable) and how they will be addressed, and give a presentation on this in the meeting. Share information using a presentation to train the remaining colleagues.
Administrative details	Secure travel permits, arrange travel reservations, per diems, visas and travel insurance.
Relevant documentation	Briefing materials provided during the meeting.
Costs	USD 15 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Activity 3	Technical support for operational procedures PISA-D Strand C.
Deliverables	Agenda, notes and supporting notes.
Reporting requirements	After the meeting, report to/train all staff on the aspects learnt.
Country responsibilities	Make preparations for receiving international expert.
Administrative details	Prepare for the meeting by reading all documentation. Travel reservations, per diems, visas, permits and travel insurance. This information should be shared with all national staff.
Relevant documentation	Briefing materials provided during the meeting.
Costs	USD 1 000
Expected additional funding	USD 2 000 (IDB)
Supported by	Ministry of Education and IDB

Total cost Year 3: USD 28 000

Year 4 (2018)

Activity 1	NPM Meeting 6-A. Capacity building for interviewing during the main stage and for handling the database.
Deliverables	Agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Meeting 6A for NPM, to be held in Senegal in May 2018 alongside the Seventh NPM Meeting for Strands A and B, and the IAG Meeting. It will address the procedures for definitive application and computer processing of the data from Strand C.
Administrative details	Prepare for the meeting by reading all documentation. Travel reservations, per diems, visas, permits and travel insurance. This information should be shared with all national staff.
Relevant documentation	Briefing materials provided during the meeting.
Costs	USD 15 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 2	Training for Coders PISA 2018.
Deliverables	Agenda, notes and supporting notes.
Reporting requirements	After the training, report to/train all staff on the aspects learnt.
Country responsibilities	Make arrangements to participate in the training.
Administrative details	Prepare for training by reading all documentation. Travel reservations, per diems, visas, permits and travel insurance. This information should be shared with all national staff.
Relevant documentation	Briefing materials provided during the training.
Costs	USD 20 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 4: USD 35 000

Year 5 (2019)

Activity 1	Implement a quality control system for each process establishing the quality indicators, the instruments and the means of assessing these indicators.
Deliverables	Quality control manual, assessment instruments based on the PISA standards.
Reporting requirements	Brief NC staff on PISA standards and QC recommendations.
Country responsibilities	Assign an individual in charge of the design.
Administrative details	Train staff on the implementation of the diverse PISA standards. Secure location for materials used in the assessment, and secure processes that will ensure quality of the instruments.
Relevant documentation	PISA standards and other operation manuals.
Costs	USD 50 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 5: USD 50 000

Summary: Total capacity-building element cost: USD 148 000

5.1.3 Development of analysis capacity

The ultimate goal for this capacity building element is:

- For the national PISA team, the Ministry and the country in general to be able to capitalise on the results as far as possible, performing complex analyses. To do so, it is necessary to rely on skills for performing multivariate and multi-level analyses that are relevant, valid and reliable to shed light on education practices and policies.

Monitoring and evaluation

Indicator	Target	Expected completion
The NC has a team of analysts, led by one senior, who have the ability to design, analyse and draft a report using IRT scores which incorporates multivariate and multi-level analysis. Reports prepared for various readerships aimed at enhancing education practices and policies.	For the national PISA team, the Ministry and the country generally to be able to capitalise on the results as far as possible, performing complex analyses. To do so, it is necessary to have skills for performing multivariate and multi-level analyses that are relevant, valid and reliable to shed light on education practices and policies.	

Specific capacities targeted by this programme element:

- Perceptions of external survey-based large-scale assessment (LSA) of lower-level stakeholders – **advanced**: Recognise external uses of LSA information and make internal use of LSA results to inform policy and practice. To prepare the plan for the analysis of PISA results centred on policy making.
- NPM experience with dissemination of results from large scale assessment – **advanced**: Reporting using multiple narratives to multiple audiences, referencing relevant data where appropriate. 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.
- Relevance of NPM policy expertise – **established**: Expertise is related to local or regional educational policy or policy research. The investment in human resources shall be strengthened and greater numbers of qualified staff shall be recruited.

Procurements and capacity building activities

Year 3 (2017)

Activity 1	Third regional workshop, August 2017, course in Spanish in Honduras on comprehensive secondary analyses of large-scale assessment data, particularly for impact and policy analysis. It will run over 5 days including theory, practical assignments and general discussions.
Deliverables	Agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand.
Administrative details	Secure travel permits, secure respective permits. Arrange travel, per diems, visas and travel insurance.
Relevant documentation	Briefing materials distributed during the meeting.
Costs	USD 5 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 3: USD 5 000

Year 4 (2018)

Activity 1	Fifth IAG Meeting, May 2018. Fifth IAG Meeting over 3 days addressing project planning and topic-based analyses in Senegal. The primary goal is to review the procedures for definitive implementation of PISA-D and the plans for reporting results.
Deliverables	Agenda, notes and presentations of the course.
Reporting requirements	After the meeting, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand.
Administrative details	Secure travel permits, secure respective permits. Arrange travel, per diems, visas and travel insurance.
Relevant documentation	Briefing materials distributed during the meeting.
Costs	USD 20 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 2	July 2018, Eighth NPM Meeting to be held in Guatemala over 8 to 10 days. The following topics will be addressed, among others: preparation for reporting and disseminating results; plans for the national report. To be attended by 6 people.
Deliverables	Agenda, notes and presentations of the course.
Reporting requirements	After the meeting, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand.
Administrative details	Secure travel permits, secure respective permits. Arrange travel, per diems, visas and travel insurance.
Relevant documentation	Briefing materials distributed during the meeting.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education
Activity 3	International PISA 2018 Data Analysis Workshop.
Deliverables	Agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand.
Administrative details	Secure travel permits, secure respective permits. Arrange travel, per diems, visas and travel insurance.
Relevant documentation	Briefing materials distributed during the meeting.
Costs	USD 50 000
Expected additional funding	USD 0

Total cost Year 4: USD 80 000

Year 5 (2019)

Activity 1	Senior analyst training. Stay of a senior analyst for two or three months at the OECD, Paris to train in analysis methods and psychometric methods. April-June 2019
Deliverables	Trip report to NC staff
Reporting requirements	Upon return, the analyst shall work with and train other analysts
Country responsibilities	Select ideal candidate with a commitment to remaining in the post for at least two years
Administrative details	The OECD will fund the course and, ultimately, the country should settle travel reservations
Relevant documentation	Briefing materials provided during the meeting
Costs	USD 20 000
Expected additional funding	USD 20 000 from OECD
Supported by	Ministry of Education
Activity 2	Statistical analyses. According to the plan, the pertinent statistical analyses shall be conducted. Interpretations of those analyses shall be discussed in a team
Deliverables	Table for international reports
Reporting requirements	Brief NC staff about methods and procedures
Country responsibilities	Select person to conduct analysis
Administrative details	Hire analyst, secure computing systems for performance of the analysis
Relevant documentation	Data analysis manual and technical documentation
Costs	USD 100 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 5: USD 140 000

Summary: Total capacity-building element cost: USD 225 000

5.1.4 Promotion and establishment of an assessment system

The ultimate goal for this capacity building element is:

- To formalise participation in PISA and other future international assessments in order to provide stability in assessment over time regardless of changes of government, guaranteeing dissemination of results and developing and implementing a state education assessment policy.

Monitoring and evaluation

Indicators	Target	Expected completion
A medium-term international assessment plan is in place (5 to 10 years) that is publicly disseminated and has guaranteed funding.	To formalise participation in PISA and other future international assessments in order to provide stability in assessment over time regardless of changes of government, guaranteeing dissemination of results and developing and implementing a state education assessment policy.	June 2019

Specific capacities targeted by this programme element:

- Setting clear policies for ILSA – established: The policy document is available to the public. The commitments to the assessment of learning quality shall be made public.
- Funding for NPM/NC for international training and meetings – advanced: Dedicated funds are available for participation in international training and meetings.
- Expectations for NLSA – advanced: There is a written NLSA plan for the coming years. To design and disseminate a ten-year assessment plan.

- Having regular funding for ILSA – advanced: There is regular funding approved by law, decree or norm. Through the Educational Dialogue area, demand for assessment is expected to receive a boost in order to define a timeframe for assessments in the medium-term.
- Autonomy of NLSA structures – advanced: Political considerations never obstruct technical or scientific priorities. The DNEE, the PISA NC and the National Institute for Assessment is to be highly technical in nature and, as a result, will be respected in that capacity. Therefore, various means are used in order to avoid staff rotation.
- Adequacy of NLSA funding – established: Funding covers all core NLSA activities: design, administration, analysis and reporting. As described, the Education Quality Assurance and Strengthening Project guarantees funds for the key components of assessment and investments are being made in human resources from the DNEE in order to support these activities.
- Stability of NLSA programme – established: The NLSA is a stable programme that has been operating regularly. The national assessment shall be institutionalised by means of a legal document assuring its sustainability and operation in time in a regular, systematic manner. One viable alternative is to set up an independent National Institute for Assessment, and this is being reviewed at present.
- Having regular funding for NLSA – established: There is regular funding allocated to the NLSA. A project is in place for investment to be used by the DNEE known as the Education Quality Assurance and Strengthening Project, which was earmarked one million US dollars in funds for 2016. These funds are to meet learning assessment needs, including the PISA, Regional Comparative and Explanatory Study (ERCE) and national tests. According to MEDUCA’s chief of programming and investments, these projects typically remain in the budget and persist in time. Moreover, he stated that in conjunction with the Educational Dialogue area, civil society would not agree to reduce the number of assessments. However, a change of government may alter these circumstances.
- Transparent policy for NLSA – established: The policy document is available to the public. The official document shall be made public via the website.
- Clear statement of purpose for participation in NLSA – established: There is a formal policy document that authorises the NLSA. To have a document officially determining the regularity of assessments.

Procurements and capacity building activities

Year 4 (2018)

Activity 1	To formalise the National Institute for Assessment
Deliverables	Document establishing the Institute for Assessment
Reporting requirements	Disseminate the establishment of the Institute among stakeholders
Country responsibilities	Prepare document establishing the Institute
Administrative details	Secure relevant permits for the establishment of the Institute
Relevant documentation	Documents establishing other centres and education committee documents
Costs	USD 1 000 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 4: USD 1 000 000

Summary: Total capacity-building element cost: USD 1 000 000*5.1.5 System for reporting education data*

The ultimate goal for this capacity building element is:

- To benefit from a uniform system for thorough, comprehensive and up-to-date education reporting that simplifies the performance of various types of studies which is updated yearly and makes it possible to monitor the educational track record of each student over the years.

Monitoring and evaluation

Indicator	Target	Expected completion
To benefit from a database refreshed yearly relying on an ID for each student and including public and private schools.	To benefit from a uniform system for thorough, comprehensive and up-to-date education reporting that simplifies the performance of various types of studies which is updated yearly and makes it possible to monitor the educational track record of each student over the years.	December 2020

Specific capacities targeted by this programme element:

- Level of detail in administrative student data – advanced: Students have profiles and personal identification numbers that persist across grades and schools. The Statistics division in MEDUCA is producing a project to improve information databases by using an automated data centralisation system that envisages a range of pertinent variables.
- Quality of school sample frame – advanced: education management information system (EMIS) is updated annually with an accurate frame. The Statistics division within MEDUCA is producing a project to improve information databases by using an automated data centralisation system that envisages a range of pertinent variables.

Procurements and capacity building activities**Year 6 (2020)**

Activity 1	To establish a system for public consultation of education data.
Deliverables	Online education data consultation system.
Reporting requirements	Disseminate existence of education data consultation system. Creation of user manual.
Country responsibilities	Update information in education system and perform information quality checks.
Administrative details	Secure suitable computer equipment, servers, programmers and data input.
Relevant documentation	Several records of data at school, student, teacher and sector level.
Costs	USD 500 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 6: USD 500 000

Summary: Total capacity-building element cost: USD 500 000*5.1.6 Creation, promotion and maintenance of an assessment support network*

The ultimate goal for this capacity building element is:

- To deliver a greater level of information to stakeholders, becoming a credible, informative source; to receive feedback on the information and rely on their support to enhance dissemination.

Monitoring and evaluation

Indicator	Target	Expected completion
Frequently scheduled meetings are held with various stakeholders to engage in two-way communication in relation to assessment. The general public, schools and policy makers call for a larger number of reports or visit the website more times.	To deliver a greater level of information to stakeholders, becoming a credible, informative source; to receive feedback on the information and rely on their support to enhance dissemination.	March 2018

Specific capacities targeted by this programme element:

- Efficiency of communication protocols – advanced: NPM can engage most stakeholders as a peer. Through daily work and experience, the NPM will set about strengthening ties with a greater number of stakeholders.
- Knowledge of, and the confidence to deal with, government agencies, school principals, parents and teachers within their own countries – established: NPM has existing relationships with stakeholders within the education system. The NPM will strengthen their capacities through experience with his day-to-day work.
- Effect of political climate on implementation – advanced: All relevant political bodies (government and opposition) actively support the project. There will be an assessment dissemination plan covering the key users which aims to ensure they commit to the goals of the assessment.
- Communication with stakeholders – established: NC provides regular updates or bulletins to stakeholders. An Advisory Assessment Committee will be set up. It will be reported to on a regular basis and feedback sought for the results report. Likewise, members of the Committee may disseminate information on the assessment within their contexts. This Committee shall be formed by leading actors in the education system (head teachers, teachers, trainers of educators, etc.); representatives from civil society interested in education; representatives from the political sphere; experts in assessment; guilds and other pertinent parties.

Procurements and capacity building activities

Year 4 (2018)

Activity 1	To create and place into operation a body to support assessment. To set up an Advisory Assessment Committee whose goal is to establish a group for sharing political and technical aspects with various shareholders which, aside from supporting internal decisions (for instance, issues linked to the national report), will forge ties between the NC and various target groups. The Committee may constitute the equivalent of or be a sub-group of existing groups, such as the Educational Dialogue area.
Deliverables	Memorandum of association of the advisory committees.
Reporting requirements	Report to pertinent bodies about the existence of advisory committees.
Country responsibilities	Administer nominations, invitations and secure their consent. Proposed list and definitive list for the committee with data in order to establish positions. Record and documentation of grids and minutes of meetings held. Administrative steps to formalise the invitation in writing. Document setting out committee goals to be attached to the letter.
Administrative details	Set timeframe for meetings and work, meeting venues, items to discuss, agenda. Send invitations and make travel arrangements for committee members.
Relevant documentation	Memorandum of association and working agenda.
Costs	USD 100 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 4: USD 100 000

Summary: Total capacity-building element cost: USD 100 000

5.1.7 Infrastructure

The ultimate goal for this capacity building element is:

- To establish the physical conditions for conducting assessments at the PISA NC, including aspects relating to construction, furniture and technology.

Monitoring and evaluation

Indicators	Target	Expected completion
Facilities suitably designed for individual and group work with security at entrances and suitable furniture for safekeeping of confidential materials. All physical assessment material to have restricted access. Server for confidential information. One computer for each official with the required software and licenses.	To establish the physical conditions for conducting assessments at the PISA NC, including aspects relating to construction, furniture and technology.	June 2019

Specific capacities targeted by this programme element:

- Computing environment – advanced: Dedicated workplace PCs for all staff with standard software and network access. Purchase of specialist software and equipment, including a server to host the DNEE's confidential information.

Procurements and capacity building activities

Year 5 (2019)

Activity 1	To obtain and endow facilities with security. Facilities will be remedied to meet PISA working requirements, i.e. including secure furniture for filing paper documents, a server for backing up e-files, rooms with security for coding of material and a security guard at the entrance to the work place.
Deliverables	Secure working environment that meets all relevant conditions.
Reporting requirements	Not applicable.
Country responsibilities	Obtain physical space. Determine the arrangements needed to ensure the facilities are ready. Arrange approval of this plan. List and/or invite to tender the overhaul needed.
Administrative details	Secure permits for the overhaul and construction.
Relevant documentation	PISA technical standards that outline security and other features of the facilities.
Costs	USD 1 000 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 5: USD 1 000 000

Summary: Total capacity-building element cost: USD 1 000 000

5.1.8 Internal organisation of the PISA and PISA-D NC

The ultimate goal for this capacity building element is:

- To benefit from an organisational structure at the PISA NC that is conducive to assessment where all specialist work relies on at least one highly specialised individual in the task (for certain tasks, cooperation may be sought from staff working for other Ministry divisions) enabling staff to train and specialise in their various fields, thus encouraging greater efficiency.

Monitoring and evaluation

Indicator	Target	Expected completion
Organisational structure that answers for various functions the DNEE needs to fulfil with specialists for each of these functions. Intra-ministerial agreements making it possible to receive support for shorter tasks that do not require a constant specialist on the team, i.e. disciplinary experts.	To benefit from an organisational structure at the PISA NC that is conducive to assessment where all specialist work relies on at least one highly specialised individual in the task (for certain tasks, cooperation may be sought from staff working for other Ministry divisions) enabling staff to train and specialise in their various fields, thus encouraging greater efficiency.	January 2018

Specific capacities targeted by this programme element:

- Having strong organisational structures for NLSA – advanced: The NLSA office is an independently-funded agency, institution, or unit. To design and plan implementation of the project to set up the Assessment Institute that is already being reviewed.
- NPM regularity of communication – advanced: NPM can process all incoming email and voicemail each day. The NPM organises his work in conjunction with his team in a more effective manner in order to be able to meet any requirements demanded of him on a daily basis.
- A sufficient level of oral and written communication skills in English as all meetings and communications with the OECD Secretariat and with the International Contractor will be in English – advanced: Sufficiently fluent in English to argue a specific perspective or position and represent complex or novel issues. They will strengthen their capacities with experience in their everyday work within the DNEE. Moreover, a specialist in English will be hired who will teach English at two levels for those involved and other interested parties as part of the work.
- Effectiveness of human resources for ILSA – established: The ILSA office is adequately staffed or trained to carry out the ILSA effectively, with minimal issues. To complete a structure for technical staff within the PISA NC specialising in the various assessment processes.
- NC co-ordination – established: Staff meetings are scheduled and attended regularly. To arrange coordination meetings and use a computer tool allowing meetings and activities to be coordinated.
- Skill in managing a team of project staff who carry out multiple tasks often needing simultaneous attention – advanced: Experience in a matrix management structure, where project team members belong to different administrative hierarchies. They will boost their capacity with experience in their day-to-day work.
- Engagement of clerical/administrative support – established: Clerical support distributes outgoing correspondence from NC. A bilingual administrative assistant shall be recruited to contribute to administering the PISA project and to take responsibility for documenting and coordinating logistics, finance, meetings, etc., whilst establishing a recording and filing system.

- Scheduling priority given to ILSA activities – established: NC staff manage their own schedules and may reschedule ad hoc meeting requests. To hire a consultancy firm and/or encourage attendance of a diploma course on managing work organisation support projects.
- English proficiency – established: English as a second language but ability to operate professionally primarily in other language. This will be overcome with experience and practice.

Procurements and capacity building activities

Year 4 (2018)

Activity 1	To establish an organisational chart of the NC. In principle, the NC should benefit from an organisational chart setting out the functions its staff shall fulfil, regardless of how minimal, and relations and dependency with regard to the Ministry and/or other state organisations.
Deliverables	Organisational chart of the NC.
Reporting requirements	Dissemination among stakeholders.
Country responsibilities	Hire personnel.
Administrative details	Hire personnel, create job descriptions for the different roles within the organisation.
Relevant documentation	NPM manual, PISA Technical Standards, other organisational charts of other centres with similar functions.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 4: USD 10 000

Summary: Total capacity-building element cost: USD 10 000

5.2 Aspirational capacity building for large scale assessments and the education sector

The following priorities are not essential for minimum implementation. However, they represent goals within the education sector that may be reached more easily or efficiently if they are pursued during and/or integrated with the implementation schedule.

5.2.1 Preparation, assessment and storage of responses

The ultimate goal for this capacity building element is:

- To develop the skills needed to draw up and design tests to assess learning that meet the conditions needed to obtain valid, reliable results that are also useful in enhancing education practices and policy-making.

Note: this element also strives to strengthen the capacities of officials from the DNEE not just from the PISA NC. The attendees were: 1 NPM, 1 Director of Educational Assessment, 2 national team members from the NLSA, 2 teachers of mathematics and 2 teachers of science.

Monitoring and evaluation

Indicator	Target	Expected completion
Items are prepared with a standardised procedure that includes classical and IRT-based analysis. Tests are calibrated using IRT.	To develop the skills needed to draw up and design tests to assess learning that meet the conditions needed to obtain valid, reliable results that are also useful in enhancing education practices and policy making.	December 2019

Specific capacities targeted by this programme element:

- Use of test development software – established: Test development software is used by one or two specialists who are responsible for data entry or conversion. An individual will be hired with a suitable profile to be trained and reach this level. If this cannot be done, skills will be developed among the existing staff until an individual may be suitably trained.

Procurements and capacity building activities

Year 1 (2015)

Activity 1	To attend and share findings from the First PISA-D NPM Meeting held in Ecuador and attended by the NPM and the PGB. The following issues were addressed: existing PISA cognitive and contextual assessment frameworks, characteristics of the available item pools, and capacity building around item development, including training and peer-to-peer learning activities.
Deliverables	Reference frameworks, agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand. Share information using a presentation to train the remaining colleagues.
Administrative details	Secure travel permits, arrange travel reservations and per diems, visas and travel insurance.
Relevant documentation	Reference frameworks, agenda, notes and presentations of the course.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 1: USD 10 000

Year 2 (2016)

Activity 1	To take part in and share the results of the First Regional Workshop held in June 2016 in Quito. Course in Spanish on reference frameworks and item preparation centred on understanding the design and implementation of large-scale assessments using the PISA reference framework as an example. Held in Ecuador in which 6 individuals from Panama took part.
Deliverables	Reference frameworks in Spanish, agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt.
Country responsibilities	Attendees: prepare the meeting, studying and sharing the documents sent beforehand. Share information using a presentation to train the remaining colleagues.
Administrative details	Secure travel permits, arrange travel reservations and per diems, visas and travel insurance.
Relevant documentation	Reference frameworks, meeting agenda, notes and presentations of the course.
Costs	USD 30 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 2: USD 30 000

Summary: Total capacity-building element cost: USD 40 000

5.2.2 Strengthening knowledge of sampling and databases

The ultimate goal for this capacity building element is:

- To develop capacities for weighted sampling of varying levels of complexity based on suitable handling of large databases using sample- or results-based frameworks.

Monitoring and evaluation

Indicator	Target	Expected completion
The PISA NC benefits from experts with complex sampling capacity with replacement units using large databases that may need to be reviewed and made compatible.	To develop capacities for weighted sampling of varying levels of complexity based on suitable handling of large databases using sample- or results-based frameworks.	December 2017

Specific capacities targeted by this programme element:

- Specialised skill for scientific probability sampling – established: Designed self-weighting complex samples (multi-stage clusters and stratification). Training and experience will encourage refinement of the recently hired statistician.
- Data manipulation skill: fluency with statistical software (e.g. SPSS, SAS) – advanced: Data management is performed using syntax files. Syntax files will be used to prepare the national report.
- Data manipulation skill: manipulating data structures – advanced: Staff have experience constructing or parsing proprietary formatted data files and text-based data files with defined formats.
- Quality of replacement sample – advanced: Replacement sample provides random assignment of matched replacement(s) for each school. Standards shall be met.

Procurements and capacity building activities**Year 2 (2016)**

Activity 1	To take part in and share the results of the Third PISA-D NPM Meeting, which addressed various issues including student sampling.
Deliverables	Presentations, notes and bibliography.
Reporting requirements	After meeting, train team members who did not attend.
Country responsibilities	Establish participants that will be responsible for sampling.
Administrative details	Arrange travel reservations, per diems and permits.
Relevant documentation	Presentations, notes and other supporting materials for the meeting.
Costs	USD 10 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 2: USD 10 000

Year 3 (2017)

Activity 1	May 2017, Fifth NPM Meeting to be held in Cambodia. Various issues will be addressed including student sampling. One individual will attend this meeting over 5 days
Deliverables	Notes, presentations and manuals on aspects relating to the course. Database and sampling manuals
Reporting requirements	After course, report to/train all staff on aspects learnt
Country responsibilities	Provide attendees with notebooks incorporating the necessary programmes. Attendees: prepare the meeting, studying and sharing the documents sent beforehand. Share information using a presentation to train the remaining colleagues
Administrative details	Secure travel permits, arrange travel reservations, per diems, visas and travel insurance
Relevant documentation	Presentations, notes and other supporting materials for the meeting
Costs	USD 5 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 3: USD 5 000

Summary: Total capacity-building element cost: USD 15 000

5.2.3 Knowledge of psychometrics

The ultimate goal for this capacity building element is:

- To perform psychometric analyses in the national tests using IRT.

Note: this capacity building element only relates to the national tests and staff from the DNEE; it does not relate to the PISA NC. The attendees were: 1 Director of Educational Assessment, 2 national team members from the NLSA, 2 teachers of mathematics and 2 teachers of science.

Monitoring and evaluation

Indicator	Target	Expected completion
To benefit from a senior analyst able to score and calibrate tests using IRT, and able to process the information to obtain the required parameters. Item developers are able to interpret IRT parameters to select, discard or amend items.	To perform psychometric analyses in the national tests using IRT.	December 2018

Specific capacities targeted by this programme element:

- Item response theory – established: Have used item response theory in limited context (e.g. scaling dichotomous responses). They shall practice to learn.

Procurements and capacity building activities

Year 2 (2016)

Activity 1	Induction course on large-scale education assessment as part of the Technical Consultancy Programmes (PAT) offered by the National Institute for Education Assessment (INEE) of Mexico. It is considered a basic course and no prior knowledge in the field of assessment is needed; thus, it is suitable for any novice in the field. During the preparation of this document, it was agreed as a means of overcoming shortcomings in knowledge of classical analysis. It was given within the context of Mexico's cooperation as a partner country of Panama in PISA-D. It was attended by around 30 individuals from the Ministry of Education and the DNEE. http://cursos.inee.edu.mx/login/index.php
Deliverables	Bibliography, online course, class notes.
Reporting requirements	End-of-course assessment. Register of activities carried out and assessment thereof.
Country responsibilities	Participants have an online preparation period based on readings and forums. Face-to-face attendance of course taught by lecturers from the INEE (2016). Organise and agree on the time needed to study. Make time available in accordance with agreements.
Administrative details	Benefit from venue for face-to-face training, benefit from software and equipment needed for this training. Arrange travel reservations and accommodation for PISA partners.
Relevant documentation	Documents provided during workshop.
Costs	USD 5 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Activity 2	Attend and share the results of the Second Regional Workshop, September 2016, in Guatemala: a course in Spanish on “Methods and techniques for analysing and scaling cognitive items using IRT, especially for preparing cognitive assessment instruments and, in particular, for preparing items for the assessment of knowledge and skills in reading comprehension, mathematics and sciences, in order to improve their national assessments”. This course lasted one week and was given in Guatemala. It was attended by 2 of the PISA NC individuals, 1 NPM from the PISA NC, 1 Director of Educational Assessment, 2 national team members from the NLSA, 2 teachers of mathematics and 2 teachers of science.
Deliverables	Manuals for use of required software. Agenda, notes and presentations of the course.
Reporting requirements	After course, report to/train all staff on aspects learnt. Share information using a presentation to train the remaining colleagues.
Country responsibilities	Provide attendees with notebooks incorporating the necessary programmes. Attendees: prepare the meeting, studying and sharing the documents sent beforehand.
Administrative details	Secure travel permits, arrange travel reservations, per diems, visas and travel insurance.
Relevant documentation	Presentations, notes and other supporting materials for the meeting.
Costs	USD 20 000
Expected additional funding	USD 0
Supported by	Ministry of Education

Total cost Year 2: USD 25 000

Summary: Total capacity-building element cost: USD 25 000

Table 4. Overall cost summaries

Total costs by element

	Capacity building element	Total (USD)
1	Dissemination of results	250 000
2	Operational procedures	148 000
3	Development of analysis capacity	225 000
4	Promotion and establishment of an assessment system	1 000 000
5	System for reporting education data	500 000
6	Creation, promotion and maintenance of an assessment support network	100 000
7	Infrastructure	1 000 000
8	Internal organisation of the National Directorate for Education Assessment (DNEE) operating as the PISA and PISA-D NC	10 000
9	Preparation, assessment and storage of responses	40 000
10	Strengthening knowledge of sampling and databases	15 000
11	Knowledge of psychometrics	25 000
	Total	3 313 000

Table 5. Indicators, targets and expected completion dates

	Indicators	Target	Expected completion
Dissemination of results	National reports are published and distributed on each international assessment for various target audiences.	To ensure a wide range of stakeholders and the general public are enabled access to information provided by the international assessments, likewise making sure they understand and use those assessments.	March 2020
Operational procedures	Both the consortium and the OECD accept each of the processes on time and publish the results without observations. There are records of various processes demonstrating quality controls have been performed and that a quality control system is in place.	To comply with the PISA standards in all procedures, including translation of materials for the test, data collection and coding of information. This goal includes developing a quality control system and keeping the records of it up-to-date.	January 2019
Development of analysis capacity	The NC has a team of analysts, led by one senior analyst, who have the ability to design, analyse and draft a report using IRT scores which incorporates multivariate and multi-level analysis. Reports prepared for various readerships aimed at enhancing education practices and policies.	For the national PISA team, the Ministry and the country generally to be able to capitalise on the results as far as possible, performing complex analyses. To do so, it is necessary to have skills for performing multivariate and multi-level analyses that are relevant, valid and reliable to shed light on education practices and policies.	
Promotion and establishment of an assessment system	A medium-term international assessment plan is in place (5 to 10 years) that is publicly disseminated and has guaranteed funding.	To formalise participation in PISA and other future international assessments in order to provide stability in assessment over time regardless of changes of government, guaranteeing dissemination of results and developing and implementing a state education assessment policy.	June 2019
System for reporting education data	To benefit from a database refreshed yearly relying on an ID for each student and including public and private schools.	To benefit from a uniform system for thorough, comprehensive and up-to-date education reporting that simplifies the performance of various types of studies which is updated yearly and makes it possible to monitor the educational track record of each student over the years.	December 2020
Creation, promotion and maintenance of an assessment support network	Frequently scheduled meetings are held with various stakeholders to engage in two-way communication in relation to assessment. The general public, schools and policy makers call for a larger number of reports or visit the website more times.	To deliver a greater level of information to stakeholders, becoming a credible, informative source; to receive feedback on the information and rely on their support to enhance dissemination.	March 2018
Infrastructure	Facilities suitably designed for individual and group work with security at entrances and suitable furniture for safekeeping of confidential materials. All physical assessment material to have restricted access. Server for confidential information. One computer for each official with the required software and licenses.	To establish the physical conditions for conducting assessments at the PISA NC, including aspects relating to construction, furniture and technology.	June 2019
Internal organisation of the National Directorate for Education Assessment (DNEE) operating as the PISA and PISA-D NC	Organisational structure that answers for various functions the DNEE needs to fulfil with specialists for each of these functions. Intra-ministerial agreements making it possible to receive support for shorter tasks that do not require a constant specialist on the team, i.e. disciplinary experts.	To benefit from an organisational structure at the PISA NC that is conducive to assessment where all specialist work relies on at least one highly specialised individual in the task (for certain tasks, cooperation may be sought from staff working for other Ministry divisions) enabling staff to train and specialise in their various fields, thus encouraging greater efficiency.	January 2018

Table 5. Indicators, targets and expected completion dates (continued)

Preparation, assessment and storage of responses	Items are prepared with a standardised procedure that includes classical and IRT-based analysis. Tests are calibrated using IRT.	To develop the skills needed to draw up and design tests to assess learning that meet the conditions needed to obtain valid, reliable results that are also useful in enhancing education practices and policy making.	December 2019
Strengthening knowledge of sampling and databases	The PISA NC benefits from experts with complex sampling capacity with replacement units using large databases that may need to be reviewed and made compatible.	To develop capacities for weighted sampling of varying levels of complexity based on suitable handling of large databases using sample- or results-based frameworks.	December 2017
Knowledge of psychometrics	To benefit from a senior analyst able to score and calibrate tests using IRT, and able to process the information to obtain the required parameters. Item developers are able to interpret IRT parameters to select, discard or amend items.	To perform psychometric analyses in the national tests using IRT.	December 2018

NOTES

- 1 The framework is also applicable to the cognitive tests and questionnaires in PISA 2018.
- 2 This information should be taken reservedly as it may reflect disparities in the quality of the statistics produced in the various regions.
- 3 Once again, this should be viewed with reservation because the criteria for qualification may vary more than the learning outcomes.
- 4 Capacity building in Spanish for Latin American countries shall be funded by the IDB, although travel and per diem expenses shall be covered by national funds.

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Capacity Building Plan: Panama

PISA for Development is an initiative of the OECD and its partners that aims to identify how its Programme for International Student Assessment (PISA) can best support evidence-based policy making in emerging and developing economies – and contribute to the UN-led definition of global learning goals for the post-2015 agenda. In addition the project will help to build country capacity in assessment, analysis and use of results for monitoring and improvement among participating countries. 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 plan covers the six-year PISA for Development cycle (2015-2020) and includes costed learning activities related to the implementation schedule of the project in Panama. PISA for Development is technically complex, operationally demanding and statistically advanced, and the capacity building plan therefore focuses on PISA components that will allow Panama to benefit from international benchmarking and from evidence on student performance derived from multivariate analyses, while also gaining capacity and competencies to raise the quality of its own national assessments through the use of item response theory methodology, rigorous international standards of implementation and increased analysis to provide explanations for the results.

The results from the Capacity Needs Analysis: Panama report have been used to design this 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.