PISA FOR DEVELOPMENT

CAPACITY BUILDING PLAN:
ECUADOR

FOR DEVELOPMENT

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ACKNOWLEDGEMENTS

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1. Introduction and background

Since being launched in the year 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 the World Bank, the OECD has embarked on the PISA for Development (PISA-D) project the aim of which is to facilitate the participation of countries with less assessment experience in a test comparable to the PISA standard, adapted to lower than average achievement in order to provide a more accurate description of levels below that defined as low by the PISA standard.

The initial stage of preparation in each participating country – including Ecuador – was to complete a capacity needs analysis (CNA). The overall benchmark to reach in the CNA is the 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 National Centre (NC) and the National Project Manager (NPM), to solve the 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. Indeed, 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 World Bank and 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.

This document elaborates the CBP. It sets out the framework of reference for PISA-D and details the use of this framework in the context of Ecuador.

The reference framework stems from the original version of the PISA requirements set out in the NPM Manual PISA (OECD, 2012a); the NPM Roles and Responsibilities PISA (OECD, 2012b); and the stated programmed outputs of PISA-D. 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 instruments

- 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 discussions on the post-2015 education framework goals.

The analysis of needs for Ecuador showed that the country and the National Institute for Education Assessment (INEVAL), the NC designated for implementing PISA-D in Ecuador, are firmly placed to achieve that task. Nonetheless, 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 in each participating country was to complete the CBP based on the CNA. The plan covers the three years of the project, from 2015 to 2018, and includes the costs of the learning activities relating to the project implementation timescale and the terms of reference for contractors in charge of implementation. PISA-D is technically complex, operatively demanding and statistically advanced. 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. Another relevant aspect of the outstanding qualities of PISA is the design of items and the ability of the test to gauge skills.

2. Ecuador country context

Subsequent to the global effects of the recession of 2008, Ecuador's economy has achieved substantial growth reaching 7.9% in 2011. In 2012 and 2013 deceleration was observed with rates of 5.2% and 4.6%, although it remained stable, and by the end of 2014 GDP had increased by 3.4% during the last quarter.[1]

The government of President Rafael Correa Delgado has been in power for seven years and in February 2013 he was re-elected for a further four-year term of office with a huge majority. The government's policies include changing the shape of production and eradicating poverty. Its lines of action are centred on creating a stable economy and strengthening knowledge and innovation.

One important statistic to take into consideration is the rise in public investment since 2006, when it stood at 21%, to a figure of 44% in 2013, with the bulk of investment being earmarked for educational development and infrastructure projects and plans.

In addition, it is necessary to underline the fact that this growth has taken place in an integrative manner, reducing inequalities to a far greater extent than the region at large. This has had a direct bearing on lowering the poverty levels and increasing the middle class. By June 2014, poverty stood at 24.5%, a fall of 10% compared to 2006, and extreme poverty fell to 8%, falling to less than half the figure recorded in 2006.

Following these encouraging results, public policy continued to advance addressing the challenges head on to ensure the sustainability of these endeavours. Not only did the focus on economic growth remain, with the figure for this year being estimated at between 3% and 4%, investment in education also continued to be substantial.

2.1. Education in Ecuador

The National Education System in Ecuador is regulated by the Ministry of Education (MINEDUC) with the following range of options: state, mixed, local, religious or secular private, Hispanic and bilingual exchange education. Public education is promoted under a secular banner and is mandatory at all levels up to Baccalaureate.

Basic education is divided into two school cycles: *Andean* and *Coast*. Each have different academic cycle start and end dates. The school period is organised into terms with the period of classes lasting approximately 6 months with 15 days for term exams, on average, 15 for supervised study and between 15 and 21 days for independent study (mandatory days for studying outside home and preparing final exams).

The *Andean* cycle currently begins in early September and ends in lately June, and the *Coast* cycle begins in late April and ends in mid-February.

Investment in education over the past seven years has been substantial and is more than three times higher the amount in 2006. Indeed, by the end of 2014 it stood at 3.5 billion USD, leading to patent improvements in educational infrastructure with millennium education units, *replica* schools and emblematic schools nationwide favouring rural areas. Teaching staff have also improved as a result of the Quiero Ser Maestro (I want to be a teacher) processes in which some 140 000 teachers of education were assessed. Another point worth underlining is the establishment of 4 emblematic universities in the country: Yachay City of Knowledge, Ikiam Amazon University, the University of the Arts and the National University of Education, all raising the quality of education.

"This historic investment allowed coverage at basic education to rise from 91.2% in 2006 to 95.6 % in 2012, with the level at Baccalaureate rising from 47.9% to 63.9% over the same period."[2]

2.1.1. Historical point of reference for education in Ecuador

Education in Ecuador has undergone discrete changes with very little impact on the student community, especially in basic cycle. During the 1970s a change that may be deemed substantial occurred in the syllabus in the area of languages with the establishment of the subject of structural grammar, and in the area of mathematics with the establishment of the subject of modern mathematics. In both cases, the content underwent a complete overhaul and a vision of broader scope was provided. Progress made in the remaining disciplines was scant on the context of education.

> *Between 1980 and 2007 education - and in particular public education - underwent a process of stagnation and a backwards trend in terms of initiatives for reform which ultimately failed. The recession and political instability rendered proposals for educational improvement unviable as they were not personified by sturdy productive, political and social stakeholders. Public policy - and educational policy especially - witnessed weakness and inconsistency having an effect on irresolute, unstructured management. Education agents were in a constant battle brought about by a lack of financial resources and agreements (Luna, 2014).*

One significant change was the impact brought about by more study days and shorter holiday periods for students. During the late 1990s, it was decided that education would go from 9 months of class to 10 months, or effectively providing 200 days of classes and curricular activities for students, as the average

holiday periods for students and teachers was nigh on three months, with teachers departing on their holiday periods on virtually the same date students did, while they currently stay for a further month after completing activities with students.

The table below sets out the proposals that have had a bearing on basic education from 1980 to the present day. The impact on childhood and youth has been highly subtle. On occasions, certain subjects were created within the syllabus such as artistic education or computing, reducing the study time devoted to common core subjects such as languages, mathematics, natural sciences and social education.

Table 1. Important events in the national system of education

Year	Regulation	Impact
1965	Ungraded school and teacher training	• Plan for progressive transformation of ungraded schools into full schools. • Brief training course for school supervisors. • Regulation for the organisation of ungraded schools. • Adaptation of current programmes (syllabus) in primary (basic) education.
1983	Law no. 127 of 15 April 1983	• The academic year will comprise one hundred and eighty five weekdays (art. 45 – The academic year will comprise one hundred and eighty five weekdays, including exam periods. The calendars, periods and days off for the Andean and Orient, and the Coast and Galápagos systems shall be set by the Ministry of Education) (there are currently 200). • Compulsory primary education shall be from 1st grade to 6th grade whereupon a certificate is granted for accreditation and other purposes (the student received a certificate attesting to completion of primary level, which served for the purposes of carrying out manual activities or to enrol for secondary level, which despite being - higher- basic was not compulsory). • During secondary education there was a basic cycle from 1st to 3rd year (between 12 and 15 years of age, approximately) upon completion of which students could start work in manual and technical fields such as mechanics, electricity and other areas (art. 11 – Basic cycle entails the start of training at intermediate level promoting general basic culture and developing specialised activities allowing students to choose the specialty in the diversified cycle preparing them for employment).
1987	Operations plan under project ECU3069	• The State is applying nutrition programmes in schools. This initiative began under the form of school collation (1987-1993), solely for primary education.
1989	Programme for improving the quality of basic education	• Students obtaining 40 points in the three terms could be released from having to sit the final exam (the maximum mark was 60). • Students who failed to obtain 25 points in the three terms would automatically fail the year.
1994	The Education Law	• The syllabus becomes mandatory meaning that more subjects were established and the study time for other disciplines was reduced. As a result, less class hours were taught for certain subjects, albeit with the same volume of content, meaning that teachers found it virtually impossible to complete all areas planned. Art. 23 - Mandatory and Fundamental Areas. The groups of mandatory and fundamental areas, that will account for at least 80% of the study programme, are as follows: • Natural sciences and environmental education • Social sciences, history, geography, political constitution and democracy • Artistic education • Ethics and human values education • Physical education, recreation and sport • Religious education • Humanities, Spanish and foreign languages • Mathematics • Technology and computing. • Religious education was decreed as mandatory, creating a scenario with confrontations between social groups, especially young people who were in favour owing to the cultural circumstances of their families, who clashed with others who insisted on secular education. Art. 24 - Religious Education - The right to receive

		religious education is guaranteed. Schools shall establish this, notwithstanding the constitutional guarantees concerning freedom of conscience, religious freedom and the right of family parents to choose the type of education for their children, as well as the constitutional mandate by which no individual shall be compelled to receive religious education in State schools. In any event, religious education shall be taught pursuant to the provisions of the statutory law implementing the right to religious freedom. • Completion of basic education allowed students to access blue-collar employment. Students who followed or completed all grades of basic education could access the special labour education service offered by educational and labour training institutions where they could obtain a certificate in art or a trade or certificate of aptitude in the respective occupational field.
1996	Consensual syllabus reform	• Students of 8th, 9th and 10th grade of basic education will receive 5 hours of English class although this remains optional for public education until the number of teachers needed is reached.
1998	Syllabus reform for basic education	• Initial, basic and secondary education changes to an academic year of 200 weekdays of classes, with the result for young people being 1 month of holidays less with the start of classes being adjusted under the *Andean* scheme to September and under *Coast* to April and May depending on the winter rainy season.
2006	10-year Education Plan	• Eight 10-year plan policies that should be assessed in 2015. • POLICY 2 Universal establishment of basic general education from year one to ten: REASONING: In order for children to develop skills enabling them to learn how to forge their own character, to learn how to act, to learn how to discover, to learn how to live alongside others and to learn how to learn in their natural and social environment, in awareness of their national identity, from a multicultural, multiethnic standpoint, on the context of respect for collective and human rights, for nature and for life.
2007	"I am learning" tests	• Assessments were applied in accordance with the 10-year plan for students, known as the "I am learning" tests, subsequently named the "Knowledge" or *Conocer* tests. Other instruments are currently implemented in this regard. • The registration fee of USD 25 for public education ceased to be collected, resulting in the dropout levels falling.
2008	Resolution establishing INEVAL	• Art. 67 - National Institute for Education Assessment - Pursuant to the provisions of article 346 of the Constitution of the Republic, the National Institute for Education Assessment is set up as a public law institution with administrative, financial and technical autonomy in order to promote quality in education. • Article 16 of the General Regulation of the Organic Law on Intercultural Education stipulates that: "the National Institute for Education Assessment is a public body responsible for comprehensive internal and external assessment of the national education system in compliance with the assessment policies set by the National Education Authority.
2010	2010 modernisation and strengthening of the syllabus	• A new syllabus is considered in which the impact is greater, firstly because the decision is made to study under the quimester organisation, meaning the end of the term-based system. • A learning process is established according to performance-based skills resulting in more complex work for students.
2011	The Organic Law on Intercultural Education (LOEI)	• The 200 weekday academic year is sustained. Following the first quimester students have 15 days' holiday and following the second quimester students have almost a month off. As a result, holiday periods for students have been shortened. • All marks have been determined on a scale of 0 to 10 points. • Students have a better chance of passing an academic year because there are many additional assessments (quimestral exams, remedial exams, retake exams and last exams). • The primary areas of authority of INEVAL are determined.
2012	INEVAL	• The LOEI Regulation is published. • The National Institute for Education Assessment is set up. • The Board of Directors of the National Institute for Education Assessment (INEVAL) appoints its executive director.
2013	INEVAL	• A phase for establishing assessment instruments is launched and co-ordinated by INEVAL. • INEVAL establishes the "Being a Student" tests (for 4th, 7th and 10th year of basic general education and for 3rd year of Baccalaureate) to set a distinction.

2.1.2. What the education system offers

The national education system operates under two schemes: *Coast* and *Andean*. The Ministry of Education points out that the range of education options on offer is as follows.[3]

Initial education

Initial education is the process of accompanying children under five years of age in their comprehensive development and it is intended to encourage learning and wellbeing through suitable, important experiences taking place in stimulating, healthy and safe environments.

Children at this age naturally explore, experiment, play and create activities they engage in by interacting with others, with nature and with their culture. Parents, relatives and other people around them are highly important and should protect them, care for them and show them affection in order to ensure children learn in a happy, healthy manner with an ability to learn and develop.

General basic education

General basic education in Ecuador encompasses ten study levels ranging from 1st to 10th grade. People who complete this cycle are able to pursue Baccalaureate studies and take part in social and political life, aware of their historical role as citizens of Ecuador.

This education cycle allows students to develop their ability to communicate, to interpret and solve problems and to understand natural and social life.

General unified Baccalaureate (BGU)

BGU is a new study programme offering an educational service for all young people who pass general basic education (EGB).

BGU carries a threefold goal of preparing students: *a)* for life and taking part in a democratic society, *b)* for the world of employment or entrepreneurship and *c)* to pursue a university education.

During BGU all students must follow a group of central subjects known as the common core branch, enabling them to acquire essential basic learning skills as part of their general education. In addition to the common core branch, students can choose from two options depending on their areas of interest: the Science Baccalaureate or the Technical Baccalaureate.

In addition to acquiring the common basic BGU learning skills, those who choose the Science Baccalaureate can follow optional subjects to enable them to broaden their learning in certain academic fields that are of interest to them.

Those who choose to follow the Technical Baccalaureate will also acquire the common basic BGU learning skills whilst also gaining specific skills in the professional profile they have opted for.

Education for young people and adults

The education options on offer for those who have not completed school allow them to finalise their education at the various levels and sub-levels for young people and adults who are in groups that are vulnerable and excluded from the education system and the from the economic, social and political model. They provide a number of useful, quality and not long-drawn-out education process that are immediately applicable to prepare them for future life. They answer to the heterogeneous nature of students and their

varying backgrounds by affording a range of teaching proposals and syllabi with education services tailored to meet their needs and answer to their specific characteristics.

Integrative, special education

A requisite to this proposal is a society that welcomes individual differences, multiple group identities and a unifying political community. It considers "difference" to be an enhancement. It is a concept that embraces pluralism (of all kinds) within society. It is the way a society tackles the challenge of dealing with "difference" in every context.

With regard to education it implies a commitment to educate every child, young person and adult at all levels up to the respective maximum limit at school, college or functional independence workshops whilst offering them support services.

Integration requires efforts being made on four elements: *a)* in personal terms, to develop civic ethics based on responsible habits; *b)* in social terms, to develop the ability to live and work alongside one another; *c)* in spatial terms, to develop the ability to see oneself as a member of a diverse regional, national or local community; and *d)* in terms of timeframe, to develop the ability to place current challenges in the context of the past and future in order to find long-term solutions for the difficult circumstances we face.

Integration comprises the establishment of a teaching environment where the structure and organisation of the school, the teaching staff, the administrative staff, the syllabus, the assessments, and students, their parents or guardians - in other words, the broad focus – is centred on the above-mentioned four elements. As a society we must be ready in order to acquire, acknowledge and adapt as necessary in order to enable these individuals to exercise their right to education.

The school plays a social and community-based role in its knowledge and exercise of human rights, its respect for the opinions and ideas of others, the atmosphere of co-operation and a contribution to employment relations, open communications and conflict resolution.

Bilingual intercultural education (SEIB)

The bilingual education system[4] of indigenous peoples and nationalities in Ecuador comprises aspects ranging from early encouragement to the highest levels. It centres on the implementation of the plurinational and intercultural State on the context of sustainable development with a long-term vision (2008 Constitution).

Since time immemorial, Ecuador has been a plurinational, multilingual country comprising the following 14 nationalities: Shuar, Awá, Eperara siapidara, Chachi, Tsa'chi, Kichwa, A'i (Cofán), Pai (Secoya), Bai (siona), Waorani, Achuar, Shiwiar, Sapara and Andoa. By its mere existence, each nationality is entitled to its own education in light of the collective right acknowledged by the Constitution of the Republic of Ecuador and the international instruments signed by Ecuador. It is pertinent to note that the Kichwa people have the following 18 populations: Otavalo, Palta, Panzaleo, Puruwa, Karanki, Salasaka, Saraguro, Tomabela, Waranka, Chibuleo, Kayambi, Amazonian Kichwa, Kisapincha, Kitu kara, Kañari, Manta, Huancavilca, Natabuela and Pasto. In addition, the Constitution recognises the Afro-Ecuadorian and Montubian populations.

The SEIB seeks to respect the learning paces of various people, psycho-social aspects, creative capacity and ancestral knowledge and it seeks to incorporate knowledge and experiences from other cultures that contribute living in harmony with ourselves and the environment (Sumak Kawsay).

2.2. INEVAL

The National Institute for Education Assessment was set up on 26 November 2012. The legal basis for its establishment is found in article 346 of the Constitution of the Republic of Ecuador which states as follows: "There shall be an autonomous public institution for comprehensive internal and external evaluation aimed at promoting the quality of education".

It is also based on article 67 of the Organic Law on Intercultural Education – LOEI – which, in fulfilment of the Constitution, decrees the establishment of the "National Institute for Education Assessment as a public law institution with administrative, financial and technical autonomy in order to promote quality in education".

Article 68 of the LOEI describes what this institution, which is in fact the INEVAL, shall do: "The institution shall carry out comprehensive internal and external assessment of the national education system and set the indicators for education quality". The same legal text details how this function should be carried out: "through continuous assessment of the following areas: education management by the educational authorities, academic performance of students, performance of directors and teachers, school management, institutional performance, syllabus application and other areas, always in accordance with the assessment standards defined by the National Education Authority and others deemed technically appropriate according to the institution".

In late 2012 the National Institute for Education Assessment was set up and to all intents and purposes it began operation in 2013.

Moreover, in 2015 Ecuador would be required to examine compliance with its 10-year education plan, the particular strength of which was having been signed and approved in a national referendum making it particularly legitimate. The technical monitoring carried out by INEVAL will make it possible to make a substantially accurate assessment of the achievements and commitments pending in this decade-long process.

2.2.1. Relevant information about INEVAL

INEVAL's mission, vision, values and goals are as follows:

- **Mission:** promoting education of excellence by comprehensively assessing the national education system and its components.

- **Vision:** the assessments of the institution shall be reliable, objective, appropriate, fitting and impartial in order to serve as a benchmark of the reality of the national education system and its components in terms of its quality.

- **Values:** *1)* objectivity; *2)* technicality; *3)* efficiency, efficacy and effectiveness in operation; *4)* fostering a culture of assessment; *5)* reliability; and *6)* profound sense of social participation.

- **Goals:**

  - General: to conduct comprehensive internal and external assessment of the national education system and its components in order to promote education of excellence and to set the education quality indicators through ongoing assessment of: learning, the performance of education professionals and education centre management, all from the standpoint of interculturality, plurinationality and ancestral languages in terms of rights and obligations.

− **Specific**:

1. Conducting ongoing internal and external assessment of the national education system and its components.

2. Developing assessment methodologies suited to national, regional and local contexts and suited to the components to be assessed.

3. Preparing assessment instruments and security protocols in design and application.

4. Processing and analysing results to simplify decision-making for the National Education Authority.

5. Publishing results while adhering to disclosure policies and social reporting.

6. Taking part in international projects that help to improve the quality of education.

7. Building and applying indicators to assess the National Education System.

8. Designing and implementing factorial questionnaires and other similar instruments.

9. Designing and managing an information system that safeguards the results of all assessments.

10. Conducting studies and research to report on the quality of the National Education System.

3. Summary of capacity building needs

The key priorities agreed with the NC, INEVAL, for the development of capacity reflect both the needs of PISA-D and also the institute's own goals.

3.1. Enabling context

Training aimed at delivering the results yielded by PISA and national assessments, for the purpose of promoting progress in student learning. This point includes the following elements:

- Awareness of the stakeholders' capacity to use assessment data either correctly or incorrectly

- Narrow relationship with and willingness to listen to the various stakeholders

- Clear identification of the audiences slated to receive reports

- Training on PISA reference frameworks and on the construction of items derived thereof.

In order for teachers to have the desired impact on the teaching-learning processes, and to promote their acceptance of PISA, INEVAL must be able to clearly explain the survey's approach and how to properly utilise, in the classroom, the results and the items produced.

The social support given to the assessment will depend on the technical and conceptual solidness of the tests. To the extent tests meet these requirements, the information INEVAL generates will be more

useful and more highly valued by the various stakeholders. If, on the other hand, the tests are weak, the risk of having the questions and methodology publicly exposed and criticised by the media is very real.

Among the PISA-related priorities, one concerns incorporating out-of-school 15-year-olds into the Study, and the need to adopt a sampling technique that ensures that every stratum is duly represented. Contact with schools is another aspect that needs improvement.

3.2. Organisation

Within INEVAL, the individuals who have accumulated the greatest amount of experience can be found among the managerial/supervisory personnel and, consequently, these are the ones who will benefit the most from the training being provided. Nonetheless, having only one trained person per team is insufficient. Considering that Ecuador has little experience in the area of assessments, any opportunity to form professionals in this field becomes extremely important. This being the case, it is felt that everything possible must be done to maximise training opportunities, particularly in the following areas.

Towards efficient data collection

- Evidence shows the need to discuss and review with INEVAL all protocols associated with the distribution, administration, collection and storage of material.

- All support material, such as, Administration, Supervision and Quality Control Manuals, should be reviewed for the purpose of identifying any differences with the requirements set by PISA standards.

Training of scorers

- Storing assessment materials in an orderly manner and adopting all required security measures following test administration.

Coding open-ended questions

- Requires a clear understanding of assessment guidelines and the objective of the questions asked.

- Requires receiving training in the handling of the test material.

- Requires being familiar with double coding.

- Requires the ability to teach people not working for INEVAL the use of guidelines when assigning scores to the questions.

- Requires recording data yielded during the process according to the PISA protocol.

3.3. Individual

Quality of test administrators' training: At INEVAL, the persons responsible for this task are currently unable to provide direct training to all the scorers in their different locations. It would be helpful to discuss this protocol, fully understand the elements underlying high quality training, and attempt to make its requirements compatible with the realities of our context.

INEVAL team members have great experience when it comes to working with databases. However, there is a pressing need for more sophisticated software that will allow them to expand the range of tasks currently carried out with databases.

The requirements mentioned above are essential for the country's participation in PISA-D. The requirements that follow are both convenient and desirable for PISA-D, but absolutely indispensable if a national consolidated evaluation system is to be attained.

Most members of the various teams need to have a general understanding of IRT so results, parameters and assumptions are readily understood. Likewise, the Educational Research teams need not only to understand its basic principles, but also, to learn how analyses and scoring should be done according to this theory.

As pointed out earlier in reference to context, this need is closely related to the potential of the tests that will ensure an effective assessment. The project will need to help INEVAL to:

- Improve item construction

- Increase item relevancy

- Nourish tests more efficiently

- Learn to assemble using rotated blocks.

In closing, and by way of synthesis, emphasis should be placed in the fact that INEVAL has accomplished much recently, and has developed enough capacity for participating in PISA-D. Nevertheless, there still is room, and particularly interest, to maximise every opportunity to reinforce the collective knowledge of the organisation and the skills of the individuals working there.

4. Methodology

The initial collaborative work with INEVAL on capacity building took place during 2014 and early 2015 facilitated by OECD's consultant, Leonor Cariola. First, using the web tool (www.polymetrika.org/PISAD/Home/DataEntry), the capacity needs assessment was reviewed. During the review of the CNA the following capacity needs elements were identified:

- First, capacity requirements that were not met; and

- Second, capacity requirements that were met but where existing experience had to be applied to new or different requirements demanded by PISA-D.

Using this list of capacity needs, options for capacity building elements were developed and priorities were assigned to them. Next, capacity building activities were selected to respond to the capacity needs under each of the areas identified for development. These activities were scheduled over the years 2015 to 2018 of PISA-D using the principle of "just-in-time learning" and corresponding with the schedule for implementation that was being agreed concurrently between the OECD and its international contractors. The final step was to develop an in-country budget for each capacity building element by year of PISA-D implementation.

In addition, four areas of development with related capacity building elements were identified under each of the two types of investment. The capacity needs identified, each with its rating, are presented for

each capacity building element. This list was used to develop the ultimate goal for each area of development, which will be used later for monitoring and evaluation. Lastly, the activities that were planned by year were developed under each of the eight capacity building elements with their related costs.

5. Results of the analysis based on the capacity building reference framework

The CBP for Ecuador is presented below under the two types of investments that have been identified:

- First, those investments related to increased INEVAL capacity for managing large-scale assessments more generally; and

- Second, those investments related specifically to PISA-D implementation.

5.1. Capacity building for increased INEVAL capacity for large-scale assessments

5.1.1. Capacity building element: Improve test quality

The ultimate goal for this capacity building element is:

- Adequately adapting PISA items after translation. Being able to report relevant results for stakeholders, such as abilities developed by students. Having tests that comply with International Standards for Assessment.

The assessment of capacity building needs was translated into the following capacity building activities for each year of the project:

Year 1: Second Meeting for the International Advisory Group (March 2015 / Paris)

Activity	11-13 March 2015 (Paris). Formal adoption of the Terms of Reference for the International Advisory Group (IAG) and election of two Co-Chairs, Presentation and review of annual report on project activities, including an up-date on Strand C and the contribution of the OECD and the project to education in the post 2015 agenda, agreement of Terms of Reference for the PISA-D TAG and up-date on the establishment of the TAG, Presentation by OECD Secretariat and International Contractors of Statements of Work and integrated timeline for Strands A and B and approval of these by the AIG, Review and approval of the preparation of participating countries: capacity building plans and status of PIPs, Participating countries oriented to the PIP, key phases and instrumentation, NPM mentoring and peer-to-peer learning initiated
In-country costs	USD 2 240

Total Cost Year 1 = USD 2 240

Year 2: Know when an item is well adapted or not and the criteria for qualifying items (Washington / January 2016)

Activity	The objective of this training is learning when an item is well adapted or not and the criteria for qualifying items.
Deliverables	Guidelines for knowing when an item is well adapted. Forms for recording the items to be developed. Hand-outs.
Administrative details	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance.
Relevant documentation	Guidelines.
International costs	0
In-country costs	USD 6 463
Expected additional funding	0

Year 2: Third Meeting for the International Advisory Group (Asunción, Paraguay / March-April 2016)

Activity	March/April 2016 (Paraguay)
Administrative details	Project planning and thematic discussions
In-country costs	USD 5 858

Total Cost Year 2 = USD 12 321

Year 3: Analyse psychometric data from the pilot test and interpret them (Saly, Senegal / May 2017)

Activity	Peer group training. Discussion of field trial data and decision in regard to item functioning consequences. This training will be oriented mainly to item developers and subject experts.
Deliverables	Basic concepts of IRT. Guideline to interpret data. Example of items with problematic parameters and explanation of the item's problem.
Reporting requirements	Register and booking of country participants. There should be a summary of the main problems encountered and of what is yet to be learnt or deepen in the country.
Country responsibilities	Review the data from the pilot test. Consult your analysis team about their interpretations and questions. Develop hypothesis for the flagged items.
Administrative details	Official authorisation for leaving the country to the staff that will be assisting. Processing tickets, visas and travelling insurance.
Relevant documentation	The almanacs with item data.
International costs	0
In-country costs	USD 12 446
Expected additional funding	0

Year 3: Fourth Meeting for the International Advisory Group (Zambia or Cambodia / March - April 2017)

Activity	Project planning and thematic discussions.
Administrative details	March/April 2017 (Zambia or Cambodia).
In-country costs	USD 15 837

Total Cost Year 3 = USD 28 283

Year 4: Fifth Meeting for the International Advisory Group (Saly, Senegal / March 2018)

Activity	Project planning and thematic discussions.
Administrative details	March 2018 (Senegal)
In-country costs	USD 12 446

Total Cost Year 4 = USD 12 446 USD

5.2. Capacity building for implementation of PISA for Development

5.2.1. Capacity building element: Develop capacity for large scale assessment

The ultimate goal for this capacity building element is:

- Comply with PISA Technical Standards in regard to standardised test administration practices and dissemination of results. INEVAL staff, aside the NPM (Executive Director) need to be trained and enabled to second and to, eventually, substitute the NPM.

The assessment of capacity building needs highlighted the following elements:

- Relevance of NC expertise – **established**

- Experience in planning, organising and conducting international assessments – **established**

- Effectiveness of human resources for ILSA – **established**

Year 1: Peer-to-peer meeting, training on PISA cognitive and contextual frameworks (September 2015)

Activity	Introduction to the Role of the PISA-D Framework, Introduction to Frameworks and Available Item Pool, Overview of the contextual questionnaires framework, Localisation procedures and Preparations for Translation, Peer-to-Peer Learning and Mentoring.
Country responsibilities	Host the event
Administrative details	September 2015 (Ecuador)
In-country costs	USD 9 000

Total Cost Year 1 = USD 9 000

Year 2: Peer-to-peer meeting technical development, including design of enhancements and planning for field trials and capacity building (Paraguay / April 2016)

Activity	In a Technical PISA meeting, discuss the overall process for PISA and the technical requirements. Country representatives will get acquainted for the requirement of the whole project and on what they need to prepare considering pilot test administration on the second year.
Deliverables	Hands out and presentations with the agenda and timeline for the whole process.
Reporting requirements	Register and booking for participants.
Country responsibilities	Reading documents previously sent. Discussing those documents with the whole team so that the person that assists asks everybody's questions. Reproduce the workshops to their teams.
Administrative details	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance.
Relevant documentation	Manuals and presentations.
International costs	0
In-country costs	USD 5 990
Expected additional funding	0

Year 2: Preparing for large-scale test administration and for PISA-D field trial in a peer-to-peer meeting (Zambia / July 2016)

Activity	Field trial capacity building and peer-to-peer learning. In a regular PISA meeting country representatives will learn how to administer a field trial and collect in-country data collection.
Deliverables	Operation manual, Test administrator manual, School Co-ordinator manual, Quality control manual, School tracking forms, Student tracking forms.
Reporting requirements	Summarise the challenges countries will need to face and the ways in which the NC may surmount them. Describe the adaptations to established procedures that will be done in the different countries.
Country responsibilities	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance. Reading documents previously sent. Discussing those documents with the whole team so that the person that assists asks everybody's questions.
Administrative details	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance.
Relevant documentation	Operation and NPM manuals together with Test Administrator and School Co-ordinator manuals.
International costs	0
In-country costs	USD 15 883
Expected additional funding	0

Total Cost Year 2 = USD 21 873

Summary: Total capacity-building element cost = USD 30 873

5.2.2. Capacity building element: Develop capacities outside INEVAL (test administrators and item developers) for temporary workers

The ultimate goal for this capacity building element is:

- Have enough trained item developers and test administrators outside INEVAL so that INEVAL can hire them when required. Develop protocols for recruiting and training. Keep records of them and of their performance. Include some of the item developers as permanent stakeholders to be consulted.

The assessment of capacity building needs highlighted the following elements:

- Quality of training for data collection – **emerging**

- Providing teachers with opportunities to learn about the NLSA – **emerging**.

Year 2: Train the NC on organising test administration according to PISA standards and being prepared for test administrations (April 2016)

Activity 1	This is a peer-to-peer group training on operational processes for student assessment that should include the training and review of all processes related to data collection together with the requirements for quality control.
Deliverables	NPM and other manuals Hand outs and presentations with the processes to carry out.
Reporting requirements	Register and booking of country participants.
Country responsibilities	Reading documents previously sent. Discussing those documents with the whole team so that the person that assists asks everybody's questions. Afterwards, reproduce the workshops to their teams. Fulfil the tasks assigned for the period in between meetings.
Administrative details	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance
Relevant documentation	NPM and other manuals
International costs	0
In-country costs	0
Expected additional funding	0
Activity 2	Peer-to-peer Technical Meeting funded by the OECD and organised by the international contractor.
Deliverables	Manuals Hand out and presentations explaining test administration processes.
Reporting requirements	Adaptations done to tests and questionnaires and to any manual.
Country responsibilities	Provide and process tickets and per diem for participants assisting to this meeting.
Administrative details	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance for all participants.
Relevant documentation	Test instruments and documents.
International costs	0
In-country cost	The cost of this peer-to-peer is contemplated in the "Peer-to-peer - April 2016"
Expected additional funding	0

Year 2: Train INEVAL on the steps of test administration, the risks they involve and how to make provisions to avoid hazards. Clarify the need and ways of documenting these processes.

Activity	This is a self-training activity through which INEVAL must decide what and why should be adapted to the standard PISA process in order to administer the test in Ecuador. This will be reviewed by the international contractor and fed back.
Deliverables	Forms filled with adaptations made.
Reporting requirements	Send to the international contractor a description and justification of changes made.
Country responsibilities	Adapt Operation Manuals as well as Test Administrator and School Co-ordination manuals.
Administrative details	This requires no extra costs.
Relevant documentation	Manuals
International costs	0
In-country costs	0
Expected additional funding	0

Total Cost Year 2 = USD 0

Year 3: Reports and records of test administration

Activity	This activity is part of the regular process of PISA reporting, but if analysed and assessed by the team, it may be very important for self-training.
Deliverables	General report with a chapter for each process (contacting schools, test administration, collecting and organising test material, scan or data entry, preparing the data bases)-
Reporting requirements	These will be established by the International Contractor.
Country responsibilities	Prepare a report for the International Contractor with the description of the whole process, including data bases. Assess the process and determine if there are ways to improve it.
Administrative details	This requires no extra costs.
Relevant documentation	Reports.
International costs	0
In-country costs	0
Expected additional funding	0

Total Cost Year 3 = USD 0

Summary: Total capacity-building element cost = USD 0

5.2.3. Capacity building element: Result analysis and communication

The ultimate goal for this capacity building element is:

- Have closer work and exchange with university research and teacher training. Engage different stakeholders and meet them on regular basis. Develop specific reports for certain stakeholders. Develop analysis capacities (proper software, statistics, social sciences and education.

The assessment of capacity building needs highlighted the following elements:

- Local capacity building for ILSA – **established**

- Availability of ILSA training – **established**

- Communication with stakeholders – **emerging**

- NPM experience with dissemination of results from large scale assessment – **established**.

Year 1: Develop result reports according to the requirements to improve student learning through policy making and practitioner's conduct

Activity	INEVAL will nominate a PISA council in order to impact different stakeholders and that they help with PISA dissemination. This people should be able to sense what is required for the best interests of student learning and to provide INEVAL with an external vision of their work.
Country responsibilities	Nominate and organise this Council. Establish its functioning rules and develop a year programme of topics to be analysed. Hire or nominate a person in charge of conducting this council.
International costs	0
In-country costs	This requires no extra costs.
Expected additional funding	0

Total Cost Year 1 = USD 0

Year 4: Be able to: a) to compute IRT parameters for the pilot test; and b) to score tests according to IRT and to produce relevant analysis of them (Senegal / March 2018)

Activity	This is a peer-to-peer training in a regular International PISA meeting. This workshop will be done on the basis of pilot test data. It should be a workshop oriented to IT and statistic people in order that they are able to carry on the processes for doing item IRT analysis. They should get to understand the principles of IRT and be able to explain to item developers why an item does not work well in a certain test.
Deliverables	Presentations and hand out on general knowledge about IRT. Software manuals. Options of software to analysed items, manuals for using them and procedures. Almanacs with item data. Rules and standards for discarding or retaining items.
Reporting requirements	Participants should report their outputs which will be verified by the international contractor.
Country responsibilities	Nominate IT and statistical staff that will assist to this training. Provide the software required by the international contractor. Provide notebooks so that participants can take their own notebook to work. Reading documents previously sent. Discussing those documents with the whole team so that the person that assists asks everybody's questions
Administrative details	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance.
Relevant documentation	Almanacs.
International costs	0
In-country costs	USD 12 446
Expected additional funding	0

Year 4: Be prepared to analyse PISA data and develop a national report. This requires theoretical knowledge regarding educational models and learning factors, as well as analysis techniques and software such as HLM or other multivariable and multilevel approaches (Guatemala 7 July 2018).

Activity	Analysis and Reporting, capacity building in a peer-to-peer learning. International PISA meeting.
Deliverables	Software manuals. Hand out and presentations.
Administrative details	Analysis and interpretation of main study results, reporting and dissemination of results.
International costs	0
In-country costs	USD 8 054
Expected additional funding	0

Total Cost Year 4 = USD 20 500

Summary: Total capacity-building element cost = USD 20 500

5.2.4. Capacity building element: Develop capacities for quality control

The ultimate goal for this capacity building element is:

- Improving and stating protocols and standards to be fulfilled. Monitoring that these requirements are met.

The assessment of capacity building needs highlighted the following elements:

- Avoidance of conflicting interests – **established**

- Accountability for security – **advanced**

- Adherence to protocol – **established**

- Adherence to security protocols – **emerging**

- Monitoring of collection procedures – **established**

- Commitment of data collectors to training – **emerging**.

Year 1: Design a quality control plan to be implemented, including the way in which quality will be assessed

Activity	During the three years of the project, the international contractor will ask reports for each process that back the compliance with PISA Standards. The contractor will give feedback to PISA-D participant country in regard to this compliance and suggest ways to improve the process in a next opportunity.
Deliverables	Guidelines for reporting. Shared feedback to those reports.
Reporting requirements	The process in itself is reporting. Keep timelines. Clarify questions from the International Contractor.
Country responsibilities	Send the required reports on time. Analyse and share the feedback with a broad team.
Relevant documentation	Guidelines for reporting Reports for each process. Feedbacks to each country in each opportunity.
International costs	0
In-country costs	No extra cost
Expected additional funding	0

Total Cost Year 1 = USD 0

Year 2: Implement the quality control plan

Activity	Continue with the same activity as in year 1.
Deliverables	Feedback for each process.
Country responsibilities	Reports of each process.
Relevant documentation	Forms for reporting.
International costs	0
In-country costs	No extra cost.
Expected additional funding	0

Total Cost Year 2 = USD 0

Year 3: Assess the quality of the test administration process in regard to PISA standards

Activity	Continues with the same activity.
Deliverables	Feedback to those reports.
Reporting requirements	Keep timelines. Clarify questions from the international contractor.
Country responsibilities	Produce reports for each process.
Relevant documentation	Forms for reporting.
International costs	0
In-country costs	No extra cost.
Expected additional funding	0

Total Cost Year 3 = USD 0

Summary: Total capacity-building element cost = USD 0

5.2.5. *Capacity building element: Psychometric analysis*

The ultimate goal for this capacity building element is:

- Ensure that absentees are not affecting result data. That INEVAL be able to score and analyse student learning and attitude scales with IRT theory.

The assessment of capacity building needs highlighted the following elements:

- Reliability of student attendance – **established**

- NC's understanding of item response theory – **emerging**.

Year 2: Be able to work with the IRT basic concepts and continue learning on this basis (required by Ecuador / April 2015)

Activity	Workshop in Spanish on statistics for sampling in large scale assessments and the basics of IRT. This workshop would be oriented to statistic staff in each country and its objective would be that these people be prepared to continue learning by themselves and to profit from international PISA meetings. This three days seminar will be held in Ecuador.
Deliverables	Guidelines. Presentations. Bibliography.
Reporting requirements	Register for the course. Hosting country inform authorities in the Ministry.
Country responsibilities	Organisation and facilities for the seminar.
Administrative details	This seminar will be held in Ecuador. Three day seminar USD 1 500 + preparation USD 1 000 = USD 2 500. Tickets and per diem = USD 600. TOTAL = USD 3 100. Non hosting countries: Tickets + per diem for all participants of that country.
Relevant documentation	Guidelines.
International costs	0
In-country costs	USD 17 750
Expected additional funding	0

Total Cost Year 2 = USD 17 750

Summary: Total capacity-building element cost = USD 17 750

5.2.6. *Capacity building element: School, student and out-of-school sampling*

The ultimate goal for this capacity building element is:

- Having a sampling framework of students that includes birth date. INEVAL would need to learn sampling in out-of-school young people. Being able to design weighted samples.

The assessment of capacity building needs highlighted the following elements:

- 15-year-old census – **latent**

- Household survey collection – **established**

- Quality of school sample frame – **established**

- Level of detail in administrative student data – **emerging**

- Specialised skill for scientific probability sampling – **emerging**.

Year 2: Stratified sampling training (Required by Ecuador / March 2016)

Activity	INEVAL statisticians will learn about sampling.
Deliverables	Report on the method, steps and techniques to draw the sample. Guidelines to weigh that sample and compute the sampling error. Geographic techniques should be considered. This workshop may be held in any of the three Latin American countries. Hence, national costs should include both tickets and per diem for each of the participants or the logistic costs of the seminar. Costs will depend on the number of areas of interest. We need to budget: Host country: Lounge, IT facilities, coffee-breaks, transportation when necessary and what else may be required. Experts per area (divided by the number of countries interested, seven participants for each country): Five day seminar USD 2 500 + preparation USD 1 000 = USD 3 500. Tickets and per diem = USD 2 000. TOTAL = USD 5 500. Non hosting countries: Tickets + per diem for all participants of that country.
Reporting requirements	Accuracy. Keeping timeline.
Country responsibilities	Preparing the data as required by the international contractor.
Relevant documentation	Report explaining the reliability of the sample and justifying the way in which it was drawn.
International costs	0
In-country costs	USD 17 750
Expected additional funding	0

Year 2: Develop a protocol, given the information available, to get a sample of out-of-school of 15-year-olds

Activity	The international contractor will describe the processes that should be followed. INEVAL will follow these instructions and report on it.
Deliverables	Software or instrument for entering data. Manual for using the software or instrument and rationale for it.
Reporting requirements	Accuracy and keeping the timeline.
Country responsibilities	Follow instructions from the international contractor and report about it.
Administrative details	No extra costs.
Relevant documentation	Sampling manual and Sampling forms.
International costs	0
In-country costs	0
Expected additional funding	0

Total Cost Year 2 = USD 17 750

Year 3: Prepare a sample framework as complete as possible, given their reality (INEVAL will learn about sampling in May 2017)

Activity	INEVAL statisticians will learn about sampling in the workshop under goal 6 and also in practice, following instructions from the international contractor.
Deliverables	Detailed information regarding useful data and suggestions of where to look for required information so that the country is able to make an inventory. Report the need of data and the way that should be organised with the purpose of drawing the sample. Report on the method, steps and techniques to draw the sample, based on the previous framework. Guidelines to weigh that sample and compute the sampling error.
Reporting requirements	Accuracy. Keeping timeline.
Country responsibilities	Informing the international contractor the data that is available. Preparing the data as required by the international contractor. Following instructions for drawing the sample
Administrative details	There is no need to hire any assistant to collect the required information.
Relevant documentation	Report explaining the reliability of the sample and justifying the way in which it was drawn.
International costs	0
In-country costs	No extra cost
Expected additional funding	0

Year 3: Analyse the completion and response rate of the sample

Activity	After final (Y3) and pilot (Y2) test administration, INEVAL will need to fill in some forms detailing student, school and out-of-school 15-year-olds participation. These need to be compared with the original sample and justify variations. The international contractor will give feedback on it.
Deliverables	Guidelines to estimate reliability of the original and final sample.
Reporting requirements	Accuracy and timeline.
Country responsibilities	Keep accurate participation records. Fill in the forms required by the international contractor. Keep timelines.
Administrative details	It can be done with the current staff.
Relevant documentation	Document with participation rates by strata in each sample.
International costs	0
In-country costs	0
Expected additional funding	0

Total Cost Year 3 = USD 0

Summary: Total capacity-building element cost = USD 17 750

5.2.7. Capacity building element: Response-code methods and protocols

The ultimate goal for this capacity building element is:

- Item developers and subject expert have enough knowledge to score PISA open-ended questions and to teach external coders to do this work at a large scale. INEVAL develop protocols required to recruit and select coders; to manage, store and move material as required; to ensure security; and to enter data.

The assessment of capacity building needs highlighted the following elements:

- Fidelity of response coding – **emerging**.

Year 2: Learn how to develop open ended questions and their respective guidelines (required by Ecuador / April 2016)

Activity	Organise an item development workshop for learning and developing multiple choice and open ended items for 15-year-old students. This workshop may be held in any of the three Latin American countries. So national costs should include both tickets and per diem for each of the participants or the cost of the lounge, coffee breaks, IT facilities and what may be required. I could be organised in such a way as to have five days meeting and supervised work in between. This workshop may be held in any of the three Latin American countries. Hence, national costs should include both tickets and per diem for each of the participants or the logistic costs of the seminar. Costs will depend on the number of areas of interest. We need to budget: Host country: Lounge, IT facilities, coffee-breaks, transportation when necessary and what else may be required. Experts per area (divided by the number of countries interested, seven participants for each country): Five day seminar USD 2 500 + preparation USD 1 000 = USD 3 500. Tickets and per diem = USD 2 000. TOTAL = USD 5 500. Non hosting countries: Tickets + per diem for all participants of that country.
Deliverables	Tables of specifications of items that will be developed Hands out Guidelines for item development
Reporting requirements	Assessment of items submitted and its justification.
Country responsibilities	Name 2 to 4 participants in the workshop and commitment to continue working in between. Host country need to organise the event.
Administrative details	Contract individual consultant or call for tender.
International costs	0
In-country costs	USD 27 750
Expected additional funding	0

Total Cost Year 1 = USD 27 750

Year 3: Organise and carry out the open ended question marking according to PISA standards (Peer-to-peer, Guatemala / July 2017)

Activity	Peer-to-peer PISA meeting for training in coding PISA test. This should include the three areas as well as parent occupations.
Deliverables	Coding manuals and Marking guides.
Reporting requirements	Will be established by the international contractor.
Country responsibilities	Studying marking guides previously sent and discussing them with the whole team responsible for item development, so that the person/s that assists ask everybody's questions. Official authorisation for leaving the country. Processing tickets, visas and travelling insurance.
Administrative details	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance.
Relevant documentation	Coding manuals and Marking guides.
International costs	0
In-country costs	USD 8 054
Expected additional funding	0

Total Cost Year 3 = USD 8 054

Year 4: Meeting of stakeholders (April 2018)

Activity	Present the results to the society
International costs	0
In-country costs	USD 5 000
Expected additional funding	0

Total Cost Year 4 = USD 5 000

Summary: Total capacity-building element cost = USD 40 804

5.2.8. Capacity building element: Entering data

The ultimate goal for this capacity building element is:

- Learning the software required by PISA.

The assessment of capacity building needs highlighted the following elements:

- Management of linked data files – **emerging**

- Data manipulation skill: manipulating data structures – **established**.

Year 2: Be able to enter data as required by PISA-D (July 2016)

Activity	Assist to a regular PISA meeting for data managers.
Deliverables	Data management manual. Software for data entry. Hand out and presentations during the meeting.
Reporting requirements	The software provided will produce an output with errors or inconsistencies in the data base. These need to be checked and corrected if they are punching errors or explained as real inconsistencies. This report should be sent to the international contractor together with the database. In addition, after submission, the NC must be ready to answer any question from the international contractor.
Country responsibilities	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance. Reading documents previously sent Discussing those documents with the whole team so that the person that assists asks everybody's questions. Reproduce the workshops to their teams. Fulfil the tasks assigned for the period in between meetings.
Administrative details	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance.
Relevant documentation	Data management manual.
International costs	0
In-country costs	0
Expected additional funding	0

Total Cost Year 2 = USD 0

Summary: Total capacity-building element cost = USD 0

5.2.9. Capacity building element: PISA frameworks

The ultimate goal for this capacity building element is:

- That INEVAL staff be able to understand, explain and apply PISA's frameworks (tests and questionnaires).

Year 1: Understand Frameworks for the cognitive test so as to be able to develop new test and questionnaire items as well as adapting existing ones (September 2015)

Activity	Design a peer-to-peer training, starting with a three days Seminar in one of the countries of Latin America with presentations of the frameworks. Presenters in the seminar will follow up the assignments given during the seminar and participants will exchange their works to learn from one another. There should be one presenter of each framework; one of them could act as co-ordinator. Countries will have to fund the tickets and per diem for the staff they want to participate or host the Seminar. Trainers' costs will be shared by the participant countries. Host country: Lounge, IT facilities, coffee-breaks, transportation when necessary and what else may be required. International consultants: 3 days USD 1 500 + per diem and hotel USD 600 + preparation USD 1 000. Total USD 3 100 times 4 = USD 12 400.
Deliverables	Frameworks in Spanish hand outs from the seminar activities to be developed after the opening Seminar. Feedback to those activities.
Reporting requirements	Consultants should assign some activity to be realised before the next seminar that will be on item development.
Country responsibilities	Official authorisation for leaving the country. Processing tickets, visas and travelling insurance. Commitment to fulfil and exchange the tasks and works required by the seminar.
Administrative details	Contract 4-5 international experts who can lead this seminar in Spanish. You may also call for tender to see if an institution provides the whole service.
Relevant documentation	Frameworks in Spanish
International costs	0
In-country costs	This cost is already included in other meeting
Expected additional funding	0

Total Cost Year 1 = USD 0

6. Summary of Capacity Building Plan for Ecuador

The costs for the two types of capacity building investments are shown over the four years in the table below. The total in-country cost for capacity building amounts to USD 182 967. Given INEVAL's strong starting position, capacity building costs not directly associated with PISA-D implementation are relatively modest.

The total proposed budget for capacity building for Ecuador is therefore USD 182 967, but it should be noted that the costs are unevenly distributed over the four years. The costs in the second year are highest, amounting to USD 97 444 because of higher costs associated with upgrading existing and new quality procedures for PISA-D implementation and expanding capacity at INEVAL for implementing large scale international assessments. In the following two years, the costs on capacity building are associated mostly with the implementation of PISA-D.

Table 2. Overall cost summary (in USD)

	Capacity building plan	Y1	Y2	Y3	Y4	Total
5.1. Increase INEVALs capacity for large scale assessments	5.1.1. Improve test quality	2 240	12 321	28 283	12 446	55 290
5.2. PISA-D Implementation	5.2.1. Develop capacity for large scale assessment	9 000	21 873	0	0	30 873
	5.2.2. Develop capacities outside INEVAL (test administrators and item developers) for temporary workers	0	0	0	0	0
	5.2.3. Result analysis and communication	0	0	0	20 500	20 500
	5.2.4. Develop capacities for quality control	0	0	0	0	0
	5.2.5. Psychometric analysis	0	17 750	0	0	17 750
	5.2.6. School, student and out-of-school sampling	0	17 750	0	0	17 750
	5.2.7. Response-code methods and protocols	0	27 750	8 054	5 000	40 804
	5.2.8. Entering data	0	0	0	0	0
	5.2.9. PISA frameworks	0	0	0	0	0
TOTAL		**11 240**	**97 444**	**36 337**	**37 946**	**182 967**

7. Monitoring and assessment

The ultimate goals for the capacity building elements provide a framework for monitoring and evaluation. Each ultimate goal presents an output or an outcome of the set of capacity building elements that are found under each area of development and these can be converted into indicators for monitoring and evaluation. The table below presents the area of development, the ultimate goal and the indicator. It is the ensemble of areas of development that results in the desired capacity, rather than individual areas of development, which is why the programme for capacity building is carefully sequenced over the four years in relation to the PISA-D implementation schedule. The indicators can be monitored over the four years using the indicators.

Table 3. Indicators for monitoring and evaluation based on the ultimate goals for each area of development

	Area for development	Ultimate goal	Goal by year	Indicators
1	Improve test quality	Adequately adapting PISA items after translation. Being able to report relevant results for stakeholders, such as abilities developed by students. Having tests that comply with International Standards for Assessment.	Year 1: Item development from PISA frameworks (required by Ecuador / May-June 2015) Year 2: Know when an item is well adapted or not and the criteria for qualifying items (January 2016) Year 3: Analyse psychometric data from the pilot test and interpret them (May 2017)	100% assistance rate to PISA workshop of INEVAL's PISA-D work team to assure understanding of PISA's Item development framework Analysis and interpretation of the pilot test in full compliance with the PISA-D guidelines on psychometric analysis.
2	Develop capacity for large scale assessment	Comply with PISA Technical Standards in regard to standardised test administration practices and dissemination of results. INEVAL STAFF, aside the NPM (Executive Director) and the Planning Director need to be trained and enabled to second and to, eventually, substitute the NPM.	Year 2: Peer-to-peer meeting technical development, including design of enhancements and planning for field trials and capacity building (April 2016) Year 2: Preparing for large-scale test administration and for PISA-D field trial in a peer-to-peer meeting (July 2016).	100% assistance rate to PISA workshop of PISA-D work team to become proficient on the PISA-D requirements for the whole project 100% assistance rate of training to PISA-D work team to become proficient on the administration of a field trial and collect in-country data collection.
3	Develop capacities outside INEVAL (test administrators and item developers) for temporary workers	Develop capacities outside INEVAL (test administrators and item developers) for temporary workers	Year 2: Train the National Institute to become capable of organising test administration according to PISA standards and being prepared for test administration (April 2016). Year 2: Train INEVAL on the steps of test administration, the risks they involve and how to make provisions to avoid hazards. Clarify the need and ways of documenting these processes. Year 3: Reports and records of test administration.	100% assistance rate to peer-to-peer group training on operational processes for student assessment of INEVAL's PISA-D work team to assure understanding proficiency on the matter 100% adaptation of the items to be include in the test as well as documentation on the process and the reasons behind the decisions taken on it. Complete report, divided by chapters according to each process, in full compliance with the standards to be agreed with the contractor.

	Area for development	Ultimate goal	Goal by year	Indicators
4	Result analysis and communication	Have closer work and exchange with University research and teacher training. Engage different stakeholders and meet them on regular basis. Develop specific reports for certain stakeholders. Develop analysis capacities (proper software, statistics, social sciences and education.	Year 1: Develop result reports according to the requirements to improve student learning through policy making and practitioner's conduct.	Design a result report that complies with the requirement to be agreed to improved student learning though policy making and practitioners' conduct
			Year 4: Be able to: *a)* to compute IRT parameters for the pilot test; and *b)* to score tests according to IRT and to produce relevant analysis of them (March 2018)	100% assistance rate to PISA workshop of INEVAL's PISA-D work team to assure proficiency on IRT treatment of pilot test data in accordance with standards to be agreed with the contractor.
			Year 4: Be prepared to analyse PISA data and develop a national report. This require theoretical knowledge regarding educational models and learning factors, as well as analysis techniques and software such as HLM or other multivariable and multilevel approaches (July 2018)	Reach proficiency level handling PISA software on data collection as well as analysis techniques and software such as HLM or other multivariable and multilevel approaches
5	Develop capacities for quality control	Improving and stating protocols and standards to be fulfilled. Monitoring that these requirements are met.	Year 1: Design a quality control plan to be implemented, including the way in which quality will be assessed. Year 2: Implement the quality control plan. Year 3: Assess the quality of the test administration process in regard to PISA standards.	100% compliance on the delivery of reports for each process that back the compliance with PISA Standards according to guidelines to be agreed with the contractor
6	Psychometric analysis	Ensure that absentees are not affecting result data. That INEVAL be able to score and analyse student learning and attitude scales with IRT theory.	Year 1: Be able to work with the IRT basic concepts and continue learning on this basis (required by Ecuador / November 2015)	100% assistance rate to PISA workshop of INEVAL's PISA-D work team to acquire basic knowledge on the assure proficiency on IRT treatment of pilot test data in accordance with standards to be agreed with the contractor.
			Year 2: Be able to enter, compute, analyse and interpret PISA-D pilot database	Reach proficiency level handling PISA software on data collection as well as analysis techniques and software such as HLM or other multivariable and multilevel approaches
			Year 3: Be able to design and report on assessment results	Complete report, divided by chapters according to each process, in full compliance with the standards to be agreed with the contractor

	Area for development	Ultimate goal	Goal by year	Indicators
7	School, student and out-of-school sampling	Having a sampling framework of students that includes birth date. INEVAL would need to learn sampling in out-of-school young people. Being able to design weighted samples.	Year 2: Stratified sampling training (Required by Ecuador / March 2016) Year 3: Prepare a sample framework as complete as possible, given their reality. (INEVAL will learn about sampling in May 2017) Year 2: Develop a protocol, given the information available, to get a sample of out-of-school 15-year-olds. Year 3: Analyse the completion and response rate of the sample.	100% assistance rate to PISA workshop of INEVAL's PISA-D work team to acquire knowledge on stratified sampling Complete report on the protocol to get a sample on out-of-school 15-year-olds. Complete analysis of the completion and response rate of the sample in compliance with the standards to be agreed with the contractor.
8	Response-code methods and protocols	Item developers and subject expert have enough knowledge to score PISA open-ended questions and to teach external coders to do this work at a large scale. INEVAL develop protocols required to recruit and select coders; to manage, store and move material as required; to ensure security; and to enter data.	Year 1: Learn how to develop open ended questions and their respective guidelines (required by Ecuador / May-June 2015) Year 2: Be able to enter data as required by PISA-D (July 2016) Year 3: Organise and carry out the open ended question marking according to PISA standards (July 2017)	100% assistance rate of INEVAL's PISA-D work team to PISA workshop on item development of multiple choice and open ended items for 15-year-old students Full compliance with PISA standards and guidelines agreed with the contractor on the marking of open-ended questions.
9	Entering data	Learning the software required by PISA.	Year 2: Be able to enter data as required by PISA-D (July 2016)	Proficiency on the usage of PISA software for data entry and management

	Area for development	Ultimate goal	Goal by year	Indicators
10	PISA frameworks	That INEVAL staff be able to understand, explain and apply PISA's frameworks (tests and questionnaires).	Year 1: Understand Frameworks for the cognitive test so as to be able to develop new test and questionnaire items as well as adapting existing ones (September 2015)	100% assistance rate of INEVAL's PISA-D work team to PISA workshop to assure proficiency on the frameworks for the cognitive test to become capable to develop new test and questionnaire items as well as adapting existing ones in accordance with standards to be agreed with the contractor.
			Year 3: Understand questionnaire frameworks so as to be able to design applied research on test results (INEVAL will learn about contextual questionnaires in May 2017)	100% assistance rate of INEVAL's PISA-D work team to PISA workshop to assure proficiency on the frameworks for the cognitive test to become capable of designing applied research on test results.
			Year 4: Be able to develop reports taking into account these test frameworks (INEVAL will learn about this topic in July 2018)	100% assistance rate of INEVAL's PISA-D work team to PISA workshop to assure proficiency on developing reports taking into account these test frameworks.

8. Next steps

Ecuador's capacity building programme will be launched along with PISA-D. It is closely linked to the PISA-D implementation schedule so the capacity is in place before activities are undertaken in each phase. The PIP will serve as management tool, aligning the activities of INEVAL with those of OECD and the international contractor.

PISA-D is linked to national policies and aspirations. Ensuring that it is properly implemented, INEVAL can develop policy and practice relevant results. Such results could contribute to national goals for the development of a quality education while improving equity outcomes.

NOTES

[1] Central Bank of Ecuador/SEMPLADES/World Bank.

[2] *El Telégrafo* local newspaper, published on 3 February 2015.

[3] Adapted from a text prepared by Isabel de Guarderas, based on the article by Grossman, David, L. Democracia, "Educación para la ciudadanía e inclusión: Un Enfoque Multidimensional", Dossier: *Perspectivas*, Vol. XXXVIII, No. 1, March 2008.

[4] Retrieved from the website of the Ministry of Education of Ecuador at http://educacion.gob.ec/oferta-educativa/.

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PISA FOR DEVELOPMENT
Capacity Building Plan: Ecuador

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. Ecuador is one of six countries participating in the project, and the Ministry of Education, along with the National Institute for Educational Evaluation (INEVAL), is responsible for the project in the country. This plan covers the four-year PISA for Development cycle (2015-2018) and includes costed learning activities related to the implementation schedule of the project in Ecuador. PISA for Development is technically complex, operationally demanding and statistically advanced, and the capacity building plan therefore focuses on PISA components that will allow Ecuador 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: Ecuador* report have been used to design this capacity building plan for Ecuador that will be implemented by the OECD, its contractors, the Ministry of Education, and the National Institute for Educational Evaluation (INEVAL), through the PISA for Development project.